Mitigated Negative Declaration for Solids Handling Improvement Project

GOLETA SANITARY
Water Resource Recovery District

One William Moffett Place
Goleta, CA 93117

SCH # 2025100842

November 2025

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State Clearing House Number:
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List of Acronyms and Abbreviations

AB	Assembly Bill
A.D.	Common Era (a.k.a., After Death)
AMSL	Above Mean Sea Level
ANSI	American National Standards Institute
APN	Assessor’s Parcel Number
AQIA	Air Quality Impact Analysis
ATC	Authority to Construct
BACT	Best Available Control Technology
BAU	Business as Usual
BBCI	Barbareño Band of Chumash Indians
B.C.	Before Common Era (a.k.a., Before Christ)
BESP	Biosolids and Energy Strategic Plan
BMP	Best Management Practice
BVBMI	Barbareño/Ventureño Band of Mission Indians
CA	California
CA-217	California State Route/Highway 217
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standard
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model®
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CAP	Climate Action Plan
CBC	California Building Code
CCAA	California Clean Air Act
CCC	California Coastal Commission
CCIC	Central Coast Information Center
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERS	California Environmental Reporting System
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
CHP	Combined Heat and Power

CHRIS	California Historical Resources Information System
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranking
CSNC	California Sensitive Natural Communities
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CWR	Clean Water Rule
CY	Cubic Yard
dB	Decibel
dBA	"A-Weighted" Decibel
DTSC	[California] Department of Toxic Substances Control
DVP	Development Plan
DWR	[California] Department of Water Resources
EIR	Environmental Impact Report
EPA	[United States] Environmental Protection Agency
ESCP	Erosion and Sediment Control Plan
ESH	Environmentally Sensitive Habitat
ESRI	Environmental Systems Research Institute
FAA	Federal Aviation Administration
FE	Federally Endangered
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FP	Fully Protected
FT	Federally Threatened
g	Gravity
GHG	Greenhouse Gas
GSA	Groundwater Sustainability Agency
GSD	Goleta Sanitary District
GSP	Groundwater Sustainability Plan
H_2S	Hydrogen Sulfide
HFC	Hydrofluorocarbon
HMBP	Hazardous Materials Business Plan
hp	Horsepower
HRA	Health Risk Assessment

HS	Harvested Sludge
HSW	High Strength Waste
HVAC	Heating, Ventilation, and Air Conditioning
LACM	Natural History Museum of Los Angeles County
lb/hr	Pound(s) per hour
L_{eq}	Equivalent Noise Level
MAD	Mesophilic Anaerobic Digester
MCC	Motor control center
MCV2	Manual of California Vegetation, Second Edition
mg/m^3	Milligrams per Cubic Meter
MGD	Million Gallons per Day
MLD	Most Likely Descendent
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MMT	Million Metric Tons
MND	Mitigated Negative Declaration
mph	Miles per Hour
MS4	Municipal Separate Storm Sewer System
MT	Metric Ton
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standard
NAHC	Native American Heritage Commission
NIOSH	National Institute for Occupational Safety and Health
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHP	[California] Office of Historic Preservation
OSHA	Occupational Safety and Health Administration
PDR	Preliminary Design Report
PM_{10}	Respirable Particulate Matter (Less Than 10 Microns in Size)
$PM_{2.5}$	Fine Particulate Matter (Less Than 2.5 Microns in Size)
ppb	Parts per Billion
ppm	Parts per Million
PPV	Peak Particle Velocity
PRC	Public Resources Code
PRIMP	Paleontological Resources Impact Mitigation Program
PS	Primary Sludge

PSD	Prevention of Significant Deterioration
PTO	Permit to Operate
PU	Public Utility [Zoning Designation]
R	Refrigerant
ROC	Reactive Organic Compound
RWQCB	Regional Water Quality Control Board
SARWQCB	Santa Ana Regional Water Quality Control Board
SB	Senate Bill
SBA	Santa Barbara Municipal Airport
SBCAG	Santa Barbara County Association of Governments
SBCAPCD	Santa Barbara County Air Pollution Control District
SBCP&D	Santa Barbara County Planning and Development
SE	State Endangered
SEIR	Supplemental Environmental Impact Report
SGMA	Sustainable Groundwater Management Act
SMARA	Surface Mining and Reclamation Act
SNR	State Not Ranked
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
SRS	Scientific Resource Surveys, Inc.
SSC	Species of Special Concern
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SYBCI	Santa Ynez Band of Chumash Indians
TAC	Toxic Air Contaminant
TCR	Tribal Cultural Resource
TMDL	Total Maximum Daily Load
TWAS	Thickened Waste Activated Sludge
UCSB	University of California, Santa Barbara
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UT	Public Utility [Land Use Designation]
VMT	Vehicle Miles Traveled
WAS	Waste Activated Sludge
WEAP	Worker Environmental Awareness Program
WRRF	Water Resource Recovery Facility
$\mu g/m^3$	Microgram per Cubic Meter

Mitigated Negative Declaration for Solids Handling Improvement Project

1.0 INTRODUCTION

1.1 Project Overview

Goleta Sanitary District (GSD) owns and operates the Goleta Water Resource Recovery Facility (WRRF) located at One William Moffett Place, near the Santa Barbara Municipal Airport (SBA), in an unincorporated coastal area of Santa Barbara County, California. GSD is a special services district that provides wastewater collection, treatment, and disposal services to residents and businesses within the Goleta Valley.

The GSD WRRF has an annual average design flow capacity to treat 7.64 million gallons per day (MGD) of wastewater, but it is currently treating an annual average flow of approximately 4.9 MGD. The treatment process at WRRF begins with bar screens to remove large debris, as well as aerated grit tanks and two cyclone separators to remove grit and sand. The wastewater then flows into three primary clarifiers for solids removal prior to secondary treatment. The secondary treatment at WRRF includes biofilters, three aeration basins, and four secondary clarifiers.

Currently, GSD's WRRF has the following solids and gas handling process for treatment of solids recovered from wastewater. Primary Sludge (PS) coming from primary clarifiers is pumped to the digestion process. Waste activated sludge (WAS) generated from secondary treatment is thickened to 6% solids using two screw thickeners; the resulting thickened WAS (TWAS) is pumped to the digestion process. Combined PS and TWAS solids are stabilized in three mesophilic anaerobic digesters (MADs), operated in parallel. Digested biosolids are dewatered by two screw presses and then loaded onto trucks for transport off-site. A small portion of the dewatered biosolids is diverted into sludge drying beds for further stabilization to become a Class A product. Biogas produced in the digesters is burned in boilers to provide hot water for heating the digesters and to supply other heating needs at the WRRF. Biogas that is not required for heating is flared through the waste gas burner.

A condition assessment conducted in 2016 indicated that some of the unit processes at WRRF are nearing the end of their service life and would need rehabilitation and replacement soon. A Biosolids and Energy Strategic Plan (BESP) was developed in August 2019 by Hazen and Sawyer (Hazen), which evaluated biosolids unit processes in detail and recommended upgrading existing facilities to mitigate regulatory uncertainties affecting biosolids disposition, to diversify beneficial use outlets, and to approach energy neutrality for the facility. The BESP summarized the capacity evaluation for the existing solids processes, including digesters considering the current and anticipated future flows and loads, and identified the need to build a new digester to maintain firm capacity. Firm capacity was defined as the ability to maintain full treatment capacity with the largest single process unit out of service. The BESP also included assessment of the High Strength Waste (HSW) co-digestion and the feasibility and benefits of reaching energy neutrality. BESP provided GSD with a suite of improvement options for the WRRF, each with its own independent utility and purpose.

GSD is proposing to implement a Solids Handling Improvement Project (SHIP) at its WRRF (Project), which includes the construction of a thermal dryer facility. The addition of the thermal dryer facility will decrease the amount of hauled sludge, as well as increase the quality of biosolids produced, thus increasing the potential for beneficial reuse of the product. The proposed Project includes the following components:

- A thermal dryer, which will heat dewatered sludge to transform it into Class A biosolids;
- A thermal heater system, which will use natural gas to provide heat to operate the thermal dryer, with the option to convert to using biogas produced by the digesters in the future, when gas production increases;
- Loadout facilities, intended to load Class A biosolids into trucks for removal from the site;
- Associated civil, structural, electrical and instrumentation work; and
- A fire pump for a fire suppression system at the new buildings.

1.2 Purpose of the Mitigated Negative Declaration

This Mitigated Negative Declaration (MND) has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA), as set forth in the California Public Resources Code (PRC) Sections 21000 to 21174. In accordance with the California Code of Regulations (CCR) Title 14 Section 15002(a) CEQA Guidelines, the basic purposes of CEQA are to inform public agency decisionmakers and the general public of the significant environmental effects of a project, identify possible ways to minimize the significant effects through the use of mitigation measures or alternatives to the Project, and disclose to the public the reasons why a government agency approved the project, if significant environmental effects are involved.

An MND for a project subject to CEQA is prepared when an environmental analysis of the project shows that there is no substantial evidence that the project may have a significant effect on the environment after mitigation [CEQA Guidelines Section 15070(b)]. As discussed in Chapter 3 – Environmental Checklist, the proposed Project is not expected to result in any significant adverse environmental impacts after mitigation; therefore, an MND is the appropriate CEQA document.

1.3 Public Review Process

Publication of this MND marks the beginning of a 30-day public review and comment period. During this period, the MND will be available to local, State, and federal agencies and to interested organizations and individuals for review. Written comments concerning the environmental review contained in this MND during the 30-day public review period should be sent to:

Steve D. Wagner, PE
General Manager
Goleta Sanitary District
One William Moffett Place, Goleta, CA 93117
Phone: (805) 967-4519: Fax: (805) 964-3583
SWagner@GoletaSanitary.org

Comments are requested to be provided no later than November 10, 2025.

Following the conclusion of the public review period, GSD will consider the adoption of the MND for the Project at a regularly scheduled GSD board meeting. GSD shall consider the MND together with any comments received during the public review process. Upon adoption of the MND, GSD may proceed with Project approval actions.

2.0 PROJECT DESCRIPTION

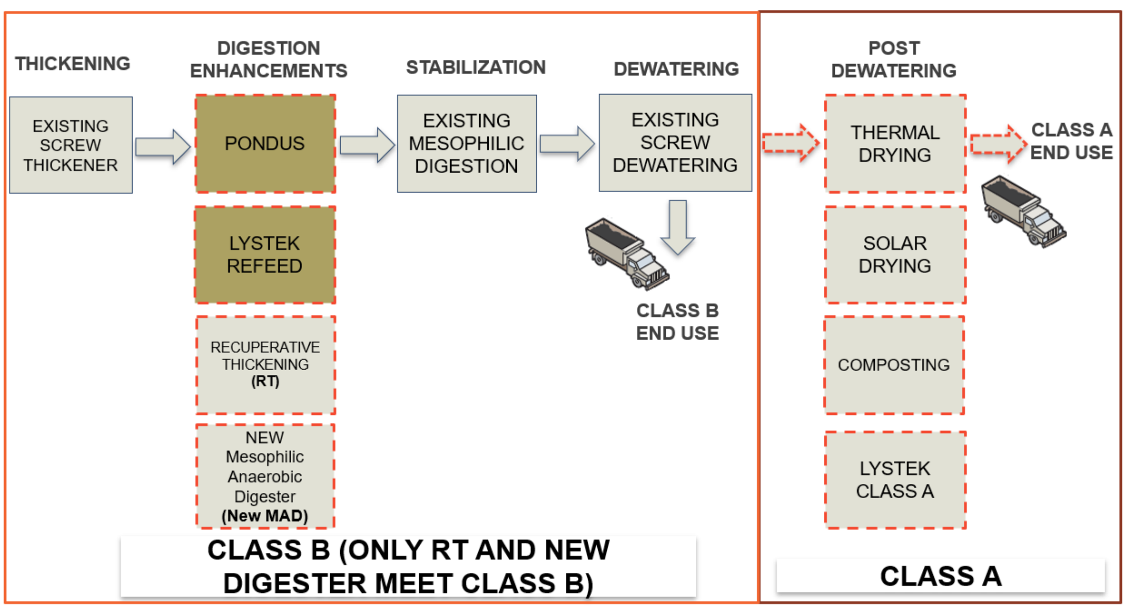
2.1 BESP Background

Development of the BESP included the evaluation of a wide variety of technologies to increase digestion capacity and biogas production while leveraging existing assets. Technology alternatives were evaluated based on economic and non-economic factors to address the distinct goals and strategies identified within BESP. Proposed alternatives were evaluated for effectiveness in achieving the overall strategic objectives of increasing digester capacity and biogas production and producing Class A biosolids material. Class A biosolids are defined as dewatered and heated material that meets the United States Environmental Protection Agency (EPA) guidelines contained in Code of Federal Register (CFR) Part 503 for land application with no restrictions, thus reducing disposal costs. Figure 2-1 presents the alternatives that were evaluated in the BESP.

The BESP alternatives evaluation results identified the following projects:

1) The addition of a new anaerobic digester is the most feasible option to increase digestion capacity and biogas production.
2) Thermal drying is the preferred approach to achieve Class A material when compared to other post dewatering options.

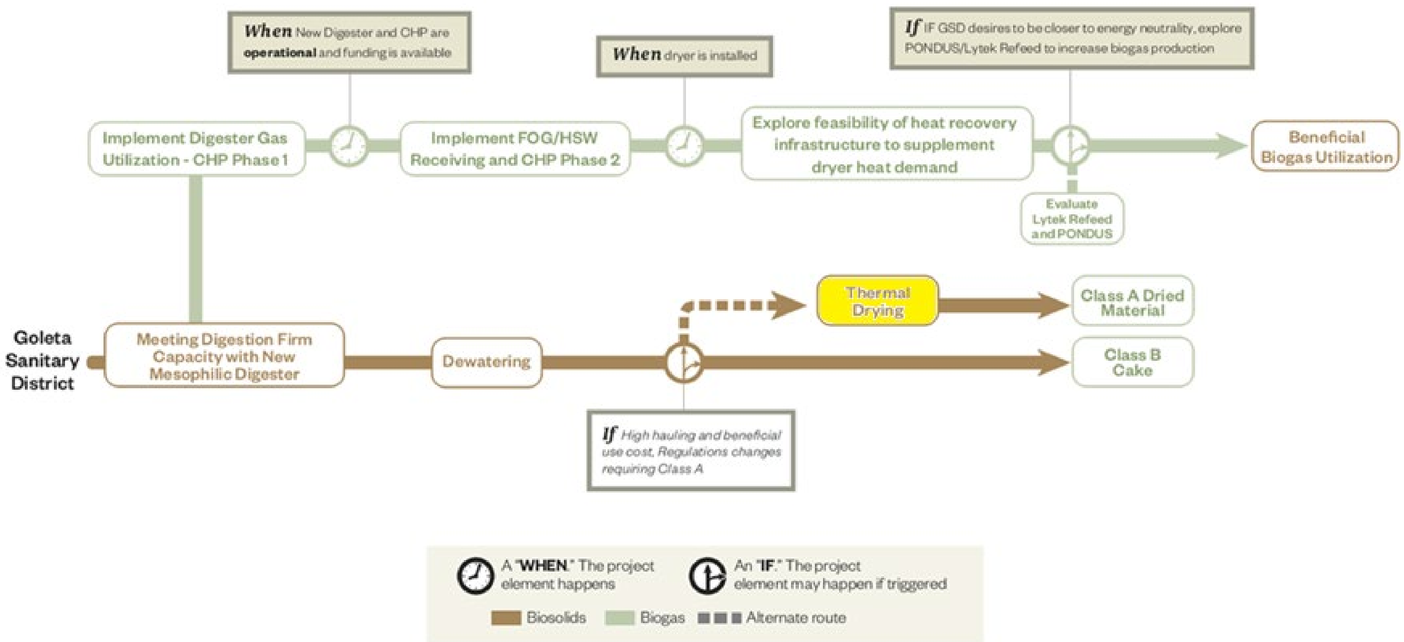
Figure 2-1: Biosolids Alternatives Evaluated



Approaches for achieving energy neutrality by implementing technologies and strategies to maximize biogas production and energy recovery, including on-site renewable energy (solar) and energy storage, were evaluated as part of the BESP. The results of this evaluation identified combined heat and power (a combustion engine) as the most desirable biogas utilization technology. As a result of the BESP, a roadmap was developed, as shown in Figure 2-2.

A MND (State Clearinghouse No. 2022040242) was completed and approved in 2022 for a prior project consisting of a new 550,000-gallon digester, a 160-kilowatt CHP engine, and a biogas pretreatment system. That initial project under the BESP, referred to as the 2022 Biogas Project, was oriented toward the goal of increasing digester capacity.

Figure 2-2: Biosolids and Energy Roadmap



Due to increasing biosolids hauling and disposal costs, GSD is moving forward with the Solids Handling Improvement Project (SHIP) (highlighted in Figure 2-2) which is focused on the addition of a thermal dryer facility to produce Class A Biosolids. The addition of the thermal dryer facility will decrease the amount of hauled sludge and increase the quality of biosolids produced, therefore increasing the potential for beneficial reuse of the product.

In addition to the SHIP, GSD has initiated engineering and permitting work on a Solar Energy Storage Project (Solar Project). Photovoltaic (PV) solar panels will be installed that can generate approximately 800 kilowatts, which is projected to generate approximately 1,414,000 kilowatt-hours of energy per year. A battery energy storage system will also be installed providing approximately 1,600 kilowatt-hours of energy storage.

2.2 Project Objectives

The objective of the SHIP is to design and construct the proposed new thermal dryer facility. The Preliminary Design Conditions for this Project were identified and reported in GSD's Biosolids & Energy – Solids Handling Improvement Project Preliminary Design report (PDR), which was prepared and submitted to GSD by Hazen in October 2022.

This MND has been prepared based on the PDR (Hazen 2022), the 60% design (Hazen 2024), and the BESP (Hazen 2019). While the previously approved project, which includes a new anaerobic digester and CHP engine, focuses on enhancing digestion capacity and biogas utilization, the SHIP independently adds thermal drying to produce Class A biosolids. Each project has stand-alone utility and fulfills separate objectives, though both contribute to the broader goals of the BESP.

2.3 Project Location

The Goleta WRRF is located at One William Moffett Place, in an unincorporated coastal area of Santa Barbara County, California. The plant is located approximately 10 miles west of the City of

Santa Barbara, near the Pacific Coast, as shown in Figure 2-3. Treated wastewater is discharged through an ocean outfall, located south of WRRF, into the Pacific Ocean at a location more than one mile offshore of Goleta Beach Park. The thermal dryer facility will be housed in a new building in the existing Biosolids Handling Area. Two of the existing sludge drying beds will be utilized for the site of the new Thermal Dryer Building. The boundary of the proposed Project is provided in Figure 2-4.

2.4 Existing Facility Components

The existing solids processing flow diagram is shown in Figure 2-5. Currently, GSD's WRRF has the following solids and gas handling processes for treatment of solids to achieve Class B biosolids:

- WAS generated from secondary treatment flows through two screw thickeners and is thickened up to 6% solids;
- TWAS is combined with PS coming from primary clarifiers prior to the digestion process;
- Combined PS and TWAS solids are stabilized in three MADs, operated in parallel;
- Digested biosolids are dewatered by two screw presses prior to beneficial use as a Class B product;
- A small portion of the dewatered biosolids goes into sludge drying beds for further stabilization to become a Class A product; and
- Biogas produced in the digesters is burned in boilers to provide hot water for heating the digesters and to supply other heating needs at the WRRF. Biogas that is not required for heating is flared through the waste gas flare. Currently, the new CHP engine and biogas pretreatment systems are being built to generate a combination of electric and thermal energy to offset purchased power and heat the digesters and buildings.

2.5 Project Components

General areas where Project components are proposed to be located are identified in the PDR and shown in Figure 2-6. The Project components will be located entirely within the existing facility footprint, and no additional land will be needed to accommodate the new thermal dryer facility. Figure 2-7 is a civil site plan showing the preliminary drawing of the proposed Project components.

A description of each of the Project components is provided below.

2.5.1 Dewatered Cake Bin

A dewatered cake bin will be provided to store dewatered cake prior to drying. The cake bin will be located on the site of an existing sludge holding bin and will utilize the existing system of screw conveyors to transport the cake from the dewatering screw presses to the cake storage bin. The pumps feeding cake to the dryer will be located alongside the cake bin.

2.5.2 Thermal Dryer System

The indirect thermal dryer system will reduce GSD's sludge hauling by drying the dewatered sludge cake from 14% to 90% dry solids or greater. The dried sludge cake will be pelletized to reduce dust emissions. The Thermal Dryer, cake bin, cake feed pumps, cooling conveyor, pelletizer, pellet conveyor, thermal fluid heater, condenser, odor control system, and controls will be provided as a package system.

Figure 2-3: GSD Project Vicinity

Figure 2-4: Boundary of the Proposed Project

Figure 2-5: Existing WRRF Processing Flow Diagram

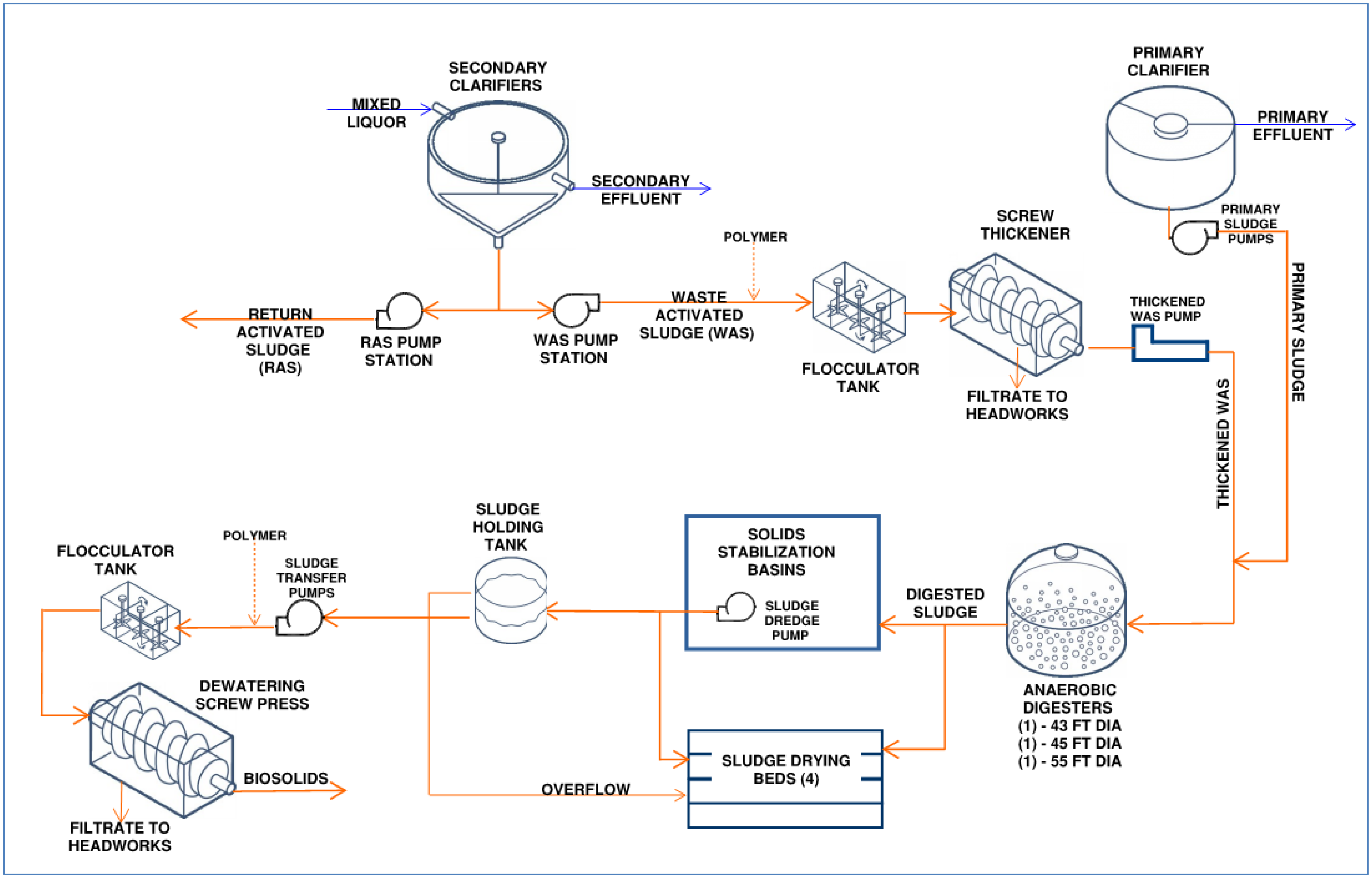


Figure 2-6: Overview of Project Site

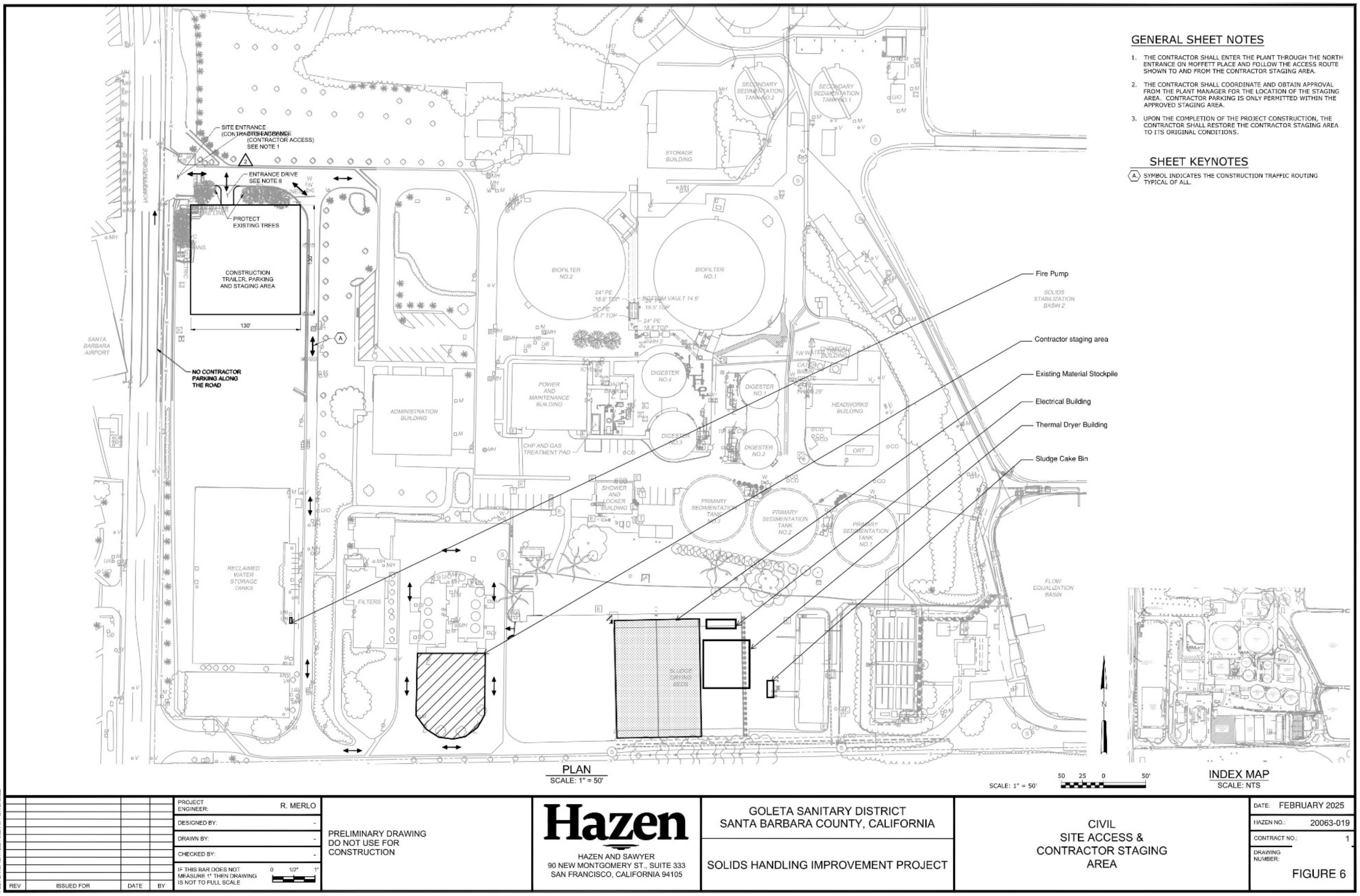
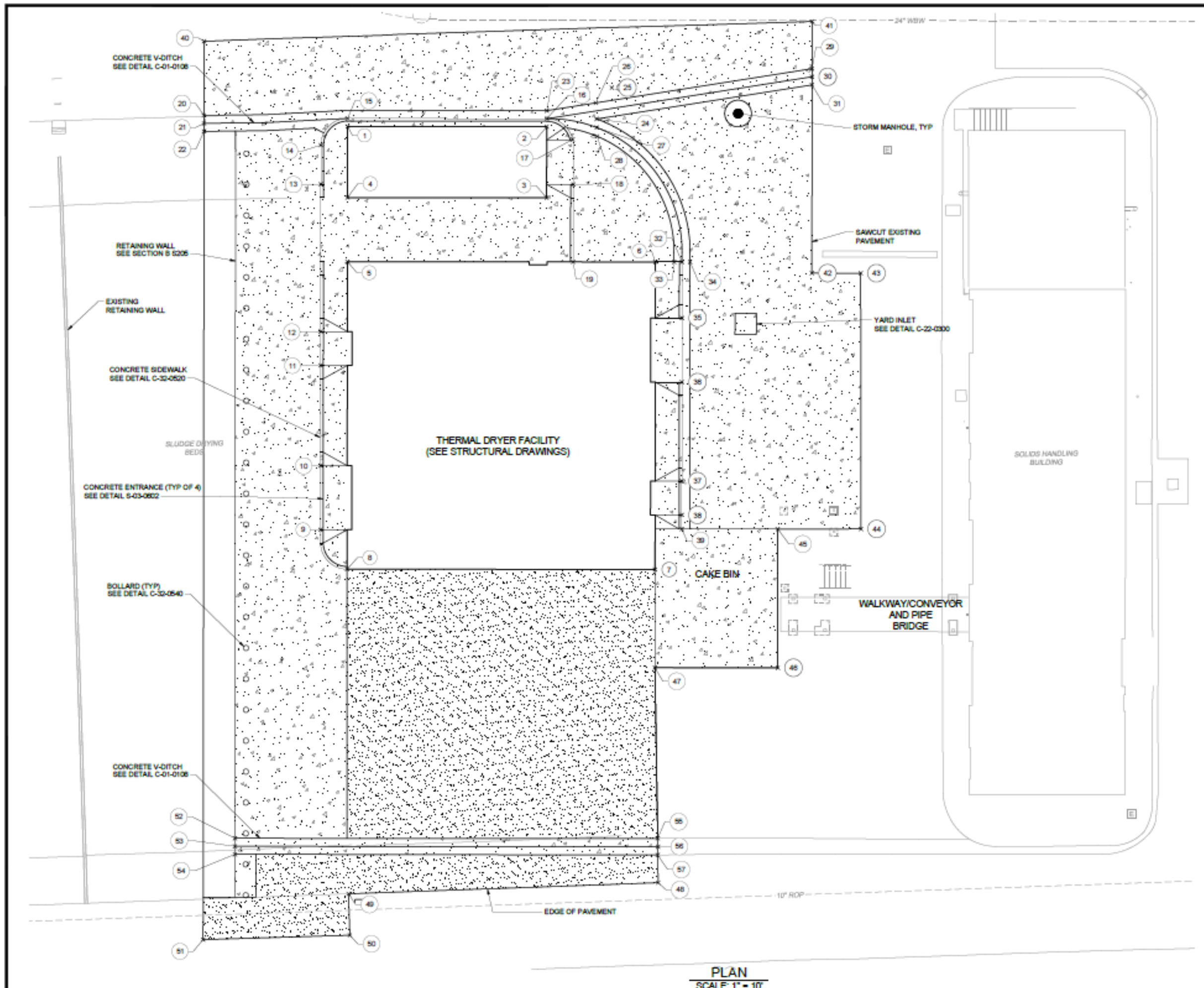


Figure 2-7: Civil Site Plan



GENERAL SHEET NOTES

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS. DRAWINGS MAY NOT COMPLETELY DEPICT EXISTING CONDITIONS.

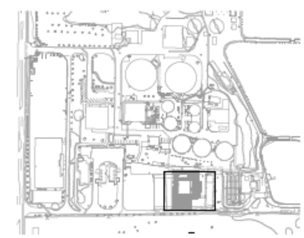
STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
1	1981039.07	6008918.07	
2	1981038.39	6008955.39	
3	1981025.06	6008955.15	
4	1981025.74	6008917.83	
5	1981013.74	6008917.61	
6	1981012.69	6008975.35	
7	1980955.08	6008974.30	
8	1980956.12	6008916.56	
9	1980963.61	6008911.70	
10	1980975.61	6008911.92	
11	1980994.40	6008912.26	
12	1981000.73	6008912.37	
13	1981028.33	6008912.87	
14	1981035.66	6008913.00	
15	1981040.57	6008918.09	
16	1981039.89	6008955.42	
17	1981035.92	6008960.23	
18	1981027.47	6008960.20	
19	1981012.97	6008959.93	
20	1981041.61	6008891.15	
21	1981040.11	6008891.14	
22	1981038.61	6008891.13	
23	1981041.39	6008955.47	
24	1981039.67	6008964.78	
25	1981045.48	6008967.74	
26	1981042.69	6008964.68	
27	1981038.06	6008964.77	
28	1981036.42	6008964.81	
29	1981048.40	6009005.35	

STAKING TABLE

POINT #	NORTHING	EASTING	DESCRIPTION
30	1981046.88	6009005.32	
31	1981045.36	6009005.29	
32	1981012.60	6008980.35	
33	1981012.63	6008978.85	
34	1981012.58	6008981.85	
35	1981002.10	6008980.16	
36	1980990.11	6008979.94	
37	1980971.55	6008979.60	
38	1980965.21	6008979.49	
39	1980962.60	6008979.44	
40	1981055.48	6008891.42	
41	1981057.24	6009005.51	
42	1981010.10	6009004.65	
43	1981009.92	6009013.82	
44	1980962.01	6009013.04	
45	1980962.26	6008997.44	
46	1980936.27	6008997.00	
47	1980936.68	6008973.97	
48	1980896.40	6008973.89	
49	1980895.31	6008915.79	
50	1980887.55	6008915.89	
51	1980887.20	6008888.37	
52	1980906.08	6008894.65	
53	1980904.58	6008894.63	
54	1980903.08	6008894.60	
55	1980904.71	6008973.93	
56	1980903.14	6008973.98	
57	1980901.59	6008973.87	

SCALE: 1" = 10'   10'   5'   0   10'



INDEX MAP
SCALE: NTS

PROJECT ENGINEER:	R. MERLO
DESIGNED BY:	-
DRAWN BY:	-
CHECKED BY:	-
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE	0 1/2" 1"

REV | ISSUED FOR | DATE | BY

PRELIMINARY DRAWING
DO NOT USE FOR
CONSTRUCTION

Hazen
HAZEN AND SAWYER
90 NEW MONTGOMERY ST., SUITE 333
SAN FRANCISCO, CALIFORNIA 94105

GOLETA SANITARY DISTRICT
SANTA BARBARA COUNTY, CALIFORNIA

SOLIDS HANDLING IMPROVEMENT PROJECT

CIVIL
SITE PLAN

DATE:	2024
HAZEN NO.:	20063-019
CONTRACT NO.:	1
DRAWING NUMBER:	C-05

2.5.2.1 Thermal Fluid Heaters

The Thermal Dryer receives the heat needed to evaporate the water content of the cake by a recirculating loop of heated thermal fluid. This fluid is pumped through a thermal fluid heater, which is very similar to a hot water boiler in design and purpose. The thermal fluid is exposed to a high heat, without direct contact to the burner exhaust. This now-heated fluid is then piped to the dryer equipment, where it heats the cake and encourages evaporation. The Thermal Fluid Heater will utilize natural gas for heating. Provision will be made to allow the system to operate on biogas in the future, if gas production increases.

2.5.2.2 Thermal Dryer

The sludge cake is pumped from the cake bin and into the dryer, where it is indirectly heated and slowly agitated by a pair of counter-rotating screws, which may also be referred to as paddles by different manufacturers. The screws also serve as the source of indirect heating for the sludge cake. A heated thermal fluid oil is continually pumped through the screws. The heat results in the evaporation of the water entrained in the sludge, while the screws slowly turn the cake over and carry it to the discharge of the equipment. The dewatered product is then conveyed through a cooling conveyor to a pelletizer, which will compress it into pellets to improve handling characteristics and reduce dust production. After pelletizing, the product will enter a pneumatic conveyor, which will transport it outside the building and deposit it into a truck.

There are a number of manufacturers of indirect screw-type thermal dryers; each has unique requirements in terms of ancillary equipment and equipment configuration. The manufacturer of the dryer was selected through a competitive preselection process to allow the features of the facility to be tailored to the configuration of the selected dryer. The dryer performance parameters are presented in the PDR.

2.5.3 Product Conveyance and Handling

A series of pumps and conveyors will be used to transfer the biosolids through the different components of the process that transforms it from blended biosolids into the dried and pelletized end product. Biosolids will be pumped from the holding tank in the Dewatering Building to the dewatering screw presses. Two existing conveyors will be used to transfer dewatered cake from the screw presses to the cake bin. A horizontal screw conveyor will transfer cake from the cake bin to the dryer feed pumps, which will pump the cake to the thermal dryer.

An inclined cooling conveyor will transfer the dried product from the dryer to the pelletizer. The pelletizer will discharge it into a bucket elevator, which will transfer the pelletized product into the pellet cooler. The pellet cooler will discharge the cooled pellets into a dense phase pneumatic conveyor, which will transfer them to the truck loading point and discharge them into the truck.

If the dryer is offline and the plant desires to empty the cake bin, the dryer feed pumps will have a bypass branch that will discharge to the truck bay outside.

2.5.4 HVAC

Ventilation will be provided for the Thermal Dryer Room, the Thermal Fluid Heater Room, and the Pelletizer Room. Air conditioning will be provided for the Electrical Building. The heating, ventilation, and air conditioning (HVAC) systems shall be designed in accordance with the following codes and standards:

- 2022 California Mechanical Code (effective January 1, 2023);
- 2022 California Energy Code (effective January 1, 2023);
- 2022 California Plumbing Code (effective January 1, 2023); and
- 2020 National Fire Protection Association (NFPA) 820 – Standard for Fire Protection in Wastewater Treatment and Collection Facilities;
- 2025 NFPA 660 – Standard for Combustible Dusts and Particulate Solids
- 2024 NFPA 87 – Standard for Fluid Heaters

The HVAC system shall be designed to operate in outdoor design temperatures from the 2021 ASHRAE Handbook for the SBA (WMO: 723925). Outdoor design temperatures are as follows: Winter: 35.4°F Dry Bulb (99.6% design criteria) and Summer: 80.1°F Dry Bulb/63.4°F Wet Bulb (0.4% design criteria).

The requirements for the design of ventilation systems serving process areas, such as the Dryer Room and the Thermal Fluid Room, are in NFPA-820. Per Table 6.2.2(a), Row 12, Line a, in order to have the Dryer Room be unclassified, the HVAC system is required to provide a minimum continuous flow of outside air at a rate of 6 Air Changes Per Hour (ACH). The Thermal Fluid Heater Room would fall under Table 6.2.2(a), Row 18, Line a.

NFPA 820 does not contain any ventilation requirements for spaces such as the Electrical Room. The HVAC systems for the building would meet the requirements of the Mechanical and local codes.

The air discharged by the Thermal Dryer will pass through a condenser to remove moisture, and then through an odor control unit, before discharge to the atmosphere.

Air discharged by the pelletizer and the pneumatic conveyor will be ducted to a rotary cyclone for dust removal before discharge to atmosphere.

2.5.5 Plumbing

The plumbing systems shall be designed in accordance with the following codes and standards:

- 2022 California Plumbing Code (effective January 1, 2023)
- American National Standards Institute (ANSI) standards, including ANSI Z358.1 – Emergency Eyewash and Shower Equipment

The plumbing system will serve the domestic and emergency fixture water needs, washdown water needs, and waste drainage and venting of the thermal dryer facility.

2.5.6 Fire Protection

Fire Protection will be provided for the Thermal Dryer Room, the Thermal Fluid Heater Room and the Pelletizer Room. The Fire Protection systems shall be designed in accordance with the following codes and standards:

- 2022 California Fire Code (effective January 1, 2023)

- 2025 NFPA 660 – Standard for Combustible Dusts and Particulate Solids
- 2024 NFPA 87 – Standard for Fluid Heaters

The thermal dryer facility will be provided with a wet sprinkler system to comply with the NFPA 820 requirements for fire suppression in the building. The wet sprinkler system will be provided with a double check valve-type backflow preventer to protect the upstream water supply from cross-contamination. All belowground piping will be ductile iron pipe, and all interior exposed piping will be Schedule 40 steel. The sprinkler system design will account for the building height and movement.

The Thermal Fluid Heater Room will be provided with an oil-resistant water based expanding foam fire suppression system to minimize the impact of water on a thermal fluid fire event.

A diesel-fueled fire pump engine will be installed to ensure availability of water in event of a fire. The specific fire pump engine has not yet been selected but will be at most 225 horsepower and will meet the emissions standards required by the Santa Barbara County Air Pollution Control District (SBCAPCD).

Combustible gas detectors will be provided in various areas as needed to comply with NFPA 820 requirements.

2.5.7 Electrical

The thermal dryer facility will be powered by a new motor control center (MCC) located inside the new Electrical Building adjacent to the new Thermal Dryer Building. A new duct bank will be needed between the existing Sludge Dewatering Building and the new Electrical Building. New facilities located outside the Thermal Dryer Building will be powered by existing MCCs.

2.5.8 Civil Works

Construction will be occurring on the existing treatment plant site. There will be new pavement in the location of drying beds 2 and 3, but in general, the existing pavement will either be maintained in place or removed as required for construction. Grading will be limited to what is required around new facilities and will be graded to match existing drainage patterns.

New site utilities will be provided to the thermal dryer facility, and existing utilities will be removed and replaced or relocated. A new 1.5-inch service air line and 6-inch medium pressure sludge gas pipeline, both approximately 475 feet in length, will connect the existing systems to the Thermal Drying Facility. A new 3-inch natural gas pipeline approximately 800 feet in length, will run between the existing gas meter and the Thermal Dryer Building.

2.6 Project Construction

Construction and laydown areas are shown in Figure 2-4 above.

2.6.1 Project Construction Components

The majority of construction of the thermal dryer facility can be completed with limited impact to the WRRF operation since this will be a new facility. The Project construction components are listed below:

- Fill and grade sludge drying beds;
- Construct utility pipelines, including new service air, natural gas, and water supply lines;
- Construct Thermal Dryer Building and Electrical Building;
- Construct and install piping, pumps, and fire pump engine;
- Install cake bin, thermal dryer, conveyors, and thermal fluid heater; and
- Thermal Dryer start-up and steady state operations.

2.6.2 Construction Equipment

The specific type of equipment used during construction would be determined by the selected General Contractor. Table 2-1 lists the offroad equipment that may be used during construction.

Table 2-1: Construction Offroad Equipment by Phase for the Proposed Project

Phase No. / Name		Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	HP	Load Factor
1	Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3	9	84	0.37
		Rubber Tired Dozers	Diesel	Average	1	9	367	0.4
		Concrete/Industrial Saws	Diesel	Average	1	9	33	0.73
2	Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1	9	84	0.37
		Excavators	Diesel	Average	1	9	136	0.38
		Dumpers/Tenders	Diesel	Average	2	9	16	0.38
		Skid Steer Loaders	Diesel	Average	1	9	71	0.37
		Rubber Tired Dozers	Diesel	Average	1	9	367	0.4
3	Linear, Drainage, Utilities, & Sub-Grade	Bore/Drill Rigs	Diesel	Average	1	9	83	0.5
		Excavators	Diesel	Average	1	9	136	0.38
		Rubber Tired Dozers	Diesel	Average	1	9	367	0.4
		Tractors/Loaders/Backhoes	Diesel	Average	1	9	84	0.37
		Cranes	Diesel	Average	1	9	367	0.29
		Other General Industrial Equipment	Diesel	Average	1	9	35	0.34
		Air Compressors	Diesel	Average	1	9	37	0.48
		Other Construction Equipment	Diesel	Average	1	9	82	0.42
4	Building Construction A	Cranes	Diesel	Average	1	9	367	0.29
		Forklifts	Diesel	Average	1	9	82	0.2
		Tractors/Loaders/Backhoes	Diesel	Average	1	9	84	0.37
		Dumpers/Tenders	Diesel	Average	2	9	16	0.38

Phase No. / Name		Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	HP	Load Factor
5	Building Construction B	Cranes	Diesel	Average	1	9	367	0.29
		Forklifts	Diesel	Average	1	9	82	0.2
		Skid Steer Loaders	Diesel	Average	1	9	71	0.37
7	Architectural Coating	Air Compressors	Diesel	Average	1	9	37	0.48

Notes:

Engine load factors and hp ratings are CalEEMod default values (version 2022.1.1.33).

No offroad equipment is expected to be used for the Commissioning (i.e., CalEEMod Phase: Building Construction C) and Startup and preliminary operations (i.e., CalEEMod Phase: Building Construction D) phases; therefore, these phases are not included.

2.6.3 Project Phases and Construction Schedule

Demolition, construction, commissioning, and startup are anticipated to occur over an 18-month period in the following eight phases:

- Construction Phase 1: Demolition of existing asphalt surfaces;
- Construction Phase 2: Site preparation for thermal dryer facility;
- Construction Phase 3: Trenching and installation of utility pipeline;
- Construction Phase 4: Construction of the Thermal Drying Facility;
- Construction Phase 5: Mechanical and electrical work;
- Construction Phase 6: Commissioning;
- Construction Phase 7: Architectural coating; and
- Construction Phase 8: Startup and preliminary operations.

A preliminary construction schedule is shown in Table 2-2.

Table 2-2: Proposed Project Preliminary Construction Schedule by Phase

Phase No. / Name		Phase Type	Start Date	End Date	Days per Week	Work Days per Phase	Phase Description
1	Demolition	Demolition	3/2/2026	4/5/2026	4	20	Demolition of asphalt surfaces
2	Site Preparation	Site Preparation	4/6/2026	6/7/2026	4	36	Site preparation and grading for Thermal Dryer System
3	Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	6/8/2026	6/28/2026	4	12	Trenching and installation of utility pipelines
4	Building Construction A	Building Construction	6/29/2026	5/12/2027	4	183	Construction of the Thermal Dryer System

Phase No. / Name		Phase Type	Start Date	End Date	Days per Week	Work Days per Phase	Phase Description
5	Building Construction B	Building Construction	6/1/2027	6/16/2027	4	10	Paving and Mechanical and electrical work
6	Building Construction C	Building Construction	6/16/2027	7/4/2027	4	10	Commissioning
7	Architectural Coating	Architectural Coating	7/5/2027	8/8/2027	4	20	Painting
8	Building Construction D	Building Construction	8/9/2027	8/16/2027	4	5	Startup and preliminary operations

2.6.4 Structural and Geotechnical Design

The proposed Project includes construction of new structures. The new Thermal Dryer Building will consist of a pre-engineered metal building on concrete mat slab foundation. The electrical building will be a reinforced masonry building on mat slab foundation. Concrete structures shall be designed in accordance with the requirements of American Concrete Institute (ACI) 350 – Code Requirements for Environmental Engineering Concrete Structures and American Society of Civil Engineers (ASCE) 7 – Minimum Design Loads for Buildings and Other Structures. Steel structures shall be designed in accordance with American Institute of Steel Construction (AISC) – Manual of Steel Design. Masonry structures shall be designed in accordance with The Masonry Society (TMS) 402/602 Building Code Requirements and Specification for Masonry Structures.

The strength, serviceability, and quality standards shall not be less than stipulations required by the governing code. The governing code used for the proposed design is the 2022 California Building Code. Materials and construction shall be designed in accordance with the California Building Code, and other codes as presented within this report. The California Building Code consists of the 2021 International Building Code as adopted and amended by the State of California.

Ninyo and Moore performed a geotechnical evaluation for the 2022 Biogas Project. Since the proposed SHIP site is close to the 2022 Biogas Project site, the Project site has similar geologic conditions to the 2022 Biogas Project site. Therefore, designs will be in accordance with specific recommendations that are contained in Appendix D of the Soil Engineering Report, prepared by Ninyo & Moore for the proposed Project (Ninyo & Moore 2021).

2.6.5 Site Work and Truck Load Estimates

The proposed Project includes the addition of new facilities in areas that are either paved or on land that has been previously disturbed. The estimated volume of excavated soil, soil reused for backfill, and soil imported for the proposed Project is shown in Table 2-3, and a summary of the number of trucks needed for transport of the soils is shown in Table 2-4. Approximately 2,160 cubic yards (CY) of soil will be excavated, 1,760 CY of which will be reused onsite for backfill. The estimated volume of excavated soil to be disposed of off-site is 400 CY. Total material hauling trips are estimated to be 172, including soil disposal and hauling of waste, with a maximum of 30 trips per day.

Table 2-3: Excavation, Backfill (Reuse), and Import Amounts

Area of Improvement	Excavation Amount (CY)	Backfill (Reuse) Amount (CY)	Import Amount (CY)
Drying Beds 2 & 3	1,700	1,300	400
Piping, Misc.	460	460	–
TOTAL	**2,160**	**1,760**	**400**

Table 2-4: Summary of Truck Generation

Parameter	Number of Haul/ Delivery Trucks	Volume per Truck
Concrete Trucks	75	10 CY
Trailer/Tractors delivering rebar	2	20,000 lbs
Trailer/Tractors delivering masonry	5	30,000 lbs
Trailer/Tractors delivering other building materials	11	20,000 lbs
Trucks delivering soil	31	12 CY
Trucks transporting soil off-site	34	12 CY
Trucks/Trailers delivering miscellaneous equipment from pipe to pumps	14	20,000 lbs

The truck route during construction from U.S. Highway 101 to the WRRF will be:

- Exit California State Route 217 (CA-217) towards Airport/University of California, Santa Barbara (UCSB) from U.S. Highway 101;
- Continue west on CA-217 to Exit 1 Sandspit Road;
- Turn right onto Moffett Place; and
- Turn right into the GSD WRRF.

2.6.6 Staging Areas, Parking, and Storage

An on-site construction trailer will be needed for the duration of the Project. This trailer will provide office space for the contractor's management personnel. Parking will be provided at the contractor trailer for management staff. Materials will also be stored off site in a separate laydown area. This laydown area may include yard space and rented warehouse space for tools, materials, and equipment. It is also expected that excavated materials will be transported off-site.

Peak construction workers would be 30 on-site, with an average of 18 workers on any given day. They would come primarily from the Santa Barbara/Ventura area.

2.6.7 Construction Best Management Practices (BMPs)

GSD will incorporate the specific design recommendations that are contained in the Geotechnical Evaluation prepared by Ninyo & Moore (Ninyo & Moore 2022) (see Appendix D). GSD's existing Storm Water Pollution Prevention Plan (SWPPP) will be updated to include an erosion and sediment control plan (ESCP) for construction of the proposed Project, which will include implementation of the following BMPs designed to minimize erosion:

- Methods such as geotextile fabrics, erosion control blankets, retention basins, drainage diversion structures, siltation basins, and/or spot grading will be used to reduce erosion and siltation into adjacent water bodies or storm drains during grading and construction activities.
- Entrances/exits to the construction site will be stabilized (e.g., using rumble plates, gravel beds, or other best available technology) to reduce transport of sediment off site. Any sediment or other materials tracked off site will be removed the same day as they are deposited using dry cleaning methods.
- Storm drain inlets will be protected from sediment-laden waters by the use of inlet protection devices, such as gravel bag barriers, filter fabric fences, block and gravel filters, and excavated inlet sediment traps.
- Construction staging and storage areas will be shown on the grading plans. These areas will be fenced, BMPs such as hay bales will be installed around the perimeter to prevent runoff from leaving the staging area, and entrances/exits will be stabilized.
- Exposed graded surfaces will be reseeded with ground cover vegetation to minimize erosion within 4 weeks of grading completion. This requirement will be noted on the building and grading plans.
- Erosion and sediment control measures will be in place throughout grading and development of the site until all disturbed areas are permanently stabilized.
- Construction materials and waste, such as paint, mortar, concrete slurry, fuels, etc., will be stored, handled, and disposed of in a manner which minimizes the potential for storm water contamination. Bulk storage locations for construction materials, and any measures proposed to contain the materials, will be shown on the building and grading plans.
- A copy of the updated SWPPP will be maintained on the Project site during grading and construction activities.

GSD will additionally implement BMPs to reduce fugitive dust and to follow the Santa Barbara County Grading Code Section 14.23, Dust Control by:

- Wetting, protecting, or containing all graded surfaces and materials, whether filled, excavated, transported, or stockpiled, in such a manner as to prevent the generation of dust.

2.7 Required Permits and Approvals

2.7.1 Regional and Local Permits and Approvals

The proposed Project is located within the permitting jurisdiction of the County of Santa Barbara, with the certified Local Coastal Program as the standard of review. Based on consultation with County planning staff, the Project will require a Conditional Use Permit

(CUP), Development Plan (DVP) Review, and Coastal Development Permit (CDP). There may also be ministerial local permits required, such as grading, stockpiling, building, electrical, etc.

Additionally, this Project will require a Santa Barbara County Air Pollution Control District (SBCAPCD) authority to construct (ATC) and, once operational, a permit to operate (PTO) for the new Thermal Dryer, Thermal Fluid Heater, pelletizer and cake handling equipment, and fire pump engine, as well as associated abatement devices for permitted equipment. An application for an ATC was prepared and submitted to the SBCAPCD for the Thermal Dryer, Thermal Fluid Heater, pelletizer and cake handling equipment on May 8, 2025. An ATC application for the fire pump engine is currently in development and expected to be submitted in early 2026.

2.7.2 California Permits and Approvals

The Project is also located within the California Coastal Commission (CCC) appeals jurisdiction, meaning that any local permit decision may be appealed to CCC by a member of the public or two commissioners.

2.7.3 Federal Permits and Approvals

Due to the location of the GSD WRRF adjacent to the SBA, the Project will also require a Notice of Proposed Construction (Form 7460-1) to the Federal Aviation Administration (FAA).

3.0 ENVIRONMENTAL CHECKLIST

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed Project. No topical areas on the CEQA environmental checklist were found to have mitigated impacts exceeding applicable thresholds of significance.

3.1 General Information

Project Title:	Solids Handling Improvement Project
Lead Agency:	Goleta Sanitary District One William Moffett Place Goleta, CA 93117
Contact Person and Phone Number:	Steve D. Wagner, PE General Manager/District Engineer Office: (805)967-4519
Project Location:	Goleta Sanitary District One William Moffett Place Goleta, CA 93117
Applicant:	Goleta Sanitary District One William Moffett Place Goleta, CA 93117
APN	071-200-019, 071-200-024
Community Plan Land Use Designation:	UT – Public Utility
Zoning Designation:	PU – Public Utilities
Description of Project:	See Chapter 2
Surrounding Land Uses and Setting:	To the north and west lies the SBA. To the south is the Goleta Pier and Goleta Beach Park Recreational Area. To the east is an additional public utility area. To the northeast there are mixed land uses, including single family, multiple family, institutional, industrial, vacant, open space, and mobile home park land uses.

3.2 Environmental Factors Potentially Affected

The following environmental impact areas have been assessed to determine their potential to be adversely affected by the proposed Project. As indicated by the checklist on the following pages, environmental topics marked with a "✓" may be adversely affected by the proposed Project. An explanation relative to the determination of impacts can be found following the checklist for each area.

☐	Aesthetics	☐	Agriculture/Forestry Resources	☐	Air Quality
☑	Biological Resources	☑	Cultural Resources	☐	Energy
☑	Geology/Soils	☑	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials
☐	Hydrology/Water Quality	☐	Land Use/Planning	☐	Mineral Resources
☐	Noise	☐	Population/Housing	☐	Public Services
☐	Recreation	☐	Transportation	☑	Tribal Cultural Resources
☑	Utilities/Service Systems	☐	Wildfire	☑	Mandatory Findings of Significance

3.3 Determination

On the basis of this initial evaluation:

- ☐ I find the Proposed Project COULD NOT have a significant effect on the environment, and that a NEGATIVE DECLARATION has been prepared.

- ☑ I find that although the Proposed Project could have a significant effect on the environment, there will not be significant effects in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION has been prepared.

- ☐ I find that the Proposed Project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.

- ☐ I find that the Proposed Project MAY have a "potentially significant impact" on the environment, but at least one effect: 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards; and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

- ☐ I find that although the Proposed Project could have a significant effect on the environment, because all potentially significant effects: 1) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards; and 2) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.

Signature: Steve Wagner **Date:** 11/26/2025

Steve D. Wagner
General Manager
Goleta Sanitary District

3.4 Environmental Checklist and Discussion

This section provides a discussion of the potential environmental impacts of the proposed Project. The evaluation of environmental impacts follows the questions provided in the Appendix G Checklist.

For each question listed in the Appendix G checklist, a determination of the level of significance of the impact is provided. Impacts are assigned to one of the following categories:

- A designation of no impact is given when no adverse changes in the environment are expected;
- A less than significant impact would cause no substantial adverse change in the environment;
- A less than significant impact with mitigation incorporated would have a substantial adverse impact on the environment but could be reduced to a less than significant level with incorporation of mitigation measure(s); and
- A potentially significant impact would cause a substantial adverse effect on the environment and no feasible mitigation measures would be available to reduce the impact to a less than significant level.

A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency relied upon for the analysis. A No Impact answer is adequately supported if the referenced information sources show that the impact simply does not apply to the project (e.g., the project falls outside a fault rupture zone). A No Impact answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

Once it is determined that a particular physical impact may occur, then the checklist answers must indicate if the impact is potentially significant, less than significant with mitigation, or less than significant.

“Potentially Significant Impact” is appropriate if there is substantial evidence that an effect may be significant. If there are one or more Potentially Significant Impact entries when the determination is made, an Environmental Impact Report (EIR) is required.

“Less Than Significant with Mitigation Incorporated” applies where the incorporation of mitigation measures has reduced an effect from Potentially Significant Impact to a Less Than Significant Impact. Mitigation measures are identified and explain how they reduce the effect to a less than significant level.

Explanation of each issue identifies:

1. The significance criteria or threshold, if any, used to evaluate each question; and
2. The mitigation measure identified, if any, to reduce the impact to less than significant.

I. Aesthetics

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☑	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

Existing Conditions:

The Project components will be located entirely within the existing facility footprint, and no additional land will be needed to accommodate the new thermal dryer facility. The new Thermal Dryer Building and Electrical Building will be located in an area currently occupied by a sludge drying bed. The addition of thermal drying facilities will reduce the need for sludge drying beds.

Environmental Determination:

a) Have a substantial adverse effect on a scenic vista?

Impact: No Impact

The proposed Project would not have an adverse effect on scenic vistas. The proposed Project site is located entirely within the existing GSD WRRF and includes facilities that are similar in height, scale, and mass to those currently on the existing GSD WRRF. The proposed Project does not contain any buildings or structures that are significantly higher than the existing buildings at the site. The opportunities for views from vantage points adjacent to the site would remain similar to existing conditions. There would be no impact on scenic vistas generated by the proposed Project.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Impact: No Impact

The proposed Project would not have a substantial adverse effect on scenic resources, including those located within a designated scenic highway. The site is bounded by Moffett Place to the west and north and CA-217 to the east. There are no designated State Scenic Highways, County Scenic Highways, National Scenic Byways, Historic Parkways, or eligible State Scenic Highways near or within view of the proposed Project site. The nearest scenic highway is U.S. Highway 101, north of the City of Goleta, more than 5 miles away. The nearest eligible, but not designated, highway is U.S. Highway 101, more than a mile due north of the proposed Project. The proposed Project site includes pavement, lawn areas, and buildings, and no rock outcroppings, trees, historic buildings, or other physical features that would constitute important scenic resources. Therefore, the proposed Project would not result in impacts to scenic resources located within a designated scenic highway.

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

Impact: Less Than Significant Impact

The proposed Project would not substantially degrade the existing visual character or the visual quality of the Project site and its surroundings. The Project site is within the existing GSD facility. The proposed Project includes facilities that are similar in height and scale to those currently on the existing site. The proposed Project components are not expected to be visible from Goleta Beach Park, located approximately 0.3 miles to the south, since the view is blocked by other WRRF existing components and CA-217. Therefore, the proposed Project is not expected to substantially alter the existing visual character of the site or its surroundings.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Impact: Less Than Significant Impact

The proposed Project would not adversely affect day or nighttime views in the area through the addition of new sources of light or glare. The closest residential development to the GSD property consists of residences located 500 feet to the east of the facility. Potential new sources of light as part of the proposed Project would be exterior lights and security lighting, which would create a minimal amount of light or glare above the existing conditions and be located far from any receptor that could be sensitive to additional light.

Mitigation Measures:

No mitigation is required.

II. Agriculture and Forestry Resources

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. Agriculture and Forestry Resources. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

Existing Conditions:

The Project site does not contain any agricultural or forestry resources.

Environmental Determination:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Impact: No Impact

The proposed Project would not convert farmland to non-agricultural uses. The Project site is in a coastal area surrounded by the SBA, undeveloped coastal habitat, residences, and businesses, and is currently developed with asphalt, concrete walkways, concrete equipment, and office and maintenance buildings. The Project site was not mapped or designated as farmland by the Farmland Mapping and Monitoring Program (California Department of Conservation 2018). The Santa Barbara County Important Farmland Map 2018 designated the Project site as urban and built-up land (California Department of Conservation 2018). Therefore, no impact to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Impact: No Impact

The proposed Project would not conflict with agricultural zoning or a Williamson Act contract. The Project site is in mixed undeveloped coastal habitat area with scattered development, and the SBA and is presently zoned Public Utility (Santa Barbara County Planning & Development 2018). Further, the County of Santa Barbara Williamson Act Land Map 2015 does not designate the area as an Agricultural Preserve (Agricultural Preserve of Santa Barbara County, 2015).

c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

Impact: No Impact

The proposed Project is not located within forest land, timberland, or timberland-zoned Timberland Production. As a result, the proposed Project would not conflict with, or cause any alteration to, existing zoning for forest land, timberland, or timberland-zoned Timberland Production. This is apparent in "California's Forest Resources: Forest Inventory and Analysis, 2001–2010," where the site and the surrounding area are not forested or a forest plot.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

Impact: No Impact

The proposed Project is not within forest land, will not result in the loss of forest land, and will not convert forest land to non-forest use. "California's Forest Resources: Forest

Inventory and Analysis, 2001–2010" shows that the site and surrounding area are not forested or a forest plot.

e) ***Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?***

Impact: No Impact

Implementation of the proposed Project would not result in changes to the environment that could convert farmland to non-agricultural uses. The Project site is currently developed with asphalt, concrete walkways, concrete equipment, and office and maintenance buildings. The proposed Project would include improvements within an existing facility that is currently covered with asphalt, concrete, or planted lawn. Therefore, the proposed Project would not result in the conversion of farmland to non-agricultural uses.

Mitigation Measures:

No mitigation is required.

III. Air Quality

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?	☐	☐	☑	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☑	☐

Existing Conditions:

Currently, GSD operates the WRRF that emits criteria pollutants from the combustion of digester gas in boilers or flares and the combustion of diesel in emergency generators. Additionally, there are some health-risk-associated toxic air contaminant (TAC) emissions from wastewater treatment operations. The proposed Project will include new sources of emissions, e.g., the Thermal Dryer, fire pump engine, and Thermal Fluid Heater, but is not anticipated to significantly increase the emissions of air pollutants or TACs from the existing sources at the facility.

Regional Climate

The following discussion is taken from the SBCAPCD's 2010 Clean Air Plan (SBCAPCD 2011).

Santa Barbara County's air quality is influenced by both local topography and meteorological conditions. Surface and upper-level wind flow varies both seasonally and geographically in the County, and inversion conditions common to the area can affect the vertical mixing and dispersion of pollutants. The prevailing wind flow patterns in the County are not necessarily those that cause high ozone values. In fact, high ozone values are often associated with atypical wind flow patterns. Meteorological and topographical influences that are important to air quality in Santa Barbara County are as follows:

- Semi-permanent high pressure that lies off the Pacific Coast leads to limited rainfall (around 16 inches per year), with warm, dry summers and relatively damp winters. Maximum summer temperatures average about 70 degrees Fahrenheit (°F) near the coast and in the high 80s to 90s inland. During winter, average minimum temperatures range from the 40s along the coast to the 30s inland. Additionally, cool, humid, marine air causes frequent fog and low clouds along the coast, generally during the night and morning hours in the late spring and early summer. The fog and low clouds can persist for several days until broken up by a change in the weather pattern.
- In the northern portion of the County (north of the ridgeline of the Santa Ynez Mountains), the sea breeze (from sea to land) is typically northwesterly throughout the year, while the prevailing sea breeze in the southern portion of the County is from the southwest. During summer, these winds are stronger and persist later into the night. At night, the sea breeze weakens and is replaced by light land breezes (from land to sea). The alternation of the land-sea breeze cycle can sometimes produce a “sloshing” effect, where pollutants are swept offshore at night and subsequently carried back onshore during the day. This effect is exacerbated during periods when wind speeds are low.
- The terrain around Point Conception, combined with the change in orientation of the coastline from north-south to east-west, can cause counterclockwise circulation (eddies) to form east of the Point. These eddies fluctuate temporally and spatially, often leading to highly variable winds along the southern coastal strip. Point Conception also marks the change in the prevailing surface winds from northwesterly to southwesterly.
- Santa Ana winds are northeasterly winds that occur primarily during fall and winter, but occasionally in spring. These are warm, dry winds that blow from the high inland desert and descend down the slopes of a mountain range. Wind speeds associated with Santa Ana winds are generally 15 to 20 miles per hour (mph), though they can sometimes reach speeds in excess of 60 mph. During Santa Ana conditions, pollutants emitted in Santa Barbara County, Ventura County, and the South Coast Air Basin (the Los Angeles region) are moved out to sea. These pollutants can then be moved back onshore into Santa Barbara County in what is called a “post-Santa Ana condition.” The effects of the post-Santa Ana condition can be experienced throughout the County. Not all post-Santa Ana conditions, however, lead to high pollutant concentrations in Santa Barbara County.
- Upper-level winds (measured at Vandenberg Air Force Base once each morning and afternoon) are generally from the north or northwest throughout the year, but southerly and easterly winds do occur in winter, especially during the morning. Upper-level winds from the south and east are infrequent during the summer. When they do occur during summer, they are usually associated with periods of high ozone levels. Surface and upper-level winds can move pollutants that originate in other areas into the County.

- Surface temperature inversions (0-500 feet) are most frequent during the winter, and subsidence inversions (1,000-2,000 feet) are most frequent during the summer. Inversions are an increase in temperature with elevation and are directly related to atmospheric stability. Inversions act as a cap to the pollutants that are emitted below or within them, and ozone concentrations are often higher directly below the base of an elevated inversion than they are at the Earth's surface. For this reason, elevated monitoring sites will occasionally record higher ozone concentrations than sites at lower elevations. Generally, the lower the inversion base height and the greater the rate of temperature increase from the base to the top, the more pronounced effect the inversion will have on inhibiting vertical dispersion. The subsidence inversion is very common during the summer along the California coast and is one of the principal causes of air stagnation.
- Poor air quality is usually associated with "air stagnation" (high stability/restricted air movement). Therefore, it is reasonable to expect a higher frequency of pollution events in the southern portion of the county where light winds are frequently observed, as opposed to the northern part of the county, where the prevailing winds are usually strong and persistent.

Regulatory Setting:

Federal and State Clean Air Acts

The Federal Clean Air Act (CAA) was passed in 1963 by the U.S. Congress and has been amended several times. The federal CAA of 1970 forms the basis for the national air pollution control effort. Basic elements of the CAA include provisions for attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) for major air pollutants (Title I), motor vehicle emissions and fuel standards (Title II), hazardous air pollutant standards (Title III), and stratospheric ozone protection (Title VI). The 1970 CAA Amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting NAAQS and the Prevention of Significant Deterioration (PSD) Program, which regulates stationary sources. The amendments identified specific emission reduction goals, required a demonstration of both reasonable further progress and attainment by specified dates, and incorporated more stringent sanctions for failure to attain the NAAQS or to meet interim attainment milestones. The 1990 Amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the U.S. The current NAAQS, along with the SBCAPCD's attainment status for the NAAQS, are listed in Table 3-1. As indicated, the averaging times for the various air quality standards (the duration over which they are measured) range from 1 hour to an annual basis. The standards are read as a concentration, in parts per million (ppm), or as a weighted mass of material per a volume of air, in milligrams or micrograms of pollutant per cubic meter of air (mg/m^3 or $\mu g/m^3$, respectively).

In 1988, the State Legislature passed the California Clean Air Act (CCAA), which established California's air quality goals, planning mechanisms, regulatory strategies, and standards of progress for the first time. The CCAA provides the State with a comprehensive framework for air quality planning regulation. The CCAA requires attainment of California

Ambient Air Quality Standards (CAAQS) by the earliest practicable date. Attainment Plans are required for air basins in violation of the State ozone, carbon monoxide (CO), sulfur dioxide (SO_2), or nitrogen dioxide (NO_2) standards. Preparation of and adherence to Attainment Plans are the responsibility of the local air pollution control districts or air quality management districts. The CAAQS are more stringent than the corresponding NAAQS. The CAAQS, along with the SBCAPCD's attainment status for the CAAQS, are also summarized in Table 3-1, which comes from the SBCAPCD's Webpage "Meeting Air Quality Standards", accessed in April 2025.

Table 3-1: CAAQS, NAAQS, and SBCAPCD Attainment Status

Pollutant	Averaging Time	California Standards		National Standards	
		Pollutant Concentration	Attainment Designation	Pollutant Concentration	Attainment Designation
Ozone	8 hour	0.070 ppm	**NA-T**	0.070 ppm	A/U
	1 hour	0.09 ppm		*Revoked*	—
Nitrogen Dioxide	annual arithmetic mean	0.030 ppm *(56 μg/m³)*	A	0.053 ppm *(100 μg/m³)*	A/U
	1 hour	0.18 ppm *(338 μg/m³)*		0.10 ppm *(188 μg/m³)*	A/U
Sulfur Dioxide	24 hour	0.04 ppm *(105 μg/m³)*	A	*Revoked*	—
	1 hour	0.25 ppm *(655 μg/m³)*		0.075 ppm *(196 μg/m³)*	A/U
Carbon Monoxide	8 hour	9.0 ppm *(10 mg/m³)*	A	9 ppm *(10 mg/m³)*	A/U
	1 hour	20 ppm *(23 mg/m³)*		35 ppm *(40 mg/m³)*	
Respirable Particulate Matter	annual arithmetic mean	*20 μg/m³*	**N**	*Revoked*	—
	24-hour	*50 μg/m³*		*150 μg/m³*	U
Fine Particulate Matter	annual arithmetic mean	*12 μg/m³*	U	*9.0 μg/m³*	A/U
	24-hour	—	—	*35 μg/m³*	A/U
Lead	Rolling 3-month average	—	—	*0.15 μg/m3*	A/U
	30-day average	*1.5 μg/m³*	A	—	—

<table>
<tr><th rowspan="2">Pollutant</th><th rowspan="2">Averaging Time</th><th colspan="2">California Standards</th><th colspan="2">National Standards</th></tr>
<tr><th>Pollutant Concentration</th><th>Attainment Designation</th><th>Pollutant Concentration</th><th>Attainment Designation</th></tr>
<tr><td>Sulfates</td><td>24-hour</td><td>25 µg/m³</td><td>A</td><td colspan="2" rowspan="4">No National Standards</td></tr>
<tr><td>Hydrogen Sulfide</td><td>1 hour</td><td>0.03 ppm
(42 µg/m³)</td><td>A</td></tr>
<tr><td>Vinyl Chloride (chloroethene)</td><td>24 hour</td><td>0.01 ppm
(26 µg/m³)</td><td>—</td></tr>
<tr><td>Visibility Reducing Particles</td><td>8 hour
(1000 to 1800 PST)</td><td>See Note #1</td><td>U</td></tr>
</table>

Legend:

A = Attainment;
NA-T = Nonattainment-Transitional;
N = Nonattainment;
U = Unclassified;
A/U = Attainment/Unclassifiable;
— = No Standard.

mg/m^3 = milligrams per cubic meter;
$\mu g/m^3$ = micrograms per cubic meter;
ppm = parts per million;
ppb = parts per billion;

Note #1: Statewide Visibility Reducing Particles Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70%. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Note #2: Recent EPA federal registers have established that the "Attainment/Unclassifiable" designation is clearer than "Unclassifiable/Attainment", and that re-ordering the terms has no regulatory consequence.

General Air Conformity

Section 176(c)(1) of the CAA requires federal agencies to ensure that their actions conform to applicable implementation plans for achieving and maintaining the NAAQS for criteria pollutants. Specifically, for there to be conformity, a federal action must not contribute to new violations of standards for ambient air quality, increase the frequency or severity of existing violations, or delay timely attainment of standards in the area of concern (e.g., a state or a smaller air quality region). SBCAPCD has adopted the general conformity requirements in Rule 702. Rule 702 mirrors the federal general conformity requirements with the exception of Section 51.860, Mitigation Measures.

Air conformity requirements only apply to activities taking place in a federal nonattainment area and for those pollutants for which the area is in nonattainment. If an area has been in attainment for a standard since the standard was promulgated, the area is not subject to conformity review unless it comes into nonattainment. If an area has been in nonattainment any time after the promulgation of a standard, it is subject to conformity review, even if it comes into attainment at some later time.

Prevention of Significant Deterioration Program

The EPA oversees the PSD Program. The purpose of the PSD Program is to provide for the review of new and modified stationary sources of air pollution. PSD Program requirements apply to all new stationary sources, and all modifications to existing stationary sources, which would emit or may emit any attainment pollutants. The PSD Program applies to major stationary sources with annual emissions exceeding either 100 or 250 tons per year, depending on the source, or that cause, or contribute, to adverse impacts to any federally classified Class I area.

SBCAPCD adopted rules and regulations to address PSD, which include a series of New Source Review rules, to ensure compliance and protection of Class I areas. In summary, Best Available Control Technology (BACT) must be applied to a new stationary source, or modification of an existing source, for any emissions increase of any attainment pollutant which is equal to or greater than any emission level shown in SBCAPCD Rule 803, Prevention of Significant Deterioration. BACT shall be implemented to reduce emissions for each pollutant to the maximum extent through modifications to production processes or available methods, systems, or techniques while taking into account energy demand, costs, and environmental and economic impacts. These may include fuel cleaning or treatment techniques or innovative fuel combustion techniques for control of such pollutants.

Ozone Plan

The most recent air quality plan for the SBCAPCD is the 2022 Ozone Plan (Ozone Plan). Consistency with the Ozone Plan means that direct and indirect emissions associated with the Project are accounted for in the Ozone Plan's emissions growth assumptions and the Project is consistent with policies adopted in the Ozone Plan. The Ozone Plan relies primarily on the land use and population projections provided by the Santa Barbara County Association of Governments (SBCAG) and California Air Resources Board (CARB) on-road emissions forecast as a basis for vehicle emission forecasting. In addition, the County requires a consistency analysis with the Air Quality Supplement of the County's Comprehensive Plan Land Use Element.

As shown in Table 3-1, the County is classified nonattainment-transitional for the state standards for ozone and nonattainment for the state standards for respirable particulate matter (PM_{10}). Ozone air pollution is formed when reactive organic compounds (ROC) (also referred to as reactive organic gases) and nitrogen oxides (NO_x) react in the presence of sunlight, and hence ROC and NO_x are precursors to ozone. Ozone is a regional pollutant; ozone concentrations throughout the County do not always correspond with the location of sources of the ozone precursors ROC and NO_x. The major sources of ozone precursor emissions in the County are motor vehicles, the petroleum industry, and solvent usage (paints, consumer products, and certain industrial processes). The SBCAPCD considers ROC, NO_x, and sulfur oxides (SO_x) to be particulate matter (PM) precursors. Sources of PM_{10} include fuel combustion, mineral quarries, grading, demolition and construction activities, agricultural tilling, road dust, and vehicle exhaust.

SBCAPCD Regulations

This section reviews various SBCAPCD regulations/rules that are applicable to the proposed Project. As noted in Section 2.7, this Project will require a SBCAPCD ATC permit and, once operational, a PTO for the new Thermal Dryer, Thermal Fluid Heater, fire pump engine, pelletizer, and cake handling equipment, including an associated abatement device. An application for an ATC was submitted to the SBCAPCD for the proposed Project on May 8, 2025. It was later determined that a fire pump engine would also be needed, and an additional ATC application for the fire pump engine is being prepared and is expected to be submitted in early 2026. A determination of the rule requirements, including the new source review Best Available Control Technology (BACT) and offset requirements will be made by the SDAPCD during application processing. The expected requirements are discussed below.

- **Rule 302, Visible Emissions**: Rule 302 requires that air contaminants discharged to the atmosphere not be as dark as or darker than No. 1 on the Ringelmann chart. The dryer is enclosed and will not have visible emissions. The heater will be properly maintained, and visible emissions are not expected.
- **Rule 303, Nuisance**: Rule 303 requires that air contaminants discharged from a source not contribute to a nuisance. The dryer is enclosed in a building, which is unlikely to contribute to nuisance. The heater will be properly operated and maintained and is unlikely to cause a nuisance.
- **Rule 305, Particulate Matter – Southern Zone**: Rule 305 limits the concentration of PM to less than the limits shown in Table 305(a) of the rule. This rule is applicable only to the proposed heater which will discharge less than 1,000 dry standard cubic feet per minute (dscfm) and the concentration of PM_{10} in exhaust will be less than 0.2 grains per dry standard cubic feet (gr/dscf). The PM_{10} emissions from the heater are 0.05 gr/dscf, which will be well below this threshold.
- **Rule 309, Specific Contaminants**: Rule 309 has requirements for the discharge of NO_x, combustion contaminants, and SO_x from fuel-burning equipment. This rule is applicable only to the proposed heater. New fuel-burning equipment shall not discharge more than 200 pounds per hour (lb/hr) of SO_x, 140 lb/hr of NO_x, and 10 lb/hr of combustion contaminants derived from fuel. There is an additional combustion contaminants limit for the Southern Zone of 0.1 grains per cubic foot at 12% carbon dioxide (CO_2). Rule 309(F) applies to equipment in the Southern Zone having a maximum heat input rate of more than 1,775 million British thermal units per hour (MMBtu/hr) (gross) and Rule 309(G) limits CO concentrations from equipment in the Southern Zone. These emissions limits are expected to be met.
- **Rule 311, Sulfur Content of Fuels**: Rule 311 regulates the sulfur content of fuels and is applicable to the heater. The PTO currently limits gaseous fuels burned at the WRRF to 239 parts per million by volume, dry (ppmvd) and this limit does not need to be modified for the SHIP.
- **Rule 333, Control of Emissions from Reciprocating Internal Combustion Engines**: Rule 333 regulates emissions from internal combustion engines. This rule does not apply to the fire pump engine, per Rule 333 B.1.d., because the engine is

an emergency standby engine under CCR, Title 17, Section 93115.4(a)(29)(A) and is used for mechanical work during an emergency (pumping water in case of a fire) and is not the source of primary power at the facility. Although the rule does not apply, the engine will be Tier 3 and is expected to meet the emission standards of the rule.

- **Rule 342, Boilers, Steam Generators, and Process Heaters (5 MMBtu/hr and Greater)**: Rule 342 contains emission limits for boilers, steam generators, and process heaters and is applicable to the proposed heater. The rule requires that heaters fueled by natural gas with rated heat input from 5 to 20 MMBtu/hr meet the emission standards of 9 ppmvd @ 3% oxygen for NO_x and 400 ppmvd for CO. The thermal fluid heater is expected to meet these limits.
- **Regulation VIII – New Source Review**
  - BACT: Rule 802(D) requires that the applicant apply BACT if the new or modified sources have a potential to emit that exceeds 25 lbs/day of ROC, NO_x, PM_{10}, or SOx or 500 lbs/day of CO. Per SBCAPCD policy, the emission limits from SBCAPCD rules are used for calculating emissions for determining BACT thresholds and the more stringent nonattainment BACT thresholds for NO_x, SO_x, and ROC would be applicable. The proposed Project may be subject to ROC BACT.
  - Offsets: Table 3 of Rule 802 provides the offset threshold of 25 tons/year for nonattainment pollutants and precursors. The emissions for the proposed Project are expected to be below this threshold and offsets are not expected to be required.
  - Air Quality Impact Analysis: Rule 802(F) requires an air quality impact analysis (AQIA) if the new or modified stationary source has potential emissions of any pollutant or its precursors equal to or greater than the thresholds in the Rule. Rule 802(G) requires pre- or post-construction monitoring if PM_{10} or $PM_{2.5}$ exceed the thresholds for these pollutants or if any other attainment pollutants exceed 240 lb/day. Similarly, Rule 802(H) requires a Visibility, Soils, and Vegetation Analysis if emissions exceed these same thresholds. The Project facility emissions are not expected to exceed any of these thresholds.
- **Rule 204, Applications**: This rule specifies the information that is required to be in a complete ATC application. Section E.6 identifies when an air toxics Health Risk Assessment (HRA) is needed. An HRA for this project was prepared in accordance with the SBCAPCD December 2023 Modeling Guidelines for Health Risk Assessments, also known as Form-15i. The results of the HRA are discussed in the Environmental Discussion section below.

Significance Criteria:

The Air Quality Section of the Santa Barbara County Environmental Thresholds and Guidelines Manual (2021), the SBCAPCD Scope and Content of Air Quality Sections in Environmental Documents (2022), and the SBCAPCD Environmental Review Guidelines (2015) contain air quality significance criteria. Where applicable, quantitative significance criteria established by the local air quality management district or air pollution control district may be relied upon to make significance determinations based on mass emissions of criteria pollutants.

The existing air quality based on the area's status with respect to the CAAQS/NAAQS is a factor in determining if emissions from a project have the potential to cause a significant air quality impact. The current attainment status of Santa Barbara County with respect to the CAAQS and NAAQS is provided in Table 3-1.

The SBCAPCD Scope and Content of Air Quality Sections in Environmental Documents (2022) discusses the significance criteria for projects where the SBCAPCD is a Lead, Responsible, or Concerned Agency. Most of the discussion of thresholds is focused on the long-term operation of permanent stationary sources. The SBCAPCD Board did not adopt quantitative significance thresholds for temporary short-term construction projects; however, they do provide guidance. The SBCAPCD recommends that construction-related NO_x, ROC, PM_{10}, and $PM_{2.5}$ emissions from diesel- and gasoline-powered equipment, paving, and other activities be quantified. No quantitative threshold has been established for short-term, construction-related PM_{10} (which is 50% of total dust). However, since the County violates the state standard for PM_{10}, dust mitigation measures are required as a condition of the County Grading Ordinance. The short-term thresholds for NO_x and ROC emissions from construction equipment have also not been established by the County. Emissions of NO_x from construction equipment in the County are estimated at 1,000 tons per year of NO_x. When compared to the total NO_x emission inventory for the County of approximately 17,000 tons per year, construction emissions comprise approximately 6% of the 1990 Countywide emission inventory for NO_x. The County considers this amount insignificant (County of Santa Barbara Planning and Development Department 2021). However, if the grading and construction emissions are associated with a stationary source for which an SBCAPCD permit is required, then SBCAPCD Rules and Regulations will apply.

For ongoing operations, the SBCAPCD Scope and Content of Air Quality Sections in Environmental Documents (2022) states:

> *A proposed project will not have a significant impact on air quality, either individually or cumulatively, if operation of the project will:*
>
> - *emit (from all project sources, both stationary and mobile) less than the daily trigger for offsets or Air Quality Impact Analysis set in the APCD New Source Review Rule, <u>for any pollutant</u> (i.e., 240 pounds/day for ROC or NOx; and 80 lbs/day for PM_{10}. There is no <u>daily</u> operational threshold for CO; it is an attainment pollutant); and*
> - *emit less than 25 pounds per day of NO_x or ROC from motor vehicle trips only; and*
> - *not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone); and*

- *not exceed the APCD health risk public notification thresholds adopted by the APCD Board* (10 excess cancer cases in a million for cancer risk and a Hazard Index of more than 1.0 for non-cancer risk)*; and*
- *be consistent with the latest adopted federal and state air quality plans for Santa Barbara County.*

Both the SBCAPCD and the County use the same thresholds for motor vehicle-related, long-term emissions (25 pounds per day of ROC or NO_x). The difference lies in the significance threshold for total project emissions because the types of projects considered by the SBCAPCD as the lead agency differ from the land-use projects. The County Board of Supervisors also considers construction equipment emissions to be insignificant (as adopted in the County Environmental Thresholds and Guidelines Manual in April 1994) while the SBCAPCD Board deferred the adoption construction thresholds. However, consistent with SBCAPCD Rule 202.D.16, the recommended threshold for construction emissions is 25 tons per year for each criteria pollutant, excluding CO. This applies individually to ROC, NO_x, SO_x, and PM_{10}, and is not cumulative. Thresholds derived from these guidelines are summarized in Table 3-2.

Table 3-2 SBCAPCD Significance Thresholds for Criteria and Toxic Air Pollutants

Pollutant	Project Construction	Project Operation
ROC	25 tons/year	240 lb/day
		25 lb/day (motor vehicle trips only)
NO_x	25 tons/year	240 lb/day
		25 lb/day (motor vehicle trips only)
PM_{10}	25 tons/year	80 lb/day
SO_x	25 tons/year	–
TACs (including carcinogens and non-carcinogens)	Maximum Cancer Risk ≥10 in one million	
	Chronic & Acute Hazard Index ≥1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to Rule 303	

Methodology:

The construction analysis for the proposed Project was performed using the California Emissions Estimator Model® (CalEEMod), version 2022.1.1.33, the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and greenhouse gas (GHG) emissions associated with construction and operations of land use projects under CEQA. CalEEMod was developed by the California Air Pollution Control Officers Association in collaboration with the SBCAPCD and other California air districts. Default land use data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) were provided by the various California air districts to account for local requirements and conditions. As the official assessment methodology for land use projects in California, CalEEMod is relied upon herein for construction and land use operational (i.e., mobile, energy and water use, etc.) emissions quantification, which forms the basis for the impact analyses.

Construction:

The Project is expected to require up to approximately 1.5 years of planned work activities (i.e., from mobilization to substantial completion). A preliminary construction schedule is shown in Table 2-1. The proposed list of offroad equipment for each construction phase is shown in Table 2-4. CalEEMod defaults were used for the offroad construction equipment load factor and horsepower (hp). CalEEMod default age-weighted fleet average off-road equipment emission factors were applied.

Import/Export volumes and trip counts were provided by Hazen. The CalEEMod default distances of 8.8 miles and 5.3 miles were used for the worker and vendor trips, respectively. The CalEEMod default distance of 20 was used for the hauling trips for the demolition phase. It was assumed that during the Building Construction A phase, concrete trucks and trailer/tractors delivering rebar would be coming to the Project site from local locations and trailer/tractors delivering miscellaneous equipment from pipe to pumps would be coming the Project site from the Port of Long Beach. Because only one hauling entry is allowed per phase in CalEEMod, the mileages for the Building Construction A phase were calculated using an average distance (i.e., 39 miles). The CalEEMod default distance of 20 miles for the hauling trips was also used for local deliveries. Table 3-3 summarizes the construction trip rates and mileages.

Table 3-3: Proposed Project Construction Traffic Summary

Phase No.	Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
1	Demolition	Hauling	6.8	20.0	HHDT
		Worker	12.5	8.8	LDA, LDT1, LDT2
2	Site Preparation	Hauling	[141.0]	20.0	HHDT
		Vendor	[6.0]	5.3	HHDT, MHDT
		Worker	15.0	8.8	LDA, LDT1, LDT2
3	Linear, Drainage, Utilities, & Sub-Grade	Worker	20.0	8.8	LDA, LDT1, LDT2
4	Building Construction A	Hauling	[82.0]	[39.0]	HHDT
		Vendor	[6.0]	5.3	HHDT, MHDT
		Worker	9.0	8.8	LDA, LDT1, LDT2
5	Building Construction B	Vendor	[6.0]	5.3	HHDT, MHDT
		Worker	9.0	8.8	LDA, LDT1, LDT2
6	Building Construction C	Vendor	[6.0]	5.3	HHDT, MHDT
		Worker	9.0	8.8	LDA, LDT1, LDT2
7	Architectural Coating	Worker	7.2	8.8	LDA, LDT1, LDT2
8	Building Construction D	Vendor	[6.0]	5.3	HHDT, MHDT
		Worker	9.0	8.8	LDA, LDT1, LDT2

Key: LDA = Light-Duty Automobile; LDT = Light-Duty Truck; MHDT = Medium-Heavy-Duty Truck; HHDT = Heavy-Heavy-Duty Truck

Notes:

- Trip rates and mileages are CalEEMod default values except those in brackets.

- Hauling trip rates for the demolition phase is CalEEMod default based on tons of materials, which is calculated from the square footage of concrete and asphalt surfaces to be demolished (version 2022.1.1.33). Hauling trip rates for the Site Preparation and Building Construction A phases were provided by Hazen.
- Vendor trip rates for the Site Preparation and Buildings Construction A-D phases were provided by Hazen. Vendor trip rates for the rest of the phases are CalEEMod default values (version 2022.1.1.33).
- Worker trip rates are CalEEMod default values (version 2022.1.1.33).
- All mileages except for hauling during the Building Construction A phase are CalEEMod default values (version 2022.1.1.33). Because only one hauling entry is allowed per phase in CalEEMod, the hauling mileages for the Building Construction A phase was calculated using an average mileage (i.e., 39 miles).

Operation:

The term “project operations” refers to the full range of activities that can or may generate criteria pollutant, GHG, and TAC emissions when the project is functioning in its intended use. CalEEMod estimates emissions from the following sources:

- “Mobile” sources, which include emissions from onroad vehicles required to operate the proposed Project;
- “Area” sources, which include emissions from consumer products, architectural coatings, and landscaping equipment;
- “Energy” sources, which include emissions from building electricity and natural gas usage (non-hearth);
- “Water and Wastewater”, which includes the GHG emissions associated with supplying and treating water and wastewater used and generated by the project land uses;
- “Waste”, which includes the GHG emissions at landfills associated with disposal of solid waste generated for each project land use subtype; and
- “Refrigerants”, which includes the fugitive GHG emissions associated with building air conditioning and refrigeration equipment.

Emissions from the abovementioned sources are collectively referred to as “Land Use” Emissions in this document.

For industrial projects and some commercial projects, equipment operation and manufacturing processes, i.e., permitted stationary sources, can be of greatest concern from an emissions standpoint. The stationary equipment that would contribute to the emissions of criteria pollutants, TACs, and GHGs during the operational phase are described in Section 2.5.

Emissions from combustion for each of these sources were calculated separately. Operational emissions are summarized in Table 3-5. Detailed emission calculations for stationary sources are included Appendix A2.

The following basic assumptions were used in developing the emissions estimates for the operational phase of the proposed Project:

- One additional permanent personnel is planned as part of this Project.
- Sludge hauling would be reduced from one truck a day, 7 days a week, to a maximum of two trucks per week. In order to be conservative, it is assumed that dried pellets would continue to be sent to the same location (i.e., Liberty Composting facility in Lost Hills, CA), which is approximately 184 miles from the GSD WRRF.

The ongoing Project emissions from the proposed equipment were quantified using:

- EPA Compilation of Air Pollutant Emission Factors from Stationary Sources (AP-42) for PM and ROC. All PM was assumed to be $PM_{2.5}$ for the fluid heater;
- SBCAPCD Rule 342 limits for NO_x and CO for the fluid heater;
- SBCAPCD Rule 311 limits for SO_x;
- CARB ATCM requirements for fire pump engines (Tier 3 engine emission standards); and
- Particulate emissions estimated by the dryer manufacturer for the drying and pelletizing process, including abatement.

Environmental Determination:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Impact: Less Than Significant Impact

A project is non-conforming with an air quality plan if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable SBCAPCD rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Zoning changes, specific plans, general plan amendments, and similar land use plan changes that do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled (VMT) are also deemed to comply with the applicable air quality plan. The 2022 Ozone Plan was adopted by the SBCAPCD Board in 2022 and is the most recent applicable air quality plan. Santa Barbara County has been designated as nonattainment for the state ozone standards. The 2022 Ozone Plan is the 3-year update required by the state to show how the SBCAPCD plans to meet the state 1-hour and 8-hour ozone standards.

The 2022 Ozone Plan relies primarily on the land use and population projections provided by the SBCAG and CARB on-road emissions forecast as a basis for vehicle emission forecasting. Implementation of the proposed Project requires no change in zoning for the site; therefore, the proposed Project would not conflict with or propose to change existing land use or applicable land use policies as designated in the City's General Plan. Similarly, the Project does not have any growth inducing features. As such, the Project would not conflict with the applicable air quality plan. Thus, the Project is consistent with the 2022 Ozone Plan and project impacts would be less than significant.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Impact: Less Than Significant Impact

The SBCAPCD CEQA guidance documents indicate that the SBCAPCD does not currently have quantitative thresholds of significance in place for short-term or construction emissions; however, SBCAPCD uses 25 tons per year for ROC, NO_x, SO_x, and PM as a guideline for determining the significance of construction impacts. Because Santa Barbara County is nonattainment for PM_{10}, all projects are expected to implement the listed BMPs for dust control during construction.

Both the SBCAPCD and the County suggest quantifying construction emissions. Based on the preliminary construction schedule, equipment list, and projected truck trips provided, Table 3-4 below shows that ROC and NOx construction emissions are well below the SBCAPCD suggested guideline of 25 tons per year and therefore, impacts are less than significant. Further details on the construction emissions can be found in Appendix A1.1. It should be noted that the construction schedule, equipment list, and daily trips are preliminary and subject to change, however since the ROC, NO_x, SO_x, and PM construction emissions are estimated to be well below the SBCAPCD suggested guideline of 25 tons per year, should any of those parameters change, the emissions are excepted to remain below the threshold and impacts remain less than significant.

Table 3-4: Project Construction Emissions

Criteria Pollutants	Peak Emissions (lb/day)	Peak Emissions (tons/year)	SBCAPCD Guidelines Threshold (tons/year)	Significant?
ROC	21.21	0.25	25	No
NO_x	33.91	2.07	25	No
CO	26.39	1.45	–	–
SO_x	0.11	0.01	25	No
Total PM_{10}	6.98	0.34	25	No
Total $PM_{2.5}$	3.14	0.14	25	No

Sources: CalEEMod version 2022.1.1.33

Notes:

lb/day are winter or summer maxima for planned land use.

Total PM_{10}/$PM_{2.5}$ comprises fugitive dust plus engine exhaust.

SBCAPCD does not specify a separate guideline threshold for $PM_{2.5}$ so it was set equal to the threshold for PM_{10}. However, the CEQA thresholds are based on the offset threshold and Rule 802 indicates that offsets are not required for $PM_{2.5}$.

Operational emissions were also quantified, as shown in Table 3-5. Emissions from the proposed equipment were calculated using emission factors from EPA's Compilation of Air Pollutant Emission Factors from Stationary Sources (AP-42), manufacturer specifications, and SBCAPCD rule limits. Emissions are compared to the Air Quality Impact Analysis (AQIA) and Offset Thresholds in the SBCAPCD New Source Review rules (in particular Rule 802), which are referenced by the SBCAPCD and Santa Barbara County CEQA guidelines and thresholds documents. The emissions as presented are controlled emissions, since the dryer and pelletizer have a PM control device. As shown in Table 3-5, the impacts would be considered less than significant.

Table 3-5: Project Operational Emissions

Criteria Pollutants	Project Emissions (lb/day)	Project Emissions (tons/year)	SBCAPCD Guidelines Threshold (lb/day)	AQIA Threshold (lb/day)	Offset Thresholds (tons/year)	Significant?
ROC	2.59	0.41	240	120	25	No
NO_x	6.27	0.46	240	120	25	No
CO	46.54	7.82	–	500	–	No
SO_x	0.30	0.05	240	120	25	No
Total PM_{10}	5.34	0.87	80	80	25	No
Total $PM_{2.5}$	4.76	0.82	–	55	25	No

Notes:

SBCAPCD thresholds are "emit (from all project sources, both stationary and mobile) less than the daily trigger for offsets or AQIA set in the APCD New Source Review Rule, for any pollutant (i.e., 240 lbs/day for ROC or NOx; and 80 lb/day for PM_{10}. There is no daily operational threshold for CO since it is an attainment pollutant)."

County thresholds are "emit (from all project sources, mobile and stationary), less than the daily trigger for offsets set in the APCD New Source Review Rule, for any pollutant."

Operational emissions include "land use" emissions from CalEEMod (Appendix A1.1) as well as stationary sources emissions calculated in Appendix A2.

Total PM_{10}/$PM_{2.5}$ comprises fugitive dust plus engine exhaust.

SBCAPCD does not specify a separate guideline threshold for $PM_{2.5}$ so it was set equal to the threshold for PM_{10}. However, the CEQA thresholds are based on the offset threshold and Rule 802 indicates that offsets are not required for $PM_{2.5}$.

The proposed Project is expected to result in only one additional permanent employee and will reduce the sludge hauling trips from one truck a day, 7 days a week, to a maximum of two trucks per week. The SBCAPCD and the County of Santa Barbara have significance thresholds of 25 pounds per day of NO_x or ROC from motor vehicle trips. As shown in Table 3-5 above, the Project will not exceed these thresholds, and the impacts are less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Impact: Less Than Significant Impact

The SBCAPCD's and Santa Barbara County's environmental thresholds indicate that a cancer risk of less than 10 in 1 million, and a chronic and acute hazard index of less than 1 would be less than significant impacts. A Health Risk Assessment (HRA) was completed for permitting and indicated that risks will be below these significance thresholds, as shown in Table 3-6. Source parameters, locations of the receptors, and additional assumptions for the HRA can be found in Appendix A3.

Table 3-6: Project Related Health Risks

Health Risk	Receptor Type	Value	Target Organ	SBCAPCD Significant Risk Threshold
Cancer Risk (in 1 million)	Resident	0.6	–	≥ 10
Cancer Risk (in 1 million)	Worker	0.2	–	≥ 10
Chronic Non-Cancer Risk	Resident	0.02	Respiratory System	> 1.0
Chronic Non-Cancer Risk	Worker	0.04	Respiratory System	> 1.0
8-hour Chronic Non-Cancer Risk	Worker	0.003	Blood	> 1.0
Acute Non-Cancer Risk	Point of Maximum Impact (PMI)	0.07	Eye	> 1.0

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

Impact: Less Than Significant Impact

Odor impacts on residential areas and other sensitive receptors warrant the closest scrutiny, but consideration is also given to other land uses where people may congregate, such as recreational facilities, work sites and commercial areas, and the buffer zone.

Under GSD's SBCAPCD PTO 08561-R9 01528, GSD monitors the digester gas H_2S (peak and monthly average), which ensures proper process operation.

There are no expected significant visible, odorous, or other nuisance emissions expected from the proposed Project. Although WRRFs are, in general, sources of odors, the proposed equipment is not expected to produce noticeable odors when functioning properly.

The proposed Project is surrounded by open land and the SBA; therefore, the potential to expose a substantial number of people to objectionable odors is minimized. Although the WRRF has had odor complaints in the past, these events were due to eutrophication of the slough and would not be expected to be caused by the proposed Project. Impacts would be considered less than significant.

Cumulative Impacts:

SBCAPCD's Environmental Review Guidelines (2015) states that "Unless otherwise specified in published/adopted thresholds of significance and guidelines, a project's potential contribution to cumulative impacts is assessed utilizing the same significance criteria as those for project specific impacts." There is no indication that a project like this would have different thresholds of significance, and as a result, it can be assumed that this project does not have potential for significant cumulative impacts.

BMPs:

The following BMPs are required by the SBCAPCD for projects involving earthmoving activities, regardless of the project size or duration. The measures are based on policies adopted in the 1979 Air Quality Attainment Plan for Santa Barbara County. Proper implementation of these measures is assumed to fully mitigate fugitive dust emissions. It should be noted that applicable SBCAPCD and County Planning Department approved BMPs will be implemented as project design features. This is a standard Condition of Approval and pursuant to CEQA, is not considered mitigation.

BMP-1: During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning, as well as after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 mph. Reclaimed water should be used whenever possible. However, reclaimed water should not be used in or around crops for human consumption.

BMP-2: Minimize the amount of disturbed area and reduce on-site vehicle speeds to 15 mph or less.

BMP-3: If import, export, and stockpiling of fill material is involved, soil stockpiled for more than 2 days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.

BMP-4: Gravel pads will be installed at all access points to prevent tracking of mud onto public roads.

BMP-5: After clearing, grading, earthmoving, or excavation is completed, treat the disturbed area by watering or revegetating, or by spreading soil binders, until the area is paved or otherwise developed so that dust generation will not occur.

BMP-6: The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off-site. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to grading/building permit issuance and/or map clearance.

Mitigation Measures:

No mitigation is required.

IV. Biological Resources

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. Biological Resources. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☑	☐

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

Existing Conditions:

The Project site is located in Santa Barbara County, California, within the Goleta basin of the coastal plain and the Goleta Slough watershed. It is situated northwest of where San Jose Creek, San Pedro Creek, Atascadero Creek, and Goleta Slough converge. San Pedro Creek runs adjacent to the eastern boundary of the site in an engineered channel, while Atascadero Creek and San Jose Creek are approximately 500 and 700 feet east of the site, respectively. The surrounding areas include estuarine wetlands to the south and west, and freshwater wetlands to the east. The site is located within the coastal zone and is fully developed with paved areas, buildings, concrete structures, and landscaping. The soils are identified as xerorthents and cut and fill areas [U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2021]. The vegetation is primarily ornamental and comprised of non-native species such as Bermuda grass and perennial rye grass. The site's proximity to the Goleta Slough attracts various bird species, some of which use the solids stabilization basins as low-quality aquatic habitat.

Regulatory Setting:

Vegetation

The County’s Coastal Land Use Plan (2019) and the Eastern Goleta Valley Community Plan (2017) identify native plant communities, such as coastal sage scrub, riparian scrub, coastal bluff scrub, and native oak woodlands, as environmentally sensitive habitat (ESH) areas. The California Department of Fish and Wildlife (CDFW) released the Natural Communities List and the California Sensitive Natural Communities (CSNC) list in September 2010 and January 2018, respectively. The CSNC list includes vegetation alliances, associations, and special stands, with state and global rarity ranks for alliances and some associations. Those with ranks 1-3 are considered sensitive. However, CDFW does not provide state ranks for every association or alliance in California (CDFW 2021a).

Special-Status Plant Species

Special-status plant species, for the purposes of this analysis, include those that:

- Are designated as rare, threatened, or endangered by the CDFW or the U.S. Fish and Wildlife Service (USFWS) and are protected under the California Endangered Species Act or the federal Endangered Species Act, or meet the CEQA definition for endangered, rare, or threatened;
- Are candidate species being considered or proposed for listing under these acts;

- Are of concern to resource/regulatory agencies or local jurisdictions, including plants on the CDFW Special Plants List (CDFW 2021b) and those with a California Rare Plant Ranking (CRPR) of 1 or 2 in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2021); and/or
- Are plants in the CNPS Inventory, classified as:
  - CRPR 1A: Presumed extinct in California;
  - CRPR 1B: Rare, threatened, or endangered in California and elsewhere; or
  - CRPR 2: Rare, threatened, or endangered in California but more common elsewhere.

Species with CRPR 3 or 4 generally do not qualify for protection, but they may be considered special-status if they meet certain criteria, such as being locally rare or having unique characteristics. The Rare Plants of Santa Barbara County (Wilken 2018) lists native vascular plant taxa with limited distribution in Santa Barbara County, including those known from one to five occurrences, with separate occurrences defined as locations more than 1 kilometer apart.

Special-Status Wildlife Species

Special-status wildlife species, for the purposes of this analysis, include those that:

- Are designated as rare, threatened, or endangered by the CDFW or the USFWS and are protected under the California Endangered Species Act or the federal Endangered Species Act, or meet the CEQA definition for endangered, rare, or threatened;
- Are candidate species being considered or proposed for listing under these acts;
- Are fully protected by specific sections of the California Fish and Game Code (Sections 3511, 4700, 5050, or 5515); and/or
- Are of concern to resource/regulatory agencies or local jurisdictions, including State Species of Special Concern (SSC) or those on the CDFW Watch List.

Findings related to special-status plants and wildlife were cross-referenced with habitat conditions, elevations, and soil types to assess the potential for their occurrence.

Aquatic Resources

<u>U.S. Army Corps of Engineers</u>

The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredge or fill material into wetlands and other waters of the United States under Section 404 of the Clean Water Act (CWA). Since the Clean Water Rule (CWR) took effect in California in August 2018, aquatic resources are evaluated based on the CWR definition of waters of the United States. This includes traditional navigable waters, interstate waters, territorial seas, impoundments of jurisdictional waters, covered tributaries, and covered adjacent waters, all of which are jurisdictional by rule. Other aquatic features are analyzed case-by-case through a significant nexus analysis. The indicators for identifying potential wetlands and other waters of the United States remain unchanged with the CWR implementation.

Authorization from USACE is required before discharging dredge or fill material into these waters.

Regional Water Quality Control Board

The State of California shares jurisdiction with the federal government over Section 401 of the CWA, which concerns Water Quality Certification for jurisdictional wetlands and other waters of the United States. Each Regional Water Quality Control Board (RWQCB) regulates their respective region at the state level, while the USACE regulates at the federal level. For isolated waters and wetlands not under federal jurisdiction, the State exerts independent authority through the Porter-Cologne Act. This Act allows the RWQCB to regulate any actions involving the discharge of waste that could affect the waters of the State, defined as any surface or groundwater within California's boundaries.

The Porter-Cologne Act mandates that each RWQCB create water quality control plans for their regions. The Water Quality Control Plan for the Central Coastal Basin outlines water uses, necessary water quality standards, implementation plans, and monitoring programs (RWQCB 2019).

The State Water Resources Control Board (SWRCB) has established Procedures for Discharges of Dredged or Fill Material to Waters of the State, effective January 2, 2020, which provide uniform standards and definitions for regulating and reviewing discharge applications to wetlands across the State's nine regional boards. Applications submitted before this date are not subject to the new procedures. Activities potentially affecting water quality in state waters require RWQCB authorization before proceeding.

California Department of Fish and Wildlife

Under California Fish and Game Code Sections 1600–1616, the CDFW regulates activities that substantially divert or obstruct natural water flow or alter the bed, channel, or bank of any river, stream, or lake. CDFW's jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes with definable beds and banks and existing fish or wildlife resources. This jurisdiction extends to the upland edge of riparian habitat, defined by vegetation supported by hydrologic conditions within a waterway. A watercourse does not need to show an ordinary high water mark to fall under CDFW jurisdiction. CDFW does not cover ocean or shoreline resources. CDFW may also regulate "one-parameter" wetlands, which display positive indicators for one of the three wetland indicators (hydrophytic vegetation, hydric soils, or wetland hydrology) based on a case-specific analysis. Activities affecting jurisdictional lake or streambed resources require CDFW authorization before proceeding.

Local Coastal Plan

The County of Santa Barbara (2019) defines wetlands within the coastal zone as areas that may be periodically or permanently covered with shallow water. This includes saltwater marshes, freshwater marshes, brackish water marshes, swamps, mudflats, and fens. This definition, adopted from the California Coastal Act (California PRC Section 30121), broadly identifies areas that may be classified as wetlands and thus subject to regulation.

Methodology:

Literature Review

Before Langan's field visit for this environmental analysis, the locations of documented special-status plant and wildlife species near the Project area and potential species on-site were identified using several sources. These sources included the California Natural Diversity Database (CDFW 2021c), USFWS Information for Planning and Consultation (IPaC, USFWS 2021), the CNPS (2021), and the updated Rare Plants of Santa Barbara County (Wilken 2018).

Vegetation Mapping

Mapping Nomenclature for on-site vegetation communities follows the most current system, the Manual of California Vegetation, Second Edition (MCV2), and the CSNC. Vegetation communities were mapped according to these sources, with rarity rankings referenced from the Online Edition of the MCV2 (CNPS 2021). If observed vegetation did not match the membership rules of these communities, a new name was assigned based on the dominant species observed, in line with MCV2.

The minimum vegetation mapping units applied were:

- 0.5–1.0 acre for inaccessible areas due to steep terrain;
- Acre for wetland (hydrophytic) vegetation in traditional wetland environments; and
- Acre for sensitive vegetation communities.

Plant Species

Langan’s biologists, knowledgeable about special-status plant species and the general flora of coastal Santa Barbara County, conducted reconnaissance-level plant species surveys. During these surveys, any observed special-status species were mapped using the Environmental Systems Research Institute (ESRI) Collector.

Native and naturalized plant species encountered were identified and recorded. Scientific and common names for plant species with a CRPR follow the CNPS Online Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2021). For species without a CRPR, scientific names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2021), and common names follow the California Natural Community List (CDFW 2021a) or the USDA NRCS Plants Database (USDA 2021). The cumulative list of identified plants is included as Appendix B.

Wildlife Species

During the general biological survey, a reconnaissance-level survey documented observed wildlife species. No focused surveys for special-status wildlife species were conducted. Wildlife species detected by sight, sound, tracks, scat, or other signs were noted. Habitat for special-status species was also recorded. Locations of any observed special-status species were mapped using a Trimble GeoXT handheld GPS unit with sub-meter accuracy.

Aquatic Resources

During the general biological survey, a reconnaissance-level survey for aquatic resources was performed, but no formal aquatic resources delineation (such as a wetland delineation) was conducted.

Site Evaluation:

Langan Senior Biologist David Murray conducted a general biological survey of the proposed Project area, covering the temporary and permanent impact areas and a 200-foot buffer. He documented wildlife and plant species, noted vegetation communities, and performed vegetation mapping and a quantitative assessment of impacts to these communities within the project site, as well as a conducted a reconnaissance-level aquatic resources survey during a secondary site visit.

Vegetation Communities

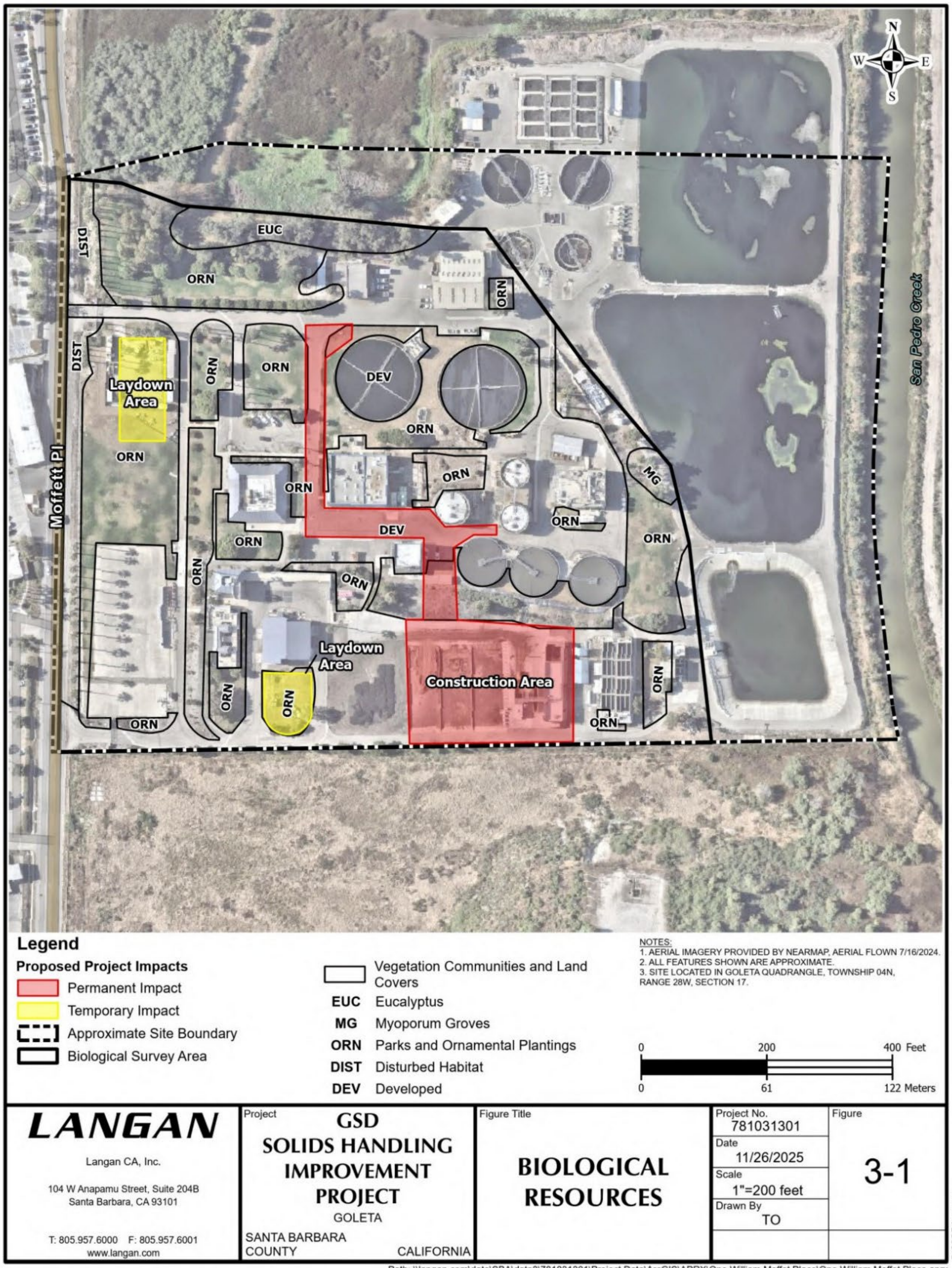
Five vegetation communities and land cover types were recorded within the biological survey area, all of which were non-native (Figure 3-1 and Table 3-7). No sensitive vegetation communities were observed. Eucalyptus and myoporum are non-native and do not have a State rank (SNR). The other three communities and land cover types are not listed in the CSNC or the MCV2. The proposed Project would disturb approximately 0.93 acres of non-native plant communities or developed areas (non-ESH areas), including 0.74 acres of temporary disturbance to developed, disturbed, and ornamental plantings, and 0.19 acres of permanent disturbance to developed and ornamental plantings.

Table 3-7: Summary of Existing Vegetation Communities and Land Cover Types

	General Habitat	Vegetation Community	Global, State Rank	Acreage
Non-Native Communities and Land Cover Types	Non-Native Communities	Eucalyptus	GNR, SNR	0.46
		Myoporum Groves	GNR, SNR	0.1
		Parks and Ornamental Plantings	NA	6.42
	Land Cover Types	Developed	NA	9.96
		Disturbed Habitat	NA	0.42
Non-Native Communities and Land Cover Types				*17.37*
Combined Total				**17.37**

Notes: GNR = globally not rare; NA = not applicable. Not included in CSNC (CDFW 2021a); SNR = state not ranked.

Figure 3-1: Biological Resources



Non-Native Communities

- Eucalyptus (GNR, SNR)

  Eucalyptus is listed in the MCV2 and the CSNC, but it does not have a global or State rank because it is composed of non-native species and is not considered sensitive (Sawyer et al. 2009; CDFW 2021a). Eucalyptus groves have eucalyptus trees (Eucalyptus spp.) as the dominant species in the tree canopy, which is open to continuous and less than 60 meters (197 feet) in height. The understory shrubs and herbaceous layers are sparse to intermittent. Eucalyptus groves occur throughout California as planted trees, groves, windbreaks, and naturalized areas on uplands, bottomlands, and near stream courses, lakes, or levees. Approximately 0.46 acres of this community were identified in the biological survey area.

- Myoporum Groves (GNR, SNR)

  Myoporum groves are listed in the MCV2 and the CSNC, but they do not have a global or State rank because they are composed of non-native species and are not considered sensitive (Sawyer et al. 2009; CDFW 2021a). Myoporum groves consist of myoporum (Myoporum laetum) as the dominant species in the tree canopy, which is open to continuous and less than 18 meters (59 feet) in height. Understory shrubs are infrequent or common, and the herbaceous layer ranges from simple to diverse. These groves occur in coastal canyons, washes, slopes, riparian areas, and roadsides throughout central and southern California, often forming dense single-species stands in coastal areas. Approximately 0.10 acre of this community was identified in the biological survey area.

- Parks and Ornamental Plantings

  The ornamental vegetation community is not described in the CSNC or the MCV2 because it is not a naturally occurring community in California and is not considered sensitive. This community is dominated by landscaping plants and occurs throughout the property. Approximately 6.42 acres of this community were identified in the biological survey area (Figure 3-1).

Land Cover Types

- Developed

  Within the biological survey area, developed areas consist of unvegetated spaces with impervious materials, such as pavement and development. These areas include roads, parking lots, buildings, and concrete structures (Figure 3-1). Approximately 9.96 acres of developed area were identified in the biological survey area.

- Disturbed Habitat

  This land cover type is not described in the Natural Communities List or the MCV2, and includes invasive non-native and other disturbance-tolerant species as dominant. Species within this community, including some natives, are tolerant to disturbances such as grading or vegetation clearing. On-site, species found in disturbed areas include poison hemlock (Conium maculatum), black mustard (Brassica nigra), Hottentot fig (Carpobrotus edulis), and horseweed (Erigeron canadensis). Approximately 0.42 acres of this land cover type were identified in the biological survey area.

Plant Species

A total of 34 plant species were observed and identified, with 5 (15%) considered native and 29 (85%) considered non-native to California. A query of the California Natural Diversity Database (CDFW 2021c) returned 14 special-status plant species documented within the four adjacent quadrangles. Based on Langan's habitat suitability analysis, including elevation and habitats, 10 of these special-status plant species had a low potential to occur within the Project site. These species include:

- Miles' milk-vetch (Astragalus didymocarpus var. milesianus)
- Coulter's saltbush (Atriplex coulteri)
- Davidson's saltscale (Atriplex serenana var. davidsonii)
- Southern tarplant (Centromadia parryi ssp. australis)
- Contra Costa goldfields (Lasthenia conjugens)
- Santa Barbara honeysuckle (Lonicera subspicata var. subspicata)
- Carmel Valley malacothrix (Malacothrix saxatilis var. arachnoidea)
- Nuttall's scrub oak (Quercus dumosa)
- Black-flowered figwort (Scrophularia atrata)
- Estuary seablite (Suaeda esteroa)

No federal, State, or CNPS CRPR plant species were observed.

Trees

There are no native tree species within the temporary or permanent impact areas.

Wildlife Species

A total of 31 wildlife species (30 birds and 1 mammal) were observed or detected based on vocal cues or signs (Appendix B). Various special-status wildlife species occur within 5 miles of the Project site, including:

- Monarch butterfly (Danaus plexippus; Special Animal) overwintering population
- Tidewater goby (Eucyclogobius newberryi; federally endangered, FE)
- Southern steelhead (Oncorhynchus mykiss irideus; FE)
- California red-legged frog (Rana draytonii; federally threatened, FT)
- Northern California legless lizard (Anniella pulchra; SSC)
- Two-striped garter snake (Thamnophis hammondii; SSC)
- White-tailed kite (Elanus leucurus; State fully protected, FP)
- Light-footed Ridgway's rail (Rallus obsoletus levipes; FE, State endangered, SE, FP)

- Western snowy plover (Charadrius nivosus nivosus; FT)
- Tricolored blackbird (Agelaius tricolor; USFWS Bird of Conservation Concern, SSC, State threatened)
- California least tern (Sterna antillarum browni; FE, SE, FP)
- Belding's savannah sparrow (Passerculus sandwichensis beldingi)

Great blue heron (Ardea herodias) and great egret (Ardea alba) nest nearby Goleta Beach and may occur on-site. These species might hunt gophers on the Project site lawn, near the staging area, but have other foraging opportunities in the area. Many avian species, including the great blue heron and great egret, are protected solely for nesting colonies, and none nest at the GSD site. The settling lagoons are poor foraging habitats for these species. California least tern and western snowy plover will not nest at this location. Belding's savannah sparrow may occasionally forage on the property but has no potential to nest. Light-footed Ridgway's rail no longer occurs in the County, and GSD does not support suitable habitat for it.

Monarch butterflies, protected under the County (County of Santa Barbara 2019), do not have suitable roosting habitats in the eucalyptus trees at the northwestern section of the site, as these trees are not configured properly and are not a known roosting area. These trees are non-native.

Habitat is lacking on-site for all other special-status wildlife species known to occur within 5 miles of the site, except for Cooper's hawk (Accipiter cooperii). This bird of prey may nest in the eucalyptus trees along the northwestern boundary of the site, but not within the proposed development areas. No habitat for special-status wildlife species was found, and no special-status wildlife species were detected during the field survey.

Wildlife Movement Corridors

The site is located in a developed area and does not connect important habitat areas used by large or small wildlife species. In addition, chain-link fencing borders the property and provides impediments to wildlife movement. Medium-sized mammal species, such as the striped skunk (*Mephitis mephitis*) or northern raccoon (*Procyon lotor*), may move locally along the coast.

Aquatic Resources

No jurisdictional features were detected during the field survey. Standard construction site BMPs apply to protect storm water resources and the environment.

Significance Criteria:

The County's Environmental Thresholds and Guidelines Manual was used in this analysis (County of Santa Barbara 2021a). Impacts to habitat types may be considered significant if they substantially (1) reduce or eliminate species diversity or abundance; (2) reduce or eliminate the quality of nesting areas; (3) limit reproductive capacity through losses of individuals or habitat; (4) fragment, eliminate, or otherwise disrupt foraging areas and/or access to food sources; (5) limit or fragment range and movement; or (6) interfere with natural processes, such as fire or flooding, upon which the habitat depends.

Environmental Determination:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Impact: Less Than Significant Impact with Mitigation Incorporated

No special-status plant or wildlife species were observed within the biological survey area, so impacts to special-status species from Project disturbances in the temporary and permanent impact areas would be less than significant.

However, 28 species of native birds were detected on-site, including several with the potential to nest there. Nests, eggs, and nestlings of all native bird species are protected by the Migratory Bird Treaty Act and the California Fish and Game Code. Vegetation clearing and grading during the nesting season (January 15th to September 15th) could destroy nests, eggs, and nestlings, potentially violating these regulations. Therefore, impacts to nesting birds from Project disturbances would be potentially significant without mitigation.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Impact: No Impact

No sensitive communities were detected within or immediately adjacent to the impact area; therefore, no impacts to sensitive communities would occur. The Santa Barbara County ESH and Riparian Corridor (RC) overlays identify three mapped ESH features, including San Pedro Creek, within or adjacent to the parcel. These features are more than 200 feet from the impact area, exceeding the 100-foot buffer required per the Coastal Land Use Plan.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact: No Impact

No wetlands or streams were detected within or immediately adjacent to the impact area; therefore, no impacts to wetlands or streams would occur. The National Wetlands Inventory identifies predominantly freshwater emergent wetlands surrounding the project site. These mapped wetlands are more than 100 feet from the impact area, adhering to the minimum buffer strip requirement per the Coastal Zoning Ordinance.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Impact: Less than Significant

The proposed Project is within a developed area and does not connect important habitat areas for large or small terrestrial wildlife species. The chain-link fence surrounding the property impedes the movement of larger and medium-sized wildlife. Medium-sized mammals, like the striped skunk and northern raccoon, may occasionally move locally along the coast. Therefore, impacts from interference with wildlife movement would be less than significant.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact: Less than Significant

Two ornamental trees, which are not native or naturally occurring, would be removed within the impact area. Therefore, the proposed Project does not conflict with any local tree preservation policy and impacts to trees would be less than significant.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impact: No Impact

Since no habitat conservation plans apply to the Project area, no impact would occur.

Cumulative Impacts:

Cumulative development throughout the Goleta Slough could incrementally contribute to the loss of native plant communities and wildlife habitats, potentially impacting biological resources. However, the proposed development is within a developed parcel and is consistent with the County's General Plan/Local Coastal Plan. With required mitigation, the proposed Project's contribution to cumulative biological resource impacts would not be considerable.

Mitigation Measures:

Please refer to Section 3.5.1 for the biological mitigation measures. After implementing Mitigation Measure MM-BIO-1, impacts to nesting birds during the nesting season would be less than significant. After implementing Mitigation Measure MM-BIO-2, impacts to water quality from soil erosion during construction would be less than significant. No mitigation for biological resources is required during project operation.

V. Cultural Resources

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☑	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☑	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☑	☐	☐

Existing Conditions:

The Project site is located at One William Moffett Place, in an unincorporated area of Santa Barbara County southwest of the City of Goleta. The nearest fresh water source to the Project site in prehistoric, historic, and modern times is Old San Pedro Creek, that empties into the Goleta Slough and is connected to the Pacific Ocean south of the Project site. The Project site's current elevations are less than 30 feet above mean sea level (AMSL).

Biological Setting

The Project site is located in Santa Barbara County, California, in the Goleta basin of the coastal plain. The Project area is located within the Goleta Slough watershed, northwest of the confluence of San Jose Creek, San Pedro Creek, Atascadero Creek, and Goleta Slough. San Pedro Creek is located adjacent to the eastern boundary of the Project site within an engineered channel. Atascadero Creek and San Jose Creek are located approximately 400 and 600 feet east of the Project site, respectively. Adjacent to the parcel to the south and west are estuarine wetlands. To the east is freshwater forested and freshwater emergent wetlands. The proposed Project is located in the coastal zone and is entirely within a developed parcel consisting of paved areas, buildings, concrete structures, and landscaping. Soils in this area are xerorthents (orthent soil with a xeric moisture regime) and cut and fill areas (USDA NRCS 2021). Within the property, vegetation is dominated by ornamental plantings and non-native species such as Bermuda grass (*Cynodon dactylon*) and perennial rye grass (*Festuca perennis*). The proximity to the Goleta Slough attracts a wide variety of bird species, with some species utilizing the solids stabilization basins as low-quality aquatic habitat.

Geological Setting

Based on regional geologic maps and on-site borings, the Project site is underlain by fill and terrace deposits and at depth by the Monterey Formation. Fill material consisting of very loose to medium dense silty sand was encountered in borings to a depth of 8 feet below ground surface. Terrace deposits consisting of unconsolidated sandy soils, silty claystone, and silty sandstone were encountered to a depth of 63 feet. Monterey Formation bedrock consisting of clayey siltstone was encountered below the terrace deposits to the maximum depth drilled of 67 feet (Ninyo & Moore 2021).

The proposed Project site is located within the west-central Transverse Ranges Geomorphic Province, which extends from Point Conception in the west to the San Bernardino Mountains in the east. The province also includes the San Gabriel, Santa Monica, and Santa Ynez Mountains and the offshore San Miguel, Santa Rosa, and Santa Cruz Islands [California Geological Survey (CGS) 2002; Morton and Miller 2006]. This geomorphic province structure is east-west trending and is oblique to the normal northwest trend of Coastal California. Regionally, the Transverse Ranges extend offshore west to include the continental shelf and offshore islands of Santa Cruz, Santa Rosa, and San Miguel (CGS 2002).

According to surficial geological mapping by Dartnell et al. (2011) at a 1:24,000 scale, the northeastern portion of the proposed Project site is underlain mapped deposits of Holocene (<11,700 years ago) estuarine deposits (map unit Qe); the central portion of the Proposed Project site is underlain by early Pleistocene (approximately 1.8 to 2.58 million years ago) to possibly late Pliocene (approximately 2.58 to 3.6 million years ago) siltstone unit of an unnamed, marine sedimentary unit (map unit QTst); and southernmost portion of the proposed Project site is the upper siliceous unit of the late Miocene (approximately 5.33 to 11.63 million years ago) marine, Monterey Formation (map unit Tmu).

Soils in the Project site are characterized as Alviso soils, undifferentiated, nearly level and Mocho loamy sand, imperfectly drained, nearly level (USDA 1958). A brief description of each series is provided below:

- Alviso soils, undifferentiated, nearly level consists of 0 to 3 percent slopes, with a series profile typically consisting of 0-11 inches of gray, slightly calcareous, hard, moderately basic, massive clay loam that is highly mottled with rust-brown iron stains; 11-60 inches of stratified, highly mottled, light brownish-gray, moderately basic, slightly calcareous, variously textured materials, mottlings become more dull and light gray with depth.
- Mocho loamy sand, imperfectly drained, nearly level consists of 0 to 2 percent slopes, with a series profile typically consisting of 0-14 inches of brown, slightly hard, moderately basic loamy sand of single-grained structure and; 14-72 inches of brown to pale-brown stratified layers of slightly calcareous, moderately basic, slightly hard, massive loamy sands and sand.

The natural vegetation in the Project vicinity prior to European colonization would have consisted of annual grasses, saltgrass, pickleweed, inkweed, and other salt-tolerant plants. The Project site is currently in use as a waste processing plant.

Cultural Setting

To review a comprehensive cultural setting on the Project site and surrounding area, please refer to Confidential Appendix C.

Regulatory Setting:

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" [California PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)]. If a site is either listed or eligible for listing in the California Register of Historical Resources (CRHR), or if it is included in a local register of historic resources or identified as significant in a historical resources survey [meeting the requirements of California PRC Section 5024.1(q)], it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA [California PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)]. The lead agency is not precluded from determining that a resource is a historical resource, even if it does not fall within this presumption [California PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)].

a) *A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" [CEQA Guidelines Section 15064.5(b)(1); California PRC Section 5020.1(q)]. In turn, the significance of a historical resource is materially impaired when a project:*

b) *Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or*

c) *Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or*

d) *Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.*

When a project significantly affects a unique archeological resource, CEQA imposes special mitigation requirements. Specifically, "[i]f it can be demonstrated that a project will cause damage to a unique archeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state" [California PRC Section 21083.2(b)(1)-(4)]. Examples of that treatment include the following [California PRC Section 21083.2(b)(1)-(4)]:

1) *Planning construction to avoid archeological sites.*

2) *Deeding archeological sites into permanent conservation easements.*

3) *Capping or covering archeological sites with a layer of soil before building on the sites.*
4) *Planning parks, greenspace, or other open space to incorporate archeological sites.*

If these "preservation in place" options are not feasible, mitigation may be accomplished through data recovery [California PRC Section 21083.2(d); CEQA Guidelines Section 15126.4(b)(3)(C)]. PRC Section 21083.2(d) states that "[e]xcavation as mitigation shall be restricted to those parts of the unique archeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report." These same statutes apply to Tribal Cultural Resources (TCRs) under CEQA, including data recovery as a recommended form of mitigation when avoidance is not feasible.

Methodology:

CHRIS Records Search

A search of the California Historical Resources Information System (CHRIS) database housed at the Central Coast Information Center (CCIC) was conducted. The search included any previously recorded and submitted cultural resources and investigations within a 0.5-mile radius of the Project area. The CHRIS search also included a review of the National Register of Historic Places (NRHP), the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. Confidential Appendix C provides the records' search results, maps, and a complete bibliography of all prior cultural resource studies occurring within 0.5 miles of the Project area.

Historical Aerials Review

Aerial images from years 1928, 1938, 1941, 1944, 1956, 1971, 1986, 1992, 2001, 2010, and 2018 (UCSB 2020) were carefully reviewed to better understand the history of land use and previous ground disturbing activities.

Pedestrian Survey

The intensive-level survey methods consisted of a pedestrian survey conducted in parallel transects, spaced no more than 3 meters apart (approximately 10 feet), where feasible. The ground surface was inspected for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, groundstone tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of structures and/or buildings (e.g., standing exterior walls, post holes, foundations), and historical artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances, such as burrows, dirt paths, and landscape beds, were also visually inspected for exposed subsurface materials. No artifacts were collected during the survey.

All fieldwork was documented using field notes and an Apple Generation 7 iPad equipped with ESRI Collector and Avenza PDF Maps software with close-scale georeferenced field maps of the proposed Project site, along with aerial photographs. Location-specific photographs were taken using the iPad's 12-megapixel resolution camera. Accuracy of the mapping software on the iPad ranged between 4 and 5 meters. All field notes, photographs, and records related to the current study are on file on Dudek's protected server. All field practices met the Secretary of Interior's standards and guidelines for a cultural resources inventory.

Methodology:

Previously Recorded Cultural Resources

The CCIC records indicate that one previously recorded cultural resource, CA-SBA-46, has been identified within the Project site and 19 cultural resources have been previously recorded within the 0.5-mile radius of the Project site (see Table 3-8). Of the 19 cultural resources, 12 are prehistoric cultural resources and seven are historic built resources. The 12 prehistoric archaeological sites are briefly described below, followed by a table summarizing all previously recorded cultural resources within 0.5 miles of the Project site.

CA-SBA-43 is a prehistoric site measuring approximately 233 meters (764 feet) north to south and 412 meters (1,351 feet) east to west at an elevation of 80-90 feet AMSL and is located approximately 520 meters (1,700 feet) southeast of the proposed Project area. CA-SBA-43 is documented as consisting of high-density shell midden, high-density and diverse lithic assemblage (including Monterey and Franciscan cherts, crude projectile points, bifaces), mortar and pestle fragments, asphaltum-covered stones, drill, fire affected rock, and potentially a cemetery area. The site was originally recorded formally by David Banks Rogers in his book Prehistoric Man of Santa Barbara Coast (1929) as a collection of three "great rancheria sites" located on the flat top of the extensive mesa east of the Goleta Slough. Larry Wilcoxon and Jon Erlandson recorded the site in 1981 after a pedestrian survey and noted that a "cluster of broken mortars at the NE midden edge may mark a cemetery although no human remains were observed."

CA-SBA-44 is a prehistoric site measuring approximately 206 meters (676 feet) north to south and 251 meters (824 feet) east to west at an elevation of 60 feet AMSL and is located approximately 1,140 meters (3,740 feet) southeast of the proposed Project area. CA-SBA-44 is documented as consisting of high-density shell midden, utilized Monterey chert flakes and blade fragment, bowl frag, mano, fossilized whale bone, and isolated human remains. The site was originally formally recorded by David Banks Rogers in his book Prehistoric Man of Santa Barbara Coast (1929) as a collection of three "great rancheria sites" located on the flat top of the extensive mesa east of the Goleta Slough. A second recording of the site was completed by Joseph Chartkoff, Kerry Chartkoff, and L. Kona; however, the record appears to have been done based on research, since the site record includes a comment "access to site could not be gained." Jon Erlandson and Larry Wilcoxon recorded the site in 1981 after a pedestrian survey and described the site as "a large and high density shell midden containing human remains." Erlandson and Wilcoxon provided comment in the site record that the site had reportedly been "extensively surface-collected for years."

CA-SBA-45 is a prehistoric site measuring approximately 305 meters (1,000 feet) northwest to southeast and 61 meters (200 feet) northeast to southwest at an elevation of 5 feet AMSL and is located approximately 210 meters (690 feet) southeast of the proposed Project area. CA-SBA-45 is documented as consisting of dense shell and bone midden, chipped stone artifacts, including flakes and projectile points, ground stone, including pestles and "rubbingstone", tarring pebbles, asphaltum, burnt bone, bone tools, fishhooks, and human remains. The site was originally formally recorded by David Banks Rogers in his book Prehistoric Man of Santa Barbara Coast (1929), in which he refers to the site as "Twin Mounds" and describes the site as "two small, closely adjacent mounds" located on the floor of the Goleta Slough and displaying "upon their surface the sooty soil, rich in fragments of shell, which indicates former occupancy." Based on extensive excavations conducted in 1927 by Olson and Hill of the University of California as well as his own, Rogers noted that the site showed evidence of a long and continuous village settlement. Subsequent recordings of the site were completed by: Joseph Chartkoff, Kerry Chartkoff, and L. Kona in 1967, with concerns of potential destruction due to channel construction; Jon Erlandson and Joseph Heinzen in 1978; Larry Wilcoxon and Jon Erlandson in 1981, based on presence of charcoal lenses and remains of three individuals eroding from the stream bank; and Larry Wilcoxon and Michael Imwalle in 1991, as the result of conditions observed during a pedestrian survey conducted for a water pipeline project. Portions of the site are thought to have been destroyed by the construction of the Ward Memorial Boulevard (SH 217) in 1964, and consistent disturbance of the site has been documented to occur as a result of natural flooding and channeling of Atascadero Creek.

CA-SBA-46 is a large, rich archaeological site with both historic and prehistoric components. It sits on a large mound, itself a remnant of Mescalitan Island, formerly an island in Goleta Lagoon. Prior to the infilling of the Lagoon during the 19th century, and prior to 20th century grading, Mescalitan Island was approximately 0.35 square kilometers (3,767,369 square feet), 21 meters (69 feet) above the slough, and accessible only by boat (Glassow et al. 1986; Gamble 2008). CA-SBA-46 is approximately 457 meters (1,500 feet) north to south and 305 meters (1,000 feet) east to west at an elevation of 25-70 feet AMSL and overlaps the proposed Project area. The site is considered to be the location of the ethnohistoric village of Helo', which was occupied continuously from the Middle Period through the historic era for approximately 2,000 years (Gamble 2020).

The site was first committed to written record by the Cabrillo expedition of 1542 under the name "Gua", and then again in 1769 by Friar Crespi of the Portolá expedition, who was taken by the sheer number of inhabitants (which he listed as between 600 and 800 individuals). The Portolá expedition is also responsible for naming the island Mescalitan, which is a derivation of the Aztec Mescaltitán, after an island in Mescaltitán Lagoon in Nayarit, Mexico. The village of Helo' is mentioned regularly in mission records from Santa Barbara.

Aside from looters and curiosity hunters, the first known excavation was conducted in 1875 by Yarrow under the auspices of the Smithsonian Institution. Though Rogers did not excavate at this site, it features prominently in his compendium, Prehistoric Man of Santa Barbara Coast (1929). Olson conducted an extensive excavation in the 1920s of three cemeteries and some middens; the collections from these excavations are housed at the Phoebe Hearst Museum in Berkeley, California. From 1932-33, Richard van Valkenburgh (of the Los Angeles County Museum of Natural History) excavated there, and from 1939¬46, Phil Orr (Santa Barbara Museum of Natural History) did as well. Since 1959, students and faculty from UCSB (including James Deetz and Claude Warren) have conducted small-scale excavations on a somewhat regular basis; sadly, the results of these efforts have mostly escaped publication.

The most comprehensive, scientific studies of the historic portion of the site, affiliated with the village Helo', were conducted in the 1970s and 80s when GSD, which runs the sewage treatment plant on the northern end of the site, wanted to expand their facilities into the historic portion of the site. According to Lynn Gamble (who excavated there in 1986 and 1987 while at UCSB), the historic portion of the site was 80% undisturbed prior to expansion of the sanitation facilities in 1987. As part of the proposed expansion, Scientific Resource Surveys, Inc. (SRS) conducted an assessment in 1978, and in 1985, excavated 37 1-meter by 1-meter units. Over the next couple of years, Gamble conducted a detailed excavation of two historic era house floors in this part of the site, providing a rare glimpse of Chumash domestic life prior to and during the establishment of both the Presidio and the Mission (Gamble 1991, 2008, 2020).

In 1981, Wilcoxon and Erlandson noted a "continuing loss to erosion and illicit collection," and estimated that 50% of the original island had been removed for fill and that 50-60% of CA-SBA-46 had been destroyed. Much of the site was destroyed to provide fill for development of Ward Boulevard on its east side. Much of the rest of the entire island was graded into the Slough as fill for the airport.

The site has produced a large and diverse range of features and artifacts, such as fire hearths, caches, points, pendants, beads, flakes, charmstones, and net-weights. Chartkoff, Chartkoff, and Kona (1967) described it as "very rich." Famously, and regrettably, one of the burials from CA-SBA-046 excavated by Orr in 1943 was on display at the Santa Barbara Museum of Natural History, and widely known locally as the "Queen of Mescalitan Island." The site is also famous for an unusually large "bathtub" mortar decorated with beads, an abalone shell dish full of unburned red maids seeds, and a small model of a canoe carved from steatite. The historic portion of the site also produced an abundance of organic implements (like soap-root brushes, redwood planks, and even a full-size redwood canoe) that do not typically preserve in older sediments.

There are eight documented cemeteries across three localities at the site. Many of the early 20th century observers (e.g., Olson and Orr) noted that human remains, and fragments thereof, were often visible on the surface. Though illicit looting was still a problem in the early 1980s, and may still be today, the effects of it on the stability and integrity of the site have not been evaluated recently.

CA-SBA-47 is a prehistoric site measuring approximately 60 meters (197 feet) in diameter at an elevation of 45 feet AMSL and is located approximately 735 meters (2,410 feet) southwest of the proposed Project area. CA-SBA-47 is described as a "large shell midden occupation site on top of bluff overlooking both Goleta Slough and Pacific Ocean," near the east gate to the UCSB campus. The site was originally tested and reported by David Banks Rogers in his book Prehistoric Man of Santa Barbara Coast (1929). By December of 1948, Francis Riddell noted that the "site is all but totally destroyed." In 1967, Chartkoff,

Chartkoff, and Kona noted that the site had been "leveled for campus construction." Since 1948, reports suggest that the cultural deposit is only about 1 foot deep.

CA-SBA-48 is a prehistoric site measuring approximately 100 meters (328 feet) north to south and 350 meters (1,150 feet) west-northwest to east-southeast at an elevation of 40 feet AMSL and is located approximately 845 meters (2,770 feet) southwest of the proposed Project area. CA-SBA-48 is a prehistoric shell midden on the northeastern edge of the UCSB campus, overlooking Goleta Slough. Faunal remains (shell and bone) at this location have been preserved and have recently been subject to absolute dating to reveal "an initial occupation around 820-1210 B.C., corresponding to the late Early Period and, after a hiatus of roughly 2,250 years, a second occupation during the late Late Period, around A.D. 1435¬1660" (CA-SBA-48 Site Record). The site was originally reported by David Banks Rogers in his book Prehistoric Man of Santa Barbara Coast (1929). Tournapulls conducted a salvage excavation concurrent with heavy grading in 1941. This effort produced manos and metates (milling stones), as well as mortars and pestles, and also suggests there may have been two or more cultural components: one associated with the Canalño as described by Rogers, and the other in a lower component containing mineralized, flexed burials perhaps associated with the earlier Oak grove or hunting cultures. Tournapulls further notes that the burials could not be properly studied or preserved as they were typically destroyed by the "Bull Dosers." Fenenga followed up with a small excavation in 1948, noting a hammerstone, a chopper, a small steatite bead, and flaked stone on Monterey and Franciscan cherts. Fenenga further reported that there were "numerous human bones on the surface" in 1948 and noted that CA-SBA-048 was "probably the best remaining site on the campus." Chartkoff, Chartkoff, and Kona re-recorded the site in 1967, and Glassow conducted a condition assessment in 1973. Larry Wilcoxon and Jon Erlandson evaluated the site in 1981 after a pedestrian survey and noted that "large portions [of it had been] damaged or destroyed," presumably during grading. Applied Earthworks conducted the most comprehensive subsurface evaluation as part of the California Nanosystem Institute project (McKim et al. 2007); this study established a faunal record for the site, along with an outline of the timing of the different occupations.

CA-SBA-1158 is a prehistoric site measuring approximately 4,283 square meters (46,101 square feet) at an elevation of 5-10 feet AMSL and is located approximately 570 meters (1,870 feet) south of the proposed Project area. CA-SBA-1158 is documented as consisting of a medium density shell, bone, and lithic scatter and was originally formally recorded in 1980 by Jon Erlandson, who described the site as a "a shell, bone and lithic scatter of unknown dimensions." Erlandson also provided comments regarding the site corresponding to "Pantoja's 1782 map location of Chumash house clusters on the Goleta sandspit." Subsurface testing was conducted in 1986 by Michael Macko to better understand the nature and horizontal and vertical extent of the site, from which Macko made the determination that the cultural material had been redeposited and did not exist within intact, native soils. The site record was not updated by Macko, but a note was added to the site record referencing Macko's 1986 report (SR-00171).

Table 3-8: Previously Recorded Cultural Resources within 0.5 Miles of Project Area

Designation	Resource Description	Recorded By	NRHP Eligibility	Intersects Project Site?	Distance/ Direction from Project Site
CA-SBA-000043 (P-42-000043)	Prehistoric midden site consisting of marine shell midden and high-density lithic scatter.	1929 (David B. Rogers); 1981 (L. Wilcoxon/ J. Erlandson)	Unknown	No	520 meters (1,700 feet) southeast
CA-SBA-000044 (P-42-000044)	Prehistoric site consisting of marine shell midden, low-density lithic scatter, and two isolate human remain fragments.	1929 (David B. Rogers); 1967 (J. Chartkoff, K. Chartkoff, L. Kona); 1981 (Erlandson/ Wilcoxon)	Unknown	No	1,140 meters (3,740 feet) southeast
CA-SBA-000045 (P-42-000045)	Prehistoric midden site consisting of marine shell midden, low-density lithic scatter, and faunal bones.	1927 (David B. Rogers); 1967 (J & K Chartkoff/L. Kona); 1978 (Erlandson, Heinzen); 1981 (L. Wincoxon, J. Erlandson); 1991 (L. Wilcoxon, Mike Imwalle)	Unknown	No	210 meters (690 feet) southeast
CA-SBA-000046 (P-42-000046)	Prehistoric site location of Mescalitan Island, consisting of marine shell midden, high-density lithic scatter, and various burials, including the "Queen of Mescalitan."	1928 (David B. Rogers); 1962 (Klug); 1967 (J & K Chartkoff, L. Kona); 1981 (Erlandson/ Wilcoxon)	Unknown	Yes	within

Designation	Resource Description	Recorded By	NRHP Eligibility	Intersects Project Site?	Distance/ Direction from Project Site
CA-SBA-000047 (P-42-000047)	Prehistoric site consisting of marine shell midden.	1929 (David B. Rogers); 1948 (FA Riddell); 1967 (L. Kona/J. & K. Chartkoff)	Unknown	No	735 meters (2,410 feet) southwest
CA_SBA-000048 (P-42-000048)	Prehistoric site including marine shell midden, high-density lithic scatter, faunal bones, and various fragments of human remains.	1929 (David B. Rogers); 1948 (F. Fenenga); 1967 (J & K Chartkoff/ L. Kona); 1981 (Erlandson/ Wilcoxon); 2007 (Lebow, C. Applied EarthWorks, Inc.)	Unknown	No	845 meters (2,770 feet) southwest
CA-SBA-001158 (P-42-001158)	Prehistoric site consisting of marine shell midden, low-density lithic scatter, and small faunal bone fragments.	1980 (Jon Erlandson)	Unknown	No	570 meters (1,870 feet) south
CA-SBA-001695 (P-42-001695)	Prehistoric site consisting of marine shell midden.	1981 (Erlandson/ Wilcoxon)	Unknown	No	747 meters (2,450 feet) south
CA-SBA-001696 (P-42-001696)	Prehistoric site including marine shell midden, low-density lithic scatter, and faunal bone.	1981 (Erlandson/ Wilcoxon)	Unknown	No	1,085 meters (3,560 feet) southeast
CA-SBA-002579 (P-42-002579)	Prehistoric site consisting of low-density lithic scatter and marine shell midden with small amounts of faunal bone.	1993 (Roy Dugger, SAIC)	Unknown	No	570 meters (1,870 feet) north

Designation	Resource Description	Recorded By	NRHP Eligibility	Intersects Project Site?	Distance/ Direction from Project Site
CA-SBA-4010 (P-42-004010)	Prehistoric site including marine shell midden and a few lithic isolates.	2011 (Phil Fulton, Terri Fulton, LSA Associates, Inc.)	Unknown	No	378 meters (1,240 feet) southeast
(P-42-038785)	Prehistoric isolate quartzite core.	2006 (M. Armstrong, URS)	Unknown	No	908 meters (2,980 feet) northeast
(P-42-041030)	Historic building served as an airplane hangar during World War II, dating to 1942-1946.	1994 (Mitch Stone and Judith Triem, San Buenaventura Research Associates); 2014 (Morlet, A. Applied EarthWorks, Inc.)	Ineligible	No	152 meters (500 feet) west
(P-42-041041)	Historic building serving as storage during World War II, dating to 1944.	1994 (Mitch Stone and Judith Triem, San Buenaventura Research Associates)	Ineligible	No	152 meters (500 feet) west
(P-42-041042)	Historic building serving as storage during World War II, dating to 1944.	1994 (Mitch Stone and Judith Triem, San Buenventura Research Associates)	Ineligible	No	152 meters (500 feet) west
(P-42-041043)	Historic building serving as a firehouse and armory during World War II, dating to 1944.	1994 (Mitch Stone and Judith Triem, San Buenaventura Research Associates)	Ineligible	No	183 meters (600 feet) northwest
(P-42-041044)	Historic airplane hangar dated to approximately 1960.	1994 (Mitch Stone and Judith Triem, San Buenaventura Research Associates)	Ineligible	No	137 meters (450 feet) west
(P-42-041057)	Historic building dated to approximately 1970.	1994 (Mitch Stone and Judith Triem)	Ineligible	No	670 meters (2,200 feet) north

Designation	Resource Description	Recorded By	NRHP Eligibility	Intersects Project Site?	Distance/ Direction from Project Site
(P-42-041093)	Historic motel dating to approximately 1965.	1994 (Mitch Stone and Judith Triem, San Buenaventura Research Associates)	Ineligible	No	580 meters (1,900 feet) south

Previous Cultural Resources Studies

Results of the CHRIS search indicate that 94 previously conducted studies were identified within the 0.5-mile records search radius between 1979 and 2017. Of these studies, 13 overlap the current Project area: SR-00153, SR-00183, SR-00194, SR-00218, SR-00779, SR-00929, SR-01068, SR-01070, SR-01435, SR-01600, SR-01601, SR-04892 and SR-04911 (see Table 3-9). The previous cultural resource studies addressing the proposed Project site area that were available and considered relevant are briefly explained below, and all previous cultural resource studies within the 0.5-mile radius are summarized in Table 3-90.

SR-00183 Final Supplemental Environmental Impact Report (SEIR) for the Goleta Sanitary District Wastewater Treatment Plant Upgrade (Planning Land Use Services 1986) documents a supplemental effort for an EIR overlapping all of the proposed Project site. The purpose of the SEIR was to determine any potentially significant effects upgrades to the wastewater treatment facility would have on the environment, in accordance with CEQA. The archaeological component of the SEIR included a review of previous studies covering the project area. The SEIR found that the project would have significant impacts to cultural resource CA-SBA-46. Recommended Mitigation Measures included avoiding impacts whenever possible, controlled use of a backhoe, and monitoring.

SR-00929 Archaeological investigations at Helo’ on Mescalitan Island (Gamble 1990) documents excavations that took place throughout the current proposed Project site. The purpose of the investigations was to mitigate the impacts of the proposed expansion of the wastewater facility on prehistoric site CA-SBA-46. The investigation included the excavation of 35 units. The excavation revealed high cultural deposits, including two house floors, suggesting CA-SBA-46 was a village site. One of the more significant results of the archaeological investigation was the conclusion that site CA-SBA-46 is the Chumash village Helo’.

SR-01068 Cultural Resources Investigation of Proposed Modifications to Wastewater Facility and Associated Pipeline for Distribution of Reclaimed Water (Cultural Resources Management Services 1990) documents the results of a Phase I archaeological investigation overlapping a portion of the current proposed Project site. The investigation included a records search, a literature review, and an intensive field survey. The purpose of the investigation was to determine if proposed modifications to the wastewater facility and associated distribution pipeline would impact cultural resources. The records search showed that GSD’s wastewater facility resided over previously recorded archaeological site CA-SBA-46. The field survey within the wastewater facility identified several prehistoric chert flakes. The investigation concluded the proposed Project area, which overlaps the current proposed Project site, had been highly disturbed, and subsurface test excavations were recommended to determine if a significant cultural deposit remained within the proposed Project site. Archaeological and Native American monitoring was also recommended for all ground disturbing activities.

SR-01435 A Limited Subsurface Testing Program at the site of a Proposed Vehicle Garage at the Goleta Sanitation District's Wastewater Treatment Plant, Goleta, California (Wilcoxon 1991) documents subsurface testing that took place within the northern edge of the proposed Project site. The subsurface testing included eight backhoe trenches excavated to depths between 1.58 and 3.05 meters (5.18 and 10 feet). The purpose of the testing was to determine the extent of prerecorded archaeological site CA-SBA-46 within the proposed Project site. The subsurface testing resulted in an intact cultural deposit, associated with CA-SBA-46, within every trench, predominantly within native topsoil that had been previously capped with fill. Wilcoxon recommended that, prior to construction activities, there be a recovery of a 3% sample of intact cultural deposits, and all ground disturbing construction activities be monitored by an archaeologist and Native American representative.

SR-01600 Limited Subsurface Testing at Goleta Sanitations District's Wastewater Treatment Facility (Wilcoxon 1991) documents subsurface testing that took place within the current proposed Project site. The subsurface testing included six backhoe trenches excavated to depths between 1.3 and 2.9 meters (4.27 and 9.51 feet). The purpose of the testing was to determine the extent of prerecorded archaeological site CA-SBA-46 within the then proposed Project site. The results of the subsurface testing showed that the native topsoil where cultural remains were located had been significantly cut and disturbed by past grading. It was determined unlikely that undisturbed high-density deposits existed within the proposed areas of construction. Archaeological monitoring during construction activities was recommended as a form of mitigation.

SR-01601 Surface Reconnaissance Goleta Sanitation District Wastewater Treatment Plant (Wilcoxon 1991) documents the results of a pedestrian survey at the GSD wastewater facility, overlapping a portion of the current proposed Project site. The purpose of the survey was to determine if proposed paving and grading would impact in situ cultural deposits associated with prerecorded archaeological site CA-SBA-46. During the field survey, shell midden deposits were observed at varying densities within the proposed Project area. It was recommended to avoid the area east of the existing secondary sedimentation tanks and southwest of a 10-foot contour. The report states that any disturbance within this area would require further mitigation in accordance with the County of Santa Barbara guidelines and CEQA.

SR-04892 Extended Phase 1 Archaeological Investigation, Goleta Sanitary District Wastewater Treatment Plant Upgrading Project (Stone and Victorino 2009) documents the results of an extended Phase I archaeological investigation that overlapped center portions of the proposed Project site. The investigation included a records search, a literature review, and subsurface testing consisting of 34 geoprobes. The purpose of the investigation was to determine the integrity of any subsurface cultural materials, and to determine the horizontal and vertical extent of cultural materials associated with prerecorded archaeological site CA-SBA-46, within the proposed improvement areas. The geoprobes resulted in identifying varying densities of cultural material. The area west of the existing biofilter contained little to no cultural materials. The area east and north of the existing biofilter contained higher densities of cultural material, extending up to 6 feet deep. The study resulted in recommendations that proposed disturbances within areas of high densities of cultural material be redesigned or relocated to areas with little to no cultural material present. A pre-construction workshop conducted by an archaeologist and local Native American representative and archaeological and Native American monitoring during all ground disturbing activities were also recommended.

SR-04911 Letter Report for Archaeological Monitoring, Goleta Sanitary District (Victorino and Stone 2009) documents the results of archaeological monitoring within the center of the proposed Project site. The monitoring was required to fulfill conditions of approval for the proposed GSD Wastewater Treatment Plant Upgrading Project. Fragmented and weathered marine shell was observed in low densities during the archaeological monitoring. The cultural materials were observed in areas where previous disturbance had taken place and were not considered potentially significant. A map of previous disturbances and investigations of GSD can be found in Figure 3-2.

Table 3-9: Previously Conducted Cultural Resources Studies Within 0.5 Miles of the Project Area

Year	Author	CCIC ID	Report Title	Addresses Project Site
Not available	Desautels, R. and Leach, M.	SR-00065	No title listed within CHRIS.	No
1979	Craig, S.	SR-00121	Cultural Resource Survey of the Proposed Minicar Corp. Development in Goleta, California (28 DP 35 log #2652).	No
1982	Craig, S.	SR-00130	Results of a cultural resource assessment of two potential City of Santa Barbara sludge composting facilities.	No
1983	Craig, S.	SR-00132	Cultural Resources Element Santa Barbara Municipal Airport Expansion.	No
1985	Erlandson, J.	SR-00147	RE: Proposed Developments, Goleta Sanitary District, Santa Barbara County, CA.	Yes
1948	Gabel, N. and Fenenga, F.	SR-00150	An Appraisal of the Archaeological Resources of the Goleta Campus of Santa Barbara College, University of California.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
1975	Greenwood, R.	SR-00153	Archaeological Investigation GSD Wastewater Treatment Plant Evaluation.	Yes
1975	Haller, J.	SR-00154	Goleta Slough Management Plan.	No
1986	Macko, M.	SR-00171	Results of Archaeological Testing at CA-SBa-1158, Goleta Beach Park.	No
1985	Moore, J.	SR-00178	Archaeological Monitoring and Preliminary Impacts Assessment, SBa-1158 Goleta Beach Park.	No
1985	Planning Division PS/CM	SR-00182	City of Santa Barbara Memorandum, Airport/Goleta Slough Local Coastal Plan, Phase III Implementation.	No
1986	Planning Land Use Services (PLUS)	SR-00183	Final supplemental environmental impact report for the GSD Wastewater Treatment Plant Upgrade.	Yes
1985	SRS	SR-00192	SBA-46 Test Program, GSD / Brown & Caldwell, Vol. I, II, & III.	Yes
1979	SRS	SR-00193	Archaeological Report Vol. II on Test Excavations on Site SBa-46 (Mescalitan Island) Located in Goleta, California-Data Presentation.	Yes
1985	SRS	SR-00194	Research Design for Test Excavations on Mescalitan Island, Site III, SBA-46.	Yes
1983	Stone, D.	SR-00203	Phase I Archaeological Assessment for Fess Parker Fill Stockpiling Site.	No
1969	UCSB, Office of Architects and Engineers	SR-00213	Ward Memorial Boulevard and the Goleta Slough.	No
1975	UCSB	SR-00214	UCSB Long Range Development Plan EIR: Archaeology Section.	No
1985	Whitney-Desautels, N.	SR-00218	Letter report: Response to peer review comments regarding test program conducted by SRS at SBa-46.	Yes
1982	Wilcoxon, L., Erlandson, J., and Stone, D.	SR-00246	Final Report Intensive Cultural Resources Survey for the Goleta Flood Protection Program Santa Barbara County, California.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
1985	Erlandson, J.	SR-00779	Letter Report: Review of SRS Research Proposal for the Archaeological Evaluation of Proposed GSD Developments on Mescalitan Island (SBA-46, Site III).	Yes
1990	Gamble, L.H.	SR-00929	Archaeological investigations at Helo' on Mescalitan Island.	Yes
1991	Snethkamp, P.	SR-01063	Assessment for need for phase 1 prehistoric and historic archaeological survey of the parcel assocciated with the T-Hangars project at Santa Barbara Municipal Airport.	No
1990	Gibson, R. and Parsons, J.	SR-01065	Results of subsurface testing for the Pine Avenue storage yards project: soils geomorphology and archaeology.	No
1990	Cultural Resources Management Services	SR-01068	Cultural resources investigation of proposed modifications to wastewater facility and associated pipeline for distribution of reclaimed water.	Yes
1991	Wilcoxon, L.	SR-01070	Results of a limited archaeological subsurface testing program at SBA-48 in conjunction with the GSD 's proposed reclaimed water pipeline network on the UCSB campus.	No
1991	Wilcoxon, L.	SR-01181	A Supplemental Phase I Cultural Resource Evaluation for Selected Portions of Goleta Water District's Proposed Reclaimed Water Pipeline Network, Goleta, California.	No
1991	Wilcoxon, L., Haley, B., and Imwalle, M.	SR-01186	Results of a Phase II Archaeological Subsurface Testing Program at SBA-48 in Conjunction with the Goleta Water District's Proposed Reclaimed Water Pipeline Network on the UCSB Campus.	No
1991	Wilcoxon, L.	SR-01187	Letter Report: Proposed Airport Terminal Expansion, Santa Barbara Airport, Santa Barbara, California.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
1991	Wilcoxon, L.	SR-01188	Results of a Subsurface Backhoe Testing Program in Conjunction with Proposed UCSB Marine Science Trailer Utilities Near Archaeological Site SBA-48, on the University of California Campus.	No
1992	Wilcoxon, L. and Imwalle, M.	SR-01231	A Phase I Cultural Resource Evaluation for the Proposed South Patterson Area Grower's Reclaimed Water Pipeline Network Goleta, California.	No
1991	Wilcoxon, L.	SR-01435	A Limited Subsurface Testing Program at the site of a Proposed Vehicle Garage at the GSD's Wastewater Treatment Plant, Goleta, California.	Yes
1993	Wilcoxon, L. and Haley, B.	SR-01450	Final Report, Results of Archaeological Excavations at SBA-46 Undertaken in Conjunction with the Proposed Construction of a Vehicle Garage at the Goleta District's Sanitation Plant, Goleta, California.	No
1992	Stone, D.	SR-01467	Re: Supplemental Phase I Resource Survey Proposed Apron Extension, Hangar Extension, and Access Road Lucus Aviation, Inc. Santa Barbara Airport.	No
1991	Snethkamp, P.	SR-01473	Re: Phase I Cultural Resource Survey Proposed Apron Extension and Access Road Lucas Aviation Santa Barbara Airport, Santa Barbara, California.	No
1992	Snethkamp, P.	SR-01474	Re: Assessment of Potential Effects to Archaeological Resources Proposed Airport Improvements Santa Barbara Municipal Airport AIP Project No. 3-06-0235-06; 3-06-0235-07.	No
1993	Woodman, C. and Dugger, R.	SR-01495	Results of Archaeological Monitoring and Limited Testing, Santa Barbara Municipal Airport Property, City of Santa Barbara, California SAIC Job No. 01-0236-01-1324-000.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
1979	Craig, S.	SR-01528	Re: Heyer Schulte Corporation Parking Lot and Building Extension Goleta, California.	No
1992	Snethkamp, P. and Cagle, C.	SR-01584	Phase 1 Archaeological Assessment Santa Barbara Municipal Airport Property, City of Santa Barbara, CA.	No
1991	Wilcoxon, L.	SR-01600	Limited Subsurface Testing at Goleta Sanitations District's Waste Water Treatment Facility.	Yes
1991	Wilcoxon, L.	SR-01601	Surface Reconnaissance Goleta Sanitation District Waste Water Treatment Plant.	Yes
1993	Wilcoxon, L.	SR-01642	A Phase I Archaeological Resource Evaluation for Santa Barbara County's Proposed Channel Modification and Maintenance Project on Lower Atascadero Creek, Goleta, California.	No
1994	Snethkamp, P.	SR-01671	Letter Re: Revisions to the Airport's Cultural Resources Sensitivity Map, Phase 1 Archaeological Assessment, Santa Barbara Municipal Airport, City of Santa Barbara, California. Mescalitan Island Archaeological Sensitivity Area, South End of Airport.	No
1993	Snethkamp, P.	SR-01674	Cultural Resources Assessment Runway 7-25 Safety Area Improvements Santa Barbara Municipal Airport, Santa Barbara, CA.	No
1994	Snethkamp, P.	SR-01675	Cultural Resources Evaluation Hangar 6 Drainage Improvements Santa Barbara Municipal Airport, Santa Barbara, Ca.	No
1994	Snethkamp, P.	SR-01679	Re: Proposed Improvements within Mescalitan Island Sensitivity Area.	No
1993	Snethkamp, P.	SR-01702	Cultural Resource Evaluation, Taxiway B Reconstruction, Signage Installation, and Runway 151/33R Repavement, Santa Barbara Municipal Airport, Santa Barbara, CA.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
1967	Chartkoff, J.	SR-01746	Archaeological Resources on Fourteen Stream Channels in coastal Santa Barbara County, California.	No
1978	Desautels, R.	SR-01749	Archaeological Surface and Inventory Report on the Goleta County Water District – Wastewater Reclamation Project Located in Santa Barbara County, Ca.	No
1996	Santoro, Loren J.	SR-01948	Archaeological Monitoring for the Goleta Slough Dredging Project – Phase II, Santa Barbara County, CA.	No
1997	Anderson, Karin	SR-02124	Phase 1 Archaeological Survey for Proposed Installation of Cable San Pedro Creek Bike Trail and Goleta Beach County Park, Santa Barbara, County, California.	No
1988	King, Chester, Horne, S., Gamble, L., Wilcoxon, L., and Gibson, R.	SR-02127	Environmental Impact Report/Statement: Shell Hercules Project, Santa Barbara County, Technical Appendix G Cultural Resources.	No
1975	Hannan, Joseph A.	SR-02142	Management and Preservation Plan for the Goleta Slough.	No
1996	SAIC	SR-02187	Phase 1 Archaeological Survey for Elements of the Goleta Old Town Revitalization Plan.	No
1997	Anderson, Karin	SR-02205	Phase 1 Archaeological Survey for Proposed Installation of Cable San Pedro Creek Bike Trail and Goleta Beach County Park, Santa Barbara County, California.	No
2000	Anderson, Karin	SR-02523	Final Archaeological Monitoring Results for Santa Barbara Airport Safety Area Grading Project.	No
1996	Anderson, Karin	SR-02524	Cultural Resources Survey for Santa Barbara Municipal Airport Safety Grading and Helicopter Parking Area Projects.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
2000	Applied Earth Works	SR-02541	Historic Property Survey Report for Goleta Old Town Transportation Improvements, Santa Barbara County, CA.	No
2000	Palmer, K and Lebow, C.	SR-02652	Phase 1 Cultural Resources Survey for University of California, Santa Barbara Campus Sewer Renewal Project, Goleta, CA.	No
2001	Santa Barbara County Flood Control and Water Conservation District	SR-02667	Draft Program Environmental Impact Report: Updated Routine Maintenance Program.	No
2001	Dibble, D.S.	SR-02690	Records and Literature Search and Archaeological Survey for Proposed Old San Jose Creek Restoration Project.	No
2002	Getchell, Barbie and Atwood, John	SR-02802	Cultural Resources Inventory for the Proposed Federal Aviation Administration Airport Surveillance Radar, Model 11 (ASR-11) to serve the Santa Barbara Municipal Airport, Santa Barbara County, California.	No
2001	Hodges, C., and Owen, V.	SR-02893	Extended Phase 1 Cultural Resources Investigations near CA-SBA-48, University of California, Santa Barbara, Santa Barbara County, CA.	No
2003	Gerber, Joyce	SR-03030	Extended Phase 1 Cultural Resources Survey for the Sempra Energy/SGG La Goleta Storage Field Well Site Project.	No
2003	Stone, D. and Victorino, K.	SR-03039	Phase 1 Archaeological Investigation Report Fairview Corporate Center, Goleta, California.	No
2004	Gerber, Joyce L.	SR-03234	Phase 1 Archaeological Survey Santa Barbara Airport Security Upgrade Project Santa Barbara, California.	No
2003	Bass, Byron	SR-03276	Technical Report, Cultural Resources: Verhelle Bridge Replacement Project, Santa Barbara, CA.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
2003	Bass, Byron	SR-03285	Technical Report, Cultural Resources Testing Program: Verhelle Bridge Replacement Project, Santa Barbara, CA.	No
1979	The Regents of the University of California	SR-03502	UCSB LRDP EIR.	No
1990	EIP Associates	SR-03503	Final EIR Vol. 1-Revised Draft (June 1990).	No
2000	Ryan, C.	SR-03566	Historic Property Survey Report for Goleta Old Town Transportation Improvements, Santa Barbara County, California.	No
2006	Ross-Hauer, JoEllen, Maxon, Patrick, and Underbrink, Susan	SR-03631	Results of Archaeological testing at Site CA-SBA-1695, Goleta Beach County Park, Santa Barbara County, California.	No
2007	Haslouer, Leeann G.	SR-04284	Archaeological and Native American Monitoring of the Power Pole Replacement Excavations at the Sempra\SCG La Goleta Storage Field, Goleta, California.	No
2008	Haslouer, Leeann G. and Lebow, Clayton G.	SR-04382	Supplemental Extended Phase 1 Survey Sempra Energy/Southern California Gas La Goleta New Storage Field and Pipeline Goleta, Santa Barbara County, California.	No
2008	Haslouer, Leeann G. and Lebow, Clayton G.	SR-04395	Phase 1 Archaeological Resources Report New Waterline East of Landing Field Santa Barbara Airport, Santa Barbara Airport, Santa Barbara, CA.	No
2008	Haslouer, Leeann G.	SR-04397	Archaeological Monitoring for the Airfield Safety Projects, Santa Barbara, California.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
2008	McKim, Rebecca L., Lebow, Clayton G., Baloian, Mary Clark, and Harro, Douglas R.	SR-04411	Archaeological Investigations at CA-SBA-48 for the California Nanosystems Institute University of California, Santa Barbara.	No
2008	McKim, Rebecca L.	SR-04411	Appendices.	No
2009	Enright, Erin A. and Haslouer, Leeann G.	SR-04437	Phase 1 Archaeological Resources Report, Storm Drains and Headwalls in San Pedro Creek, Santa Barbara Airport, Santa Barbara, California.	No
2010	Janet Wolf	SR-04638	Santa Barbara County Flood Control and Water Conservation District Flood Control Maintenance Activities in the Goleta Slough, Draft Subsequent EIR SCH No. 2000031092.	No
2009	Leftwich, Brent	SR-04704	Historic Property Survey Report for the Ekwill Street and Fowler Road Extensions Project.	No
2008	Stone, David	SR-04721	Phase 1 Archaeological Investigation ATK Space Systems Group Building Addition, 600 Pine Avenue, Goleta, California.	No
2009	Drennan, Trisha	SR-04826	An Archaeological Inventory Survey, San Jose Creek Capacity Improvement Project, in the City of Goleta, Santa Barbara County, California.	No
2009	Haslouer, Leeann G., Snethkamp, Pandora, Lebow, Clayton G., and Munns, Ann M.	SR-04852	Master Archaeological Resources Assessment for the Santa Barbara Municipal Airport, Santa Barbara, California.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
2013	Haslouer, Leeann G. and Munns, Ann M.	SR-04886	Archaeological and Native American Monitoring of Soil Sampling for the La Goleta Natural Gas Storage Facility, Goleta, Santa Barbara County, California.	No
2009	Stone, David and Victorino, Ken	SR-04892	Extended Phase 1 Archaeological Investigation, GSD Wastewater Treatment Plant Upgrading Project.	Yes
2010	David Stone	SR-04905	Archaeological Resources Assessment, Concrete Recycling Facility, 903, 905, 907, & 909 South Kellogg Avenue, City of Goleta, California.	No
2009	Ken Victorino and David Stone	SR-04911	Letter Report for Archaeological Monitoring, Goleta Sanitary District.	Yes
2012	David Stone and Ken Victorino	SR-04949	Extended Phase 1 Archaeological Investigation, Lund Industrial Park Project, Technology Drive, Goleta, California.	No
2009	Conway, Thor	SR-05025	An Archaeological Surface Survey and Updated Records Search for the Goleta Slough Flood Control Dredging Project, Goleta, Santa Barbara County, California.	No
2006	Donaldson, Milford Wayne	SR-05036	Re: Section 106 Consultation for Taxiway Bravo Alignment, Santa Barbara Airport, Santa Barbara, Santa Barbara County, CA.	No
2013	Haslouer, Leeann G. and Munns, Ann M.	SR-05075	Archaeological and Native American Monitoring of Soil Sampling for the Goleta Natural Gas Storage Facility, Goleta, Santa Barbara County, California.	No
2013	Erin A. Enright, Clayton G. Lebow, and Ann M. Munns	SR-05556	Extended Phase 1 Report CA-SBA-1158 (P-42-001158) State Route 217, PM 0.50 to PM 0.72 Goleta Beach County Park Managed Beach Retreat Project Santa Barbara County, California.	No

Year	Author	CCIC ID	Report Title	Addresses Project Site
2017	Eric S. Nocerino and Clayton G. Lebow	SR-05569	Monitoring Report for the Plains Pipeline, L.P. Refugio Incident Response Project, Santa Barbara and Ventura Counties, California.	No
2015	David Stone and Ken Victorino	on file with Dudek	Phase III Mitigation Investigations CA-SBA-46 GSD Wastewater Treatment Plant Upgrades.	Yes

Historical Aerials Review

The 1928 historical aerial shows the proposed Project area as undeveloped and existing on the edge of the unmodified Goleta Slough. The Project area overlaps what was previously the complete Mescalitan Island. On the edge of the island, within the proposed Project site, is a thick row of trees outlining the island's border. In the northern portion of the island, there are two patches of agriculture in the approximate proposed Project site. A cleared path running north-south connects the agriculture to the southern portion of the island.

The 1938 historical aerial also shows the proposed Project area as undeveloped except for a cleared path running east-west to a cleared square within the southwestern half of the proposed Project site. It is possible that the cleared square is a structure; however, the clarity of the photograph prevents confirmation. The current Santa Barbara Airport, located directly to the west of the proposed Project site, is shown as undeveloped in this photograph.

The 1941 historical aerial shows the same path from the 1938 aerial; however, the cleared square evident in the 1938 aerial is covered in vegetation. The slough surrounding the proposed Project site is no longer filled with water. To the west, a large portion of land, including the western half of the island, has been cleared for what will be the Santa Barbara Airport. The surface of the eastern half of the island, within the proposed Project area, appears to be disturbed.

The 1944 historical aerial (see Figure 3-2) shows the channeled San Pedro Creek running north-south on the eastern border of the proposed Project site. Moffett Place and James Fowler Road are shown on the western and northern borders of the proposed Project site. At the time that this photo was taken, construction was taking place in the northern portion of Mescalitan Island, near James Fowler Road, within the proposed Project site. A cleared road running parallel to Moffett Place, slightly to the east, extends down the entire west side of the proposed Project site.

The 1956 historical aerial shows a series of four trapezoidal water basins along San Pedro Creek, as well as various ancillary structures, associated with GSD, within the proposed Project site. A section of trees has been removed from the eastern edge of the island, just west of the water basins. The only portion of the cleared path that remains is the northern portion, connecting the water basins and ancillary structures to Moffett Place. There is another path within the proposed Project site connecting the structures to James Fowler

Road; along this path, tanks and additional ancillary structures exist within the proposed Project site. The surface of the proposed Project area appears to be graded.

The 1965 historical aerial (see Figure 3-2) shows an additional two water basins within the proposed Project site, north of the previous four basins. There are three added storage tanks of various sizes, as well as another ancillary structure, within the proposed Project site. The 1965 historical aerial shows an increase in surface disturbance within the southern portion of the Project site.

The 1971 historical aerial shows an additional two tanks in the proposed Project site. Due to the clarity of the photograph, is it difficult to discern any other significant changes to the proposed Project site.

The 1986 historical aerial depicts an additional ancillary structure within the proposed Project site and continued surface disturbance, possibly grading or disking.

The 1992 historical aerial shows additional ancillary structures within the southern portion of the proposed Project site. A structure in construction is shown within the southwestern corner of the proposed Project area. The previous six water basins have been combined into three. There are two additional tanks north of the central road in the proposed Project site. In line with the new tanks to the west is a new cluster of ancillary structures within the general proposed Project area.

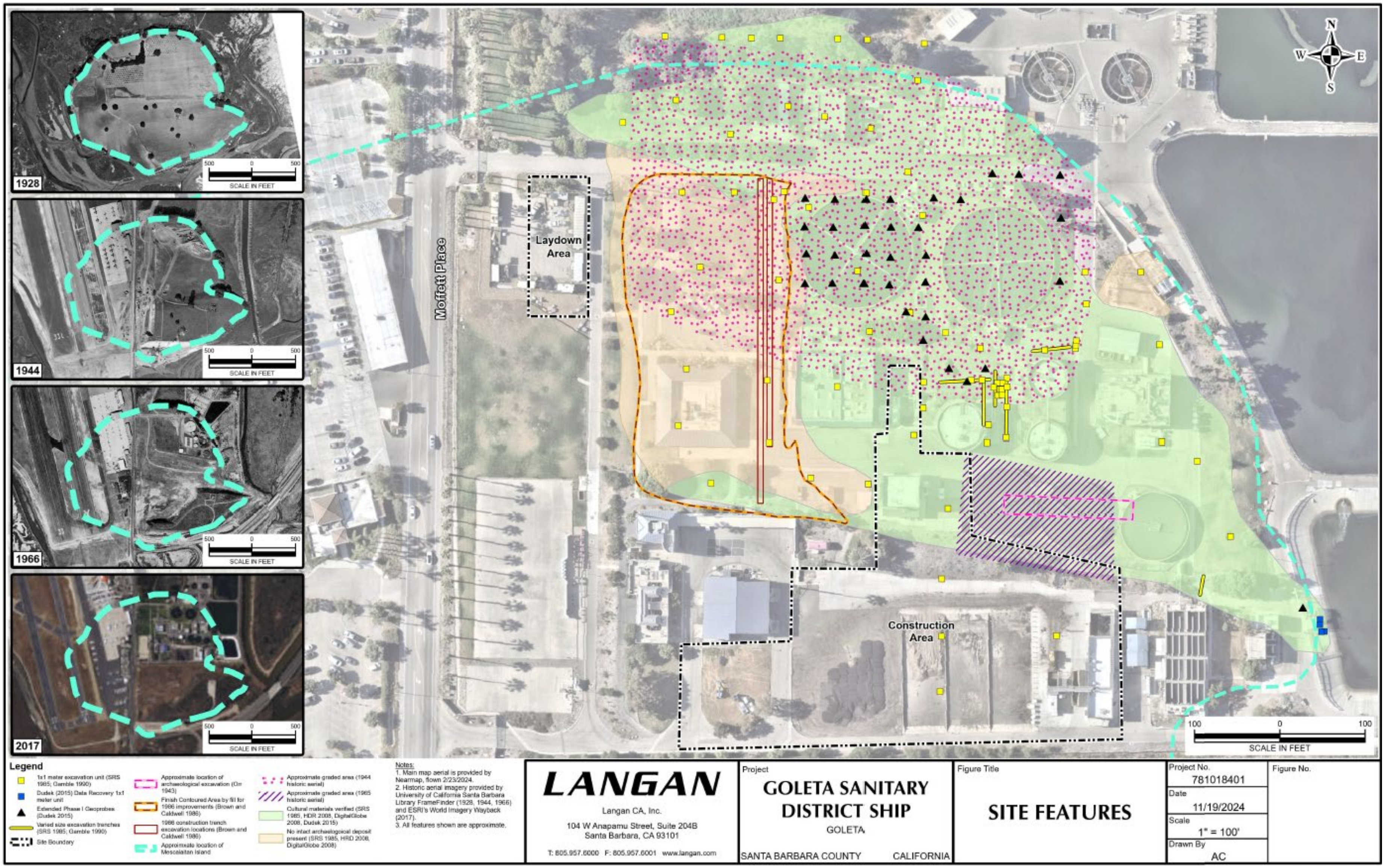
The 2001 historical aerial shows an additional three ancillary structures: two along the southern edge, and one along the central road, within the proposed Project site. There appear to be newly planted trees surrounding most of the ancillary structures, the northernmost water basin, and the southern and eastern borders of the proposed Project site.

The 2010 and 2017 (see Figure 3-2) historical aerials show no significant change to the proposed Project site.

Pedestrian Survey

An intensive archaeological survey of the proposed Project area was completed on August 16, 2024, by Langan’ Cultural Resource Practice Director Heather McDaniel McDevitt, M.A., RPA. All exposed ground surfaces were walked in no less than 3-meter (10-foot) parallel transects. At the time of the survey, the proposed Project area was not yet determined, so a larger area than the current proposed Project area was surveyed. Boot scrapes were employed where needed to expose surface soils. Careful attention was given to barren ground, including at the base of trees, within dirt paths and landscape beds, and subsurface soils exposed by burrowing animals. The exposed soils under vegetation and within landscape beds accounted for approximately 15% of the proposed improvement area and provided very good to excellent ground surface visibility (80-100%). Areas developed with structures and pavement accounted for approximately 85% of the proposed improvement area and provided none to poor ground surface visibility (0-30%). A considerable amount of fragmented and weathered shell was observed in the areas where soils were observable. No other cultural material, such as tools or lithic material, was observed within the proposed Project area.

Figure 3-2: Previous Disturbance and Investigations of Goleta Sanitary District



Environmental Determination:

a) Cause substantial adverse change in the significance of a historical resource pursuant to §15064.5? and

b) Cause substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Impact: Less Than Significant Impact with Mitigation Incorporated

No structures meeting the criteria of a historical resource pursuant to Section 15064.5 are located within or immediately surrounding the proposed Project site. The proposed Project site exists within archaeological site CA-SBA-46, a site with both historic and prehistoric components and the location of the former Barbareño Chumash village Helo'. This site has been studied by archaeologists at length both prior to and after a large portion of the site was used to infill the Goleta slough in preparation for the then Navy airport (now SBA). Despite the disturbance, intact cultural deposits have been identified in the last 80 years. Although not formally listed on either the California Register of Historic Resources or the National Register of Historic Resources, the site meets the criteria of historically or culturally significant pursuant to PRC Section 5024.1(g). Based on the proposed ground disturbing activities, the Project would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5, as the proposed activities would materially alter in an adverse manner those physical characteristics of the historical resource that convey its eligibility for inclusion in the California Register of Historical Resources. Previous archaeological testing and excavation efforts have identified intact deposits within the proposed Project's general area. Archaeological testing and excavations conducted in the past 30 years at CA-SBA-46 include a facility-wide significance evaluation undertaken in 1985 by SRS. The results of the survey identified the integrity and variability of remaining cultural deposits within CA-SBA-46 and categorized the variability into five density levels: Level I – 30,140.0 grams per cubic meter; Level II – 1,242.9 grams per cubic meter; Level III – 229.3 grams per cubic meter; Level IV – 34.1 grams per cubic meter; and Level V – no A horizon present. Generally, the highest densities of shellfish, animal bone, stone tools, waste flake debitage, and stone tools were found in the southeastern corner of the GSD WRRF and extremely low densities in the western portion of the GSD WRRF.

The proposed Project elements would exist within an area that has been verified as having cultural material present within intact native soils and in an area that does not have enough data to determine the potential of intact cultural deposits to exist. During the preliminary design stage of the proposed Project, the locations of proposed pipelines were adjusted to stay aligned with previously disturbed areas. The proposed Project redesign would avoid the potential for disturbing areas of CA-SBA-46 with known high diverse densities of cultural resources identified during the previous significance evaluation (SRS 1985), as well as the previous data recovery mitigation excavations conducted in the 1980s through 1990s. However, there still remains the possibility of encountering concentrations of cultural remains within areas of moderate, low, or no cultural materials, as well as inadvertently encountering isolated artifacts or human remains within previously disturbed soils. In the event that unanticipated archaeological resources are encountered during Project implementation, impacts to these resources could be potentially significant.

The mitigation measures identified in Section 3.5.2 have been created to minimize impacts to cultural resources to less than significant. Implementation of MM-CUL-1 would ensure exploratory excavations and, if necessary, data recovery efforts in areas of high to moderate density and variability possessing data potential, capable of providing information about the prehistoric and historic periods in this area; MM-CUL-2 would establish a program of treatment and mitigation in the case of an inadvertent discovery of cultural resources during ground-disturbing phases, which would provide for the proper identification, evaluation, treatment, and protection of any cultural resources throughout the duration of the proposed Project; MM-CUL-3 would ensure the preparation and implementation of a Worker Environmental Awareness Program (WEAP); MM-CUL-4 would ensure that a qualified archaeologist is retained to monitor all initial ground disturbing activities and to respond to any inadvertent discoveries during Project construction; and MM-CUL-5 would ensure the proper treatment and protection of any inadvertent discovery of cultural resources, including human remains and burial artifacts, and that all construction work occurring within 50 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology, can evaluate the significance of the find. Thus, potentially significant impacts to archaeological resources would be reduced to less than significant levels with MM-CUL-1 through MM-CUL-5 incorporated.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Impact: Less Than Significant Impact with Mitigation Incorporated

No prehistoric or historic burials have been identified within the proposed Project site as a result of the CHRIS records search or pedestrian survey. However, considering the proposed Project is located within the archaeological site CA-SBA-46, the location of the former Barbareño Chumash village Helo', there is potential that an inadvertent discovery of human remains could occur. In the unexpected event that human remains are found, those remains would require proper treatment in accordance with applicable laws. Procedures of conduct following the discovery of human remains on non-federal lands are mandated by California Health and Safety Code Section 7050.5, PRC Section 5097.98, and 14 CCR Section 15064.5(e).

The mitigation measures identified in Section 3.5.2 have been created to minimize impacts to cultural resources to less than significant. Implementation of MM-CUL-2 would establish a program of treatment and protection in the case of an inadvertent discovery of human remains throughout the duration of the proposed Project; MM-CUL-3 would ensure the preparation and implementation of a WEAP to ensure all Project personnel are aware of the appropriate procedures and protocols they must follow in the event human remains are inadvertently discovered; MM-CUL-4 would ensure that a qualified archaeologist is retained to monitor all initial ground disturbing activities and to respond to any inadvertent discoveries during Project construction; and MM-CUL-5 would ensure the proper treatment and protection of any inadvertent discovery of human remains and burial artifacts. Thus, potentially significant impacts to archaeological resources would be reduced to less than significant levels with MM-CUL-1 through MM-CUL-5 incorporated.

Cumulative Impacts:

Cumulative impacts on cultural resources consider whether the impacts of the proposed Project, together with other related projects identified within the vicinity of the Project site, when taken as a whole, substantially diminish the number of historic or archeological resources within the same or similar context or property type. Cumulative projects may require extensive excavation in culturally sensitive areas; thus, they may result in adverse effects to known, or previously unknown and inadvertently discovered, archaeological resources. There is the potential for accidental discovery of other archaeological resources by the proposed Project, as well as by cumulative projects. Because all significant cultural resources are unique and non-renewable, all adverse effects or negative impacts contribute to a dwindling resource base. Through implementation of MM-CUL-1 through MM-CUL-5, the Project-level impact to archeological resources would be reduced to less than significant.

Other individual projects occurring in the vicinity of the Project site would also be subject to the same CEQA requirements as the proposed Project, and any impacts to archaeological resources would be mitigated, as applicable. These determinations would be made on a case-by-case basis, and the effects of cumulative development on historic and archaeological resources would be mitigated to the extent feasible, in accordance with CEQA and other applicable legal requirements. Therefore, impacts on archaeological resources would not be cumulatively considerable with mitigation incorporated (MM-CUL-1 through MM-CUL-5).

The proposed Project was determined to have less than significant direct impact on human remains. MM-CUL-5 is adequate to address the potential for impacts due to the inadvertent discovery of human remains on the proposed Project site. Other individual projects occurring in the vicinity of the Project site would also be subject to the same State requirements to contact appropriate agencies and coordinate with the County Coroner. Therefore, the proposed Project would not result in any cumulatively considerable impacts related to human remains.

Mitigation Measures:

Refer to Section 3.5.2 to review the cultural resources mitigation measures. After implementation of Mitigation Measures MM-CUL-1 through MM-CUL-5, impacts to cultural resources during construction would be less than significant. No mitigation for cultural resources is required during operation.

VI. Energy

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Energy. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☑	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☑	☐

Environmental Determination:

An analysis of the Project's fuel and energy consumption is provided below:

Project Construction Fuel Consumption

The fuel consumption from the mobile sources used for construction was calculated using the CalEEMod outputs. CalEEMod calculates mass emissions of GHGs, including CO_2, from offroad and onroad mobile sources associated with project construction. For construction, CalEEMod aggregates mobile source CO_2 emissions into four broad categories (typical fuel types assumed):

- Offroad equipment [diesel (Tiers 1-4)];
- Hauling [heavy-heavy duty diesel trucks (HHDT)];
- Vendor [medium-heavy and heavy-heavy duty diesel trucks (MHDT, HHDT)]; and
- Worker [light duty gasoline automobiles and trucks (LDA, LDT1, LDT2)].

For each category, diesel and gasoline fuel consumption can be estimated (back-calculated) using 2020 Climate Registry (40 CFR 98 Subpart C) emission factors for those fuels:

- Diesel Fuel Oil No. 2: 10.21 kg CO_2 per gallon [22.51 lbs CO_2 per gallon]; and
- Motor Gasoline: 8.78 kg CO_2 per gallon [19.36 lbs CO_2 per gallon].

Using the CalEEMod annual emissions results (MT CO_2) for each of the four mobile source categories (offroad, hauling, vendor, worker) and the corresponding CO_2 emission factors, Table 3-10 shows estimated fuel consumption during Project construction. As shown in Table 3-10, based on CalEEMod, Project construction would consume approximately 137,750 gallons of liquid fuels.

Table 3-10: Construction Mobile Source Energy Use

Mobile Sources	Types	Fuels	MT CO_2	CO_2 Emission Factor (kg/gal)	Fuel Consumption (gallons)
Off-Road	Tiers 1-4	Diesel	281	10.21	27,540
Hauling	HHDT	Diesel	1,105	10.21	108,230
Vendor	MHDT, HHDT	Diesel	11	10.21	1,120
Worker	LDA, LDT1, LDT2	Gasoline	8	8.78	860
Totals			**1,405**	—	**137,750**

Sources: CalEEMod, TCR 2020, 40 CFR 98 Subpart C

Project Operation Fuel Consumption

Similar to construction, CalEEMod calculates mass emissions of CO_2 from area and mobile sources associated with project operation. For operation, CalEEMod aggregates area and mobile source CO_2 emissions into three broad categories (typical fuel types assumed):

- Utility equipment [gasoline];
- Heavy Mobile [light-heavy, medium-heavy and heavy-heavy duty diesel trucks (LHDT, MHDT, HHDT)]; and
- Light Mobile [light and medium duty gasoline automobiles and trucks (LDA, LDT1, LDT2, MDV)].

For each category, diesel and gasoline fuel consumption can be estimated (back-calculated) using 2020 Climate Registry (40 CFR 98 Subpart C) emission factors for those fuels. Consistent with CalEEMod, operational vehicle fleet mixes comprise approximately 90% gasoline and 10% diesel fuel usage.

Using the CalEEMod annual emissions results (MT CO_2) for the area and mobile source categories and the corresponding CO_2 emission factors, Table 3-11 shows estimated fuel consumption during Project operation. As shown in Table 3-11, based on CalEEMod, project operation would consume approximately 12,790 gallons of liquid fuels annually.

Table 3-11: Operational Area and Mobile Source Energy Use

Sources	Types	Fuels	MT CO_2/year	CO_2 Emission Factor (kg/gal)	Fuel Consumption (gallons/year)
Area	Utility Equipment	Gasoline	0.3	8.78	30
Heavy Mobile	LHDT, MHDT, HHDT	Diesel	9	10.21	890
Light Mobile	LDA, LDT1, LDT2, MDV	Gasoline	104	8.78	11,870
Totals			**113**	—	**12,790**

Sources: CalEEMod, TCR 2020, 40 CFR 98 Subpart C

Project Operation Utilities Energy Consumption

Based on CalEEMod for the defined land use, Table 3-12 shows estimated natural gas and electric power usage for the Project.

As shown in Table 3-12, Project operation would result in natural gas usage of approximately 0.71 million cubic feet per year (MMcf/year), and utilization of approximately 190 megawatt-hours per year (MWh/year) of electric power.

Table 3-12: Operational Utility Energy Use

Utility Type	Quantity	Units
Natural Gas	0.71	MMcf/year
Electric Power[1]	190	MWh/year

Source: CalEEMod

1. Includes electricity consumption for building and water processes.

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy?

Impact: Less Than Significant Impact

Construction of the Project would require consumption of petroleum fuels (diesel and gasoline) by the use of construction equipment on-site, by construction equipment delivering supplies to the Property, and by construction workers traveling to and from the Property. The energy required by construction would be temporary and would not be a substantial demand on energy resources. Electricity usage is anticipated to be relatively minor (if used for construction) compared to normal building operations. When not in use, electric equipment would be powered off so as to avoid unnecessary energy consumption. Moreover, there are no distinctive Project characteristics that would require the utilization of construction equipment that are less energy-efficient than comparable equipment at construction sites in other parts of the state. The energy consumed during the construction of the Project would facilitate the development of buildings that adhere to the latest energy efficiency standards outlined in California Title 24 Building Standards Code (CCR, Title 24, Part 6, California Energy Code).

The majority of the energy usage in the Project would consist of lighting, electronic devices, transportation fuels, and climate control. The Project must be designed and will be operated in accordance with the applicable California Building Codes (CBC) (CCR, Title 24, Part 2) and the latest energy code standards (CCR, Title 24, Part 6), which impose energy conservation measures. For building energy usage, the Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) were established in 1978 in response to a legislative mandate aimed at reducing California's energy consumption. The current applicable standards are the 2022 Codes, which became effective on January 1, 2023. These standards play a crucial role in promoting energy-efficient practices and ensuring sustainable construction and operation of buildings in California. As such, the Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operations. In addition, energy efficiency for vehicles travelling to and from the Property are governed by the Corporate Average Fuel Efficiency standards, which establishes fuel efficiency standards. Furthermore, future vehicle purchases are affected by the State of California's Advanced Clean Cars II Rule, which will transition the vehicle fleet toward more energy-efficient electric vehicles. Therefore, the Project's impact on energy would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact: Less Than Significant Impact

As noted above, the energy required for construction would be temporary and would not be substantial nor would it involve any atypical demand on energy resources. The Project would need to adhere to the energy efficiency standards adopted within the State of California's Title 24 Building Standards (CCR, Title 24, Part 6). These updated standards incorporate the California Energy Commission's (CEC) energy efficiency guidelines, resulting in a reduction of energy consumption to the previous Title 24 Building Standards. Due to the Project design, construction, and the nature of operational energy use, the Project would not conflict or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, the Project would result in a less than significant impact on energy.

Mitigation Measures:

No mitigation is required.

VII. Geology and Soils

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. Geology and Soils. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☑	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☑	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐

Existing Conditions:

The geologic and soils information in this section is derived from two main sources: a Geotechnical Evaluation by Ninyo & Moore (2022), which is included as Appendix D of this MND, and a paleontological records search conducted through the Natural History Museum of Los Angeles County (LACM), detailed in Appendix E.

Faults

The Project site is situated in a seismically active area with several active faults nearby, including Mission Ridge, Red Mountain, North Channel, Pitas Point, and Santa Ynez, which can produce maximum moment magnitudes of 6.8 to 7.4. Although the site is not within one of the State of California Earthquake Fault Zones, as per the Alquist-Priolo Earthquake Fault Zoning Act, it is still near the More Ranch Fault Zone, part of the Mission Ridge Fault System, which is considered active by Santa Barbara County. The exact location of the More Ranch Fault varies in different geologic publications, but the City of Goleta Geologic Hazards Map (2009) shows it just south of the Project site. A 2009 site-specific evaluation by Earth Systems Pacific found no evidence of faulting near the proposed improvement areas (Ninyo & Moore 2022).

Geologic Formations

According to regional geologic maps and on-site borings, the Project site is underlain by fill, terrace deposits, and at greater depths, the Monterey Formation. Fill material, composed of moist, medium dense, silty sand, was found up to 3 feet below the surface. Below this, terrace deposits of moist, very stiff to hard, lean clay can be found to a depth of approximately 10 feet, as well as soft to moderately hard silty claystone thereafter to the maximum drilled depth of 71 feet (Ninyo & Moore 2022).

Liquefaction

Liquefaction occurs when loosely consolidated soils lose their loadbearing capabilities during ground shaking and behave like a fluid. This typically affects loose sands and silty sands below the water table within the upper 50 feet of the surface. The Santa Barbara County Comprehensive Plan Seismic Safety and Safety Element (2015) classifies the Project site as having a moderate liquefaction potential. However, a project-specific geotechnical investigation by Ninyo & Moore (2022) determined that liquefaction is not a design consideration for the Project, due to the hard, lean clay deposits and silty claystone found during subsurface exploration. Located within the central portion of Mescalitan Island, the site features shallow and exposed bedrock. While the county's liquefaction hazard map is regional and generalized, the site-specific borings by Ninyo & Moore indicate a low liquefaction potential at the Project site.

Landslide

Landslides typically occur on steep slopes that have been undercut by erosion or where bedrock bedding planes are inclined downward. However, the Project site has relatively flat to gently sloping topography. Based on site reconnaissance, published geologic maps, stereoscopic aerial photographs, and the City of Goleta Geologic Hazards Map (2009), landslides are not considered a potential hazard at the site (Ninyo & Moore 2022).

Collapsible Soils

Borings drilled at the site indicate that the existing fill soils and terrace deposits consist of granular soils, which may be prone to caving (Ninyo & Moore 2020).

Expansive Soils

Expansive soils have a high shrink-swell potential, due to their high clay content. The site-specific geotechnical report by Ninyo & Moore (2022) did not assess soil expansion potential, likely because the soils at the Project site are generally coarse-grained and not rich in clay. Therefore, expansive soils are not expected at the Project site.

Paleontological Resources

Paleontological resources are preserved remains or traces of ancient plants and animals, defined by the Society of Vertebrate Paleontology (SVP 2010) as being older than approximately 5,500 years or older than written history. These resources are limited, nonrenewable, and hold significant scientific and educational value, and thus are protected under State laws and regulations.

Regulatory Setting:

Federal

Occupational Safety and Health Administration Regulations

Excavation and trenching are highly hazardous construction activities. According to the Occupational Safety and Health Administration (OSHA) Excavation and Trenching Standard [29 CFR (Code of Federal Regulations) Part 1926, Subpart P], all excavations where employees might be exposed to cave-ins must be protected. Protection methods include sloping or benching the excavation sides, supporting the sides, or placing a shield between the excavation side and the work area.

State

California Building Standards Code

State regulations for protecting structures from geo-seismic hazards are outlined in the California Building Code (CBC, 24 CCR Part 2), which is updated every three years. These regulations apply to both public and private buildings in California. The 2022 CBC, effective January 1, 2020, is based on the 2021 International Building Code and includes enhanced provisions for existing structures and more stringent seismic-resistant construction standards.

Chapters 16 and 16A of the 2022 CBC cover structural design requirements for seismically resistant construction, including factors for determining seismic site class and seismic occupancy category. Chapters 18 and 18A address foundation and soil investigations, excavation, grading, fill, damp-proofing, waterproofing, allowable loadbearing values of soils, and the design of foundation walls, retaining walls, embedded posts and poles, shallow foundations, and deep foundations. Chapter 33 includes requirements for ensuring stable excavations and slopes at work sites.

Construction activities must comply with occupational safety standards for excavation and trenching, as specified in the California Division of Occupational Safety and Health

(Cal/OSHA) regulations (Title 8 CCR) and Chapter 33 of the CBC. These regulations mandate safety measures for excavation and trench work to protect workers from unstable soil conditions. The proposed Project must implement these safety measures during excavation and trenching.

California Environmental Quality Act

The CEQA Guidelines mandate that all private and public activities, unless specifically exempted, be assessed for potential environmental damage, including impacts on paleontological resources. These resources are limited, nonrenewable, and hold significant scientific, cultural, and educational value, thus recognized as part of the environment under State guidelines. This study meets project requirements per CEQA (13 PRC Section 2100 et seq.) and PRC Section 5097.5 and complies with SVP (2010) guidelines and significance criteria.

CEQA explicitly protects paleontological resources under Section VII(f) of the CEQA Guidelines Appendix G, which addresses potential adverse impacts to unique paleontological resources or geological features. This includes fossils of significant importance, such as new species or genera, or fossils with unique features, as well as sites with significant fossil abundance, diversity, or preservation.

Additionally, CEQA considers a resource "historically significant" if it has yielded or may yield important prehistoric information (PRC Section 15064.5(a)(3)(D)). PRC Sections 5097.5 and 30244 regulate the removal of paleontological resources from State lands, classify unauthorized removal as a misdemeanor, and require mitigation for disturbed sites.

California Health and Safety Code

Sections 17922 and 17951-17958.7 of the California Health and Safety Code mandate that cities and counties adopt and enforce the current edition of the CBC, including its grading section. Specific sections of Volume II of the CBC address various geologic hazards.

California Occupational Safety and Health Administration Regulations

In California, Cal/OSHA is responsible for enforcing federal worker safety regulations, including those for slope protection during construction excavations. Cal/OSHA's standards are more restrictive and protective than federal OSHA standards. The requirements for excavation and trenching operations, along with safety standards for various construction activities, are detailed in 8 CCR Chapter 4, Division of Industrial Safety.

Local

California Government Code Section 65302(f) and (i) mandates that all city and county general plans include a Seismic Safety Element and Safety Element. The Santa Barbara County General Plan Seismic Safety and Safety Element provides data on geologic, soil, seismic, fire, and flood hazards to guide land use planning and assess the safety of different land uses, structures, and occupancies. The Santa Barbara County Hazard Mitigation Plan, which includes various maps and updated data, serves as the main document for public safety guidance in the event of natural disasters.

Methodology:

The analysis evaluates whether the proposed Project would cause geologic and soil impacts, considering State-mandated construction methods specified in Cal/OSHA regulations (Title 8 CCR), the County Building Code (Chapter 10 of the Santa Barbara Building Code), and Chapter 33 of the CBC. It also considers whether the Project would directly or indirectly destroy a unique paleontological resource, site, or geologic feature. If impacts are potentially significant, mitigation measures would be proposed to reduce impacts to less-than-significant levels, if feasible.

The analysis is informed by CEQA case law regarding the scope of analysis required in EIRs for potential impacts from existing environmental hazards, such as geological hazards near a proposed Project site. In California Building Industry Association v. Bay Area Air Quality Management District (2015), the California Supreme Court ruled that CEQA generally does not require agencies to analyze the impact of existing environmental conditions on a project's future users or residents. However, an exception exists: if a proposed Project risks exacerbating existing environmental hazards, the potential impact on future residents or users must be analyzed. This exception does not typically apply to existing seismic hazards, placing such hazards outside the scope of CEQA.

These considerations are reflected in the significance thresholds, which assess the extent to which the proposed Project would cause substantial adverse effects.

Environmental Determination:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Impact: No Impact

The Project site is not located within any State of California Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act. A site-specific evaluation by Earth Systems Pacific in 2009 found no evidence of faulting associated with the nearby More Ranch Fault near the proposed thermal dryer facilities and supporting infrastructure. Therefore, the Project would not cause substantial adverse effects, including the risk of loss, injury, or death due to the rupture of a known earthquake fault. Consequently, no impacts would occur.

ii. Strong seismic ground shaking?

Impact: Less Than Significant Impact

The Project site is located in a seismically active area of Southern California, with several active and potentially active faults capable of producing strong ground shaking, with magnitudes between 6.7 and 7.7. The proposed Project will be designed and constructed according to the 2022 CBC, which requires using maximum considered earthquake ground motion response accelerations for evaluating seismic loads. Ninyo & Moore (2022) calculated a peak ground acceleration of 1.040 gravity (g), based on a magnitude 7.4 earthquake on the Red Mountain Fault, 2.5 miles from the site. The proposed facilities will also follow recommendations from the project-specific geotechnical report by Ninyo & Moore, minimizing potential damage from seismically induced ground failure. Therefore, the Project would not cause substantial adverse effects from strong seismic ground shaking, resulting in less than significant impacts.

iii. Seismic-related ground failure, including liquefaction?

Impact: Less Than Significant Impact

The Santa Barbara County Comprehensive Plan Seismic Safety and Safety Element indicates that the Project site is in an area with moderate liquefaction potential. A geotechnical investigation by Ninyo & Moore (2022) found that liquefaction is not a design concern for the Project due to the hard, lean clay deposits and silty claystone. Other seismic-related ground failures, such as lateral spreading and differential settlement, were also evaluated. Lateral spreading is not expected because the site is not underlain by liquefaction-prone soils. Differential settlement, which can cause foundation and utility damage, will be mitigated by following the 2022 CBC and the geotechnical recommendations, including over-excavation, recompaction of loose sediments, and seismic design of foundations and utilities. Consequently, the Project would not cause substantial adverse effects from seismic-related ground failure, resulting in less than significant impacts.

iv. Landslides?

Impact: No Impact

The Project site has relatively flat topography, and a project-specific evaluation by Ninyo & Moore (2022) determined that landslides would not occur in association with the Project. Therefore, the proposed Project would not cause substantial adverse effects, including the risk of loss, injury, or death due to landslides. No impact would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Impact: Less Than Significant Impact

The proposed Project involves constructing a new thermal dryer facility, which includes a thermal fluid heater, thermal dryer, a series of pumps and conveyors, HVAC system, MCC, and related pavement and utilities. The majority of construction of the thermal dryer facility will be completed with limited impact to the plant operation, since this will be a new facility. The existing sludge drying beds will be filled and graded; new and replacement utility pipelines will be installed; thermal dryer will be installed, and a new building will be constructed; new conveyors and thermal fluid heaters will be installed, followed by the new pumps and piping. An equipment staging area will be created on WRRF's front lawn.

Demolition and removal of concrete and pavement will expose soils to wind and water erosion. Approximately 2,160 CY of soil will be excavated, 1,760 CY of which will be reused onsite for backfill. The estimated volume of excavated soil to be disposed of off-site is 400 CY. Some removal of vegetation will be required for installation of the piping system, resulting in minimal exposure of underlying soils, potentially leading to sedimentation of downstream waters.

Storm water runoff within WRRF is captured internally and treated before being discharged to the Pacific Ocean. However, runoff from the western portion of WRRF drains towards the Goleta Slough. This runoff must comply with the Santa Barbara County Storm Water Management Program and the Small Municipal Separate Storm Sewer System (MS4) Permit, which includes a Construction Site Storm Water Runoff Control Program to prevent pollutant discharge and protect receiving waters.

To comply with the MS4 Permit, GSD's existing SWPPP will be updated to include an ESCP with BMPs such as:

1. Using geotextile fabrics, erosion control blankets, retention basins, and other measures to reduce erosion and siltation.
2. Stabilizing construction site entrances/exits to reduce off-site sediment transport.
3. Protecting storm drain inlets with devices like gravel bag barriers and filter fabric fences.
4. Fencing construction staging areas and using BMPs to prevent runoff.
5. Reseeding exposed graded surfaces within 4 weeks of grading completion.
6. Maintaining erosion and sediment control measures until permanent stabilization.
7. Properly storing, handling, and disposing of construction materials to minimize storm water contamination.
8. Keeping a copy of the updated SWPPP on-site during grading and construction.

With adherence to the MS4 Permit and implementation of site-specific BMPs, the Project will not cause substantial soil erosion or loss of topsoil, resulting in less than significant impacts.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Impact: Less Than Significant Impact

The soils beneath the Project site are not prone to liquefaction or lateral spreading, and the site's relatively flat to gently sloping topography makes it unsusceptible to landslides. The area is also not subject to ground subsidence from groundwater pumping, oil extraction, or peat loss [U.S. Geological Survey (USGS) 2021]. However, the existing fill soils and terrace deposits may be prone to caving, which could lead to differential settlement and distress to structures.

The Project will be designed and constructed in compliance with the CBC and recommendations from the geotechnical report by Ninyo & Moore (2022). This includes over-excavation and re-compaction of loose soils.

Temporary slopes in loose sediments during excavation pose safety hazards, but these will be managed according to the 2022 CBC, Cal/OSHA, and the geotechnical report's recommendations. Unstable excavations should be sloped at 1.5:1 (horizontal to vertical) or flatter, and shoring will be used where necessary.

In summary, while construction will occur in loose soils prone to caving, adherence to geotechnical engineering standards, the CBC, and Cal/OSHA regulations will minimize risks, resulting in less than significant impacts.

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

Impact: Less Than Significant Impact

The site-specific geotechnical report by Ninyo & Moore (2022) did not assess soil expansion potential, likely because the soils are generally coarse-grained and not clay-rich. Therefore, expansive soils are not expected at the Project site. Nonetheless, the Project will be designed and constructed in accordance with the 2022 CBC requirements for expansive soils, if applicable, ensuring no substantial risks to life or property. Consequently, impacts would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Impact: No Impact

The proposed Project involves upgrades to the GSD wastewater treatment facility and will not use septic tanks or alternative wastewater disposal systems. Therefore, no impacts related to septic tanks or alternative systems would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

Impact: Less Than Significant with Mitigation Incorporated

The proposed Project site is located in the west-central Transverse Ranges Geomorphic Province, spanning from Point Conception to the San Bernardino Mountains, and includes several mountain ranges and offshore islands (CGS 2002; Morton and Miller 2006). The province trends east-west, contrasting with the typical northwest trend of Coastal California. Regionally, the Transverse Ranges extend offshore to include the continental shelf and islands such as Santa Cruz, Santa Rosa, and San Miguel (CGS 2002).

Surficial geological mapping (Dartnell et al. 2011) indicates that: the northeastern part of the site consists of Holocene estuarine deposits (Qe); the central part includes early Pleistocene to possibly late Pliocene siltstone (QTst); and the southernmost part contains the late Miocene Monterey Formation (Tmu). A paleontological records search revealed no paleontological resources within the proposed Project site, but significant resources have been found in similar deposits nearby (see Table 3-13), indicating high paleontological sensitivity for the site.

The Holocene deposits have low surface sensitivity, increasing with depth, while artificial fill has no sensitivity. The presence of past fossil discoveries nearby suggests a high potential for significant paleontological resources at the site. Ground-disturbing activities during construction could potentially destroy these resources, making mitigation measures necessary. Implementing MM-GEO-1 would reduce potential impacts to a less than significant level.

Table 3-13: LACM Fossil Localities Near the Project Site

Locality Number	Formation/Depth Below the Surface	Approximate Location	Taxa
LACM VP 5018; LACM IP 36, 416, 6913, 6919	Unknown Pleistocene Unit/Unknown Depth	Seacliff about south of Isla Vista between Goleta Point & Coal Oil Point	Fish (Osteichthyes); Invertebrates (Alia, Axinopsida, Barbarofusus, Caesia, Callianax, Callithaca, Calyptraea, Cancer, Cellaria, Crepidula, Cystiscidae, Decapoda, Glans, Hima, Leukoma, Lirobittium, Lottia, Lucinisca, Mactromeris, Macoma, Miodontiscus, Mitrella, Mytilidae, Nutricola, Ostrea, Paciocinebrina, Penitella, Platyodon, Saxidomas, Solen, Strongylocentrotus, Tellina, Tresus, Urosalpirix)
LACM VP 7954	Monterey Formation/Surface	El Capitan State Beach	Sperm Whale (Physeteridae)
LACM IP 8057	Pleistocene Marine Terrace/Unknown Depth	Along the Coast East of Goleta Landing	Marine Gastropod (Cryptonatica)
LACM IP 8056	Unnamed Pleistocene Conglomerate/Unknown Depth	Along the Coast East of Goleta Landing	Unspecified Invertebrates
LACM VP 1013	Unnamed Miocene Formation/Unknown Depth	Victoria St. Sand Pit. Packard's Hill	Cormorant (Phalacrocorax)
LACM VP 5610, 65174	Monterey Formation/Unknown Depth		Flounder (Paralichthys), bony fish (Eclipes, Thyrsocles), herring (Xyne grex); plants

Notes: IP, Invertebrate Paleontology Collections; VP, Vertebrate Paleontology Collections.

Cumulative Impacts:

Cumulative development in the Goleta Valley is not expected to incrementally contribute to geologic resource impacts because these impacts are generally site-specific. Therefore, the Project's contribution to cumulative geological resource impacts would be minimal, resulting in less than significant cumulative impacts.

Mitigation Measures:

Mitigation Measure MM-GEO-1, detailed in Section 3.5.3, addresses potential impacts to paleontological resources during construction. This measure involves implementing a Paleontological Resources Impact Mitigation Program and conducting paleontological monitoring before any grading activities begin. With this program in place, the potential impact of the proposed Project on geological and paleontological resources will be reduced to less than significant.

VIII. Greenhouse Gas Emissions

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Greenhouse Gas Emissions. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☑	☐	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Regulatory Setting:

For this resource area, an investigation of the proposed Project's potential impact on climate-change-related to emissions of GHGs was conducted. There is a strong scientific consensus that the rapidity of the heating across the planet in recent decades is primarily caused by GHG emissions from human activities. Atmospheric concentrations of CO_2, the main GHG, have been increasing rapidly in recent decades, with current levels representing an increase of nearly 45% over pre-industrial levels. Climate change could also have major impacts on the region's natural systems, water supply, economy, and infrastructure.

Assembly Bill (AB) 32, sets target emissions and requires that GHG emitted in California be reduced to 1990 levels by the year 2020, which is 427 million metric tons of carbon dioxide equivalent (CO_2e). The year 2020 reduction target equates to a decrease of approximately 29 percent in GHG emissions below year 2020 "business as usual" (BAU) emissions (or approximately 15 percent below the current GHG emissions). BAU conditions are defined based on the year 2005 building energy efficiency, average vehicle emissions, and electricity energy conditions. The BAU conditions assume no improvements in energy efficiency, fuel efficiency, or renewable energy generation beyond that existing today.

To implement the market-based incentive provisions of AB 32, CARB approved a carbon Cap-and-Trade Program to establish a system of market-based declining annual aggregate emission limits for GHG emission sources, applicable from January 1, 2013, to December 31, 2020. The overall GHG emissions cap under the program declined by 3% each year, from 2015 through 2020. In September 2016, Governor Jerry Brown signed Senate Bill (SB) 32, which mandated a GHG emissions reduction target of 40% below 1990 emission levels by 2030. This bill effectively extended the efforts already in effect associated with AB 32 implementation.

In addition to CARB's California 2022 Climate Change Scoping Plan, the SBCAPCD offers guidance on GHG reduction in its 2022 Ozone Plan. Neither document specifically mentions thresholds for GHGs.

The County of Santa Barbara adopted its 2030 Climate Action Plan (CAP) in August 2024 to achieve a 50% reduction in GHG emissions below 2018 levels by 2030. The CAP establishes sector-specific strategies and measures to reduce emissions from energy, transportation, waste, and wastewater systems. Applicable CAP measures for the proposed Project include:

- CE-1.1 – Building Electrification: Encourage electrification of new facilities and minimize reliance on fossil fuels.
- CE-1.2 – Carbon-Free Electricity: Transition to 100% carbon-free electricity sources through renewable energy procurement or onsite generation.
- TR-2 – Reduce VMT: Implement strategies that reduce VMT associated with project operations.
- W-1 – Landfill Diversion: Provide systems for recycling and organic waste collection to meet diversion goals.
- W-2 – Organics Recycling Requirement: Comply with Senate Bill 1383 by sorting and collecting organic waste and providing educational signage.

California's Building Energy Efficiency Standards are updated on an approximately 3-year cycle. The 2022 standards improved upon the 2019 standards for new construction of, and additions and alterations to, residential, commercial, and industrial buildings. The 2022 standards went into effect on January 1, 2023 (CEC 2022). Since the Title 24 standards require energy conservation features in new construction (e.g., high-efficiency lighting; high-efficiency HVAC systems; thermal insulation; double-glazed windows; water conserving plumbing fixtures; etc.), they indirectly regulate and reduce GHG emissions. The HVAC system planned for the SHIP is described in Section 2.5.4. Additionally, the Santa Barbara County Strategic Energy Plan (2019) provides a roadmap to improve utilization of renewable energy sources within the region.

Methodology:

GHGs – primarily CO_2, methane (CH_4), and nitrous oxide (N_2O), collectively reported as CO_2e – are directly emitted from stationary source combustion of natural gas in equipment such as water heaters, boilers, process heaters, and furnaces. GHGs are also emitted from mobile sources, such as on-road vehicles and off-road construction equipment, burning fuels such as gasoline, diesel, biodiesel, propane, or natural gas (compressed or liquefied). Indirect GHG emissions result from electric power generated elsewhere (i.e., power plants), which is then used to operate process equipment, lighting, and utilities at a facility. Also, included in GHG quantification is electric power used to pump the water supply (e.g., aqueducts, wells, pipelines) and disposal and decomposition of municipal waste in landfills (CARB 2022a).

Using CalEEMod, direct on-site and off-site GHG emissions were estimated for construction and operation, and indirect off-site GHG emissions were estimated to account for electric power used by the proposed Project, water conveyance, and solid waste disposal. CalEEMod also quantifies common refrigerant GHGs (abbreviated as "R" in the model output) used in air conditioning and refrigeration equipment, some of which are hydrofluorocarbons (HFCs).

GHG emissions from operation of the proposed Project combustion sources were calculated using EPA (40 CFR Part 98 Subpart A and C) emission factors and methods and other available data. Detailed emission calculations for the Project's stationary sources are included Appendix A2.

Significance Criteria:

The GHG Emissions Section of the Santa Barbara County Environmental Thresholds and Guidelines Manual (2021) provides a "brightline" significance threshold for industrial projects of 1,000 MT CO_2e per year. Some revisions to the significance thresholds for GHG emissions were adopted in August 2024 along with adoption of the 2030 CAP (Santa Barbara County 2024), but the 1,000 MT CO_2e per year threshold for industrial sources was retained. The Manual indicates that this threshold applies to industrial stationary sources subject to discretionary approvals by the County, where the County is the CEQA lead agency. It also indicates that the County will request other CEQA lead agencies to use this threshold, where the County is a CEQA responsible agency for a project. The revised GHG thresholds also indicate that "Climate change under CEQA differs from most other types of impacts in that they are examined as a cumulative impact that results not from an individual project's GHG emissions, but rather from GHG emissions emitted on a global scale for many decades and from many different sources," and "The GHG emissions thresholds are designed to identify (1) a cumulatively considerable contribution to an existing adverse condition, and (2) a cumulatively significant impact in combination with other projects causing related impacts." As a result, cumulative impacts are wrapped into the applicable threshold.

Section 3.c of the revised GHG thresholds (County of Santa Barbara 2024) indicates that "If a proposed project or plan's estimated GHG emissions do not exceed the applicable emissions threshold, then it is considered consistent with the 2030 CAP, which sets the acceptable countywide GHG emissions levels. In this scenario, the project or plan's GHG emissions impacts (both project- and cumulative-level) related to GHG emissions and climate change would be less than significant. If a proposed project or plan's estimated GHG emissions exceed the emissions threshold, mitigation measures must be identified, and respective GHG emissions reduction calculation included within the respective CEQA review document in order to reduce project or plan GHG emissions to at or below the applicable emissions threshold."

The SBCAPCD Environmental Review Guidelines (2015) contain GHG emissions as well as air quality significance criteria. This guideline document indicates that a proposed stationary source project will not have a significant GHG impact if operation of the project will emit less than the screening significance level of 10,000 MT/year CO_2e. Stationary source projects include equipment, processes and operations that require a SBCAPCD PTO, such as the proposed SHIP.

The SBCAPCD Scope and Content of Air Quality Sections in Environmental Documents (2022) refers to the above Review Guidelines and to a process for determining GHG impacts but does not provide a specific threshold. This guideline document indicates that "CEQA documents should include a quantification of GHG emissions from all project sources, direct and indirect, as applicable. In addition, we recommend that climate change impacts be mitigated to the extent reasonably possible, whether or not they are determined to be significant." Some of the mitigation measures suggested are:

- Energy use (energy efficiency, low carbon fuels, renewable energy);
- Waste reduction (material re-use/recycling, composting, waste diversion/minimization); and
- Transportation – reduce VMT.

These measures are all key components of GSD's Biosolids and Energy Strategic Plan.

Environmental Determination:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact: Less Than Significant Impact with Mitigation Incorporated

Construction emissions, per CalEEMod, are estimated to be about 1,461 MT CO_2e total, which when amortized over a 30-year projected project lifetime, equates to about 49 MT CO_2e. More detail on construction emissions can be found in Appendix A1.1. Table 3-14 shows a breakdown of the Project construction GHG emissions over the approximately 1.5 year construction period.

Table 3-14: SHIP Construction Greenhouse Gas Emissions Summary

GHG	Project Construction GHG Emissions (MT/year)
CO_2	1,405
CH_4	<1
N_2O	<1
R	<1
CO_2e	1,461

Sources: CalEEMod version 2022.1.1.33

As described in Section 2.0, GSD is implementing a Biosolids and Energy Strategic Plan (BESP) developed in 2019. Development of the BESP included the evaluation of a wide variety of technologies to increase digestion capacity and biogas production while leveraging existing assets. GSD's BESP evaluated biosolids unit processes in detail and recommended upgrading existing facilities to mitigate regulatory uncertainties affecting biosolids disposition, to diversify beneficial use outlets, and to approach energy neutrality for the facility. Technology alternatives were evaluated to increase digester capacity, energy recovery, and biogas production, and production of Class A biosolids material. Class A biosolids are defined as dewatered and heated material that meets the EPA guidelines for land application with no restrictions, thus reducing VMT and disposal costs.

The results of the BESP evaluation identified combined heat and power (a combustion engine) as the most desirable biogas utilization technology. An MND (State Clearinghouse No. 20220402420) was completed and approved in 2022 for a prior project consisting of a new 550,000-gallon digester, a 160-kilowatt CHP engine, and a biogas pretreatment system. That initial project under the BESP, referred to as the 2022 Biogas Project, was oriented toward the goal of increasing digester (and biogas production) capacity. The current Solids Handling Improvement Project (SHIP) is the next project implementing the BESP, with the goal of producing Class A biosolids material.

Separately the BESP included evaluation of an onsite solar photovoltaic (PV) system. GSD currently is in the process of engineering and permitting an approximately 800 kilowatt (kW) Solar Project, which will include a battery energy storage system, and is projected to generate approximately 1,414,000 kilowatt-hours of energy per year and will reduce the energy needs for the WRRF.

Together, the 2022 Biogas, SHIP, and Solar Projects demonstrate GSD's commitment to reducing reliance on non-renewable energy and lowering lifecycle GHG emissions. For example, the planned Solar Project is estimated to supply approximately 32% of GSD's annual energy demand, resulting in a reduction of about 713 MT CO_2e per year. Similarly, the 2022 Biogas Project, which utilizes renewable digester gas, offsets grid electricity that would otherwise come from fossil sources. At full operational capacity, the CHP engine alone is expected to reduce non-renewable CO_2e emissions by approximately 290 MT CO_2e annually, with meaningful reductions even under partial-load scenarios. These projects, combined with the proposed SHIP, form an integrated approach to energy neutrality and GHG mitigation, reinforcing that the current Project is not only beneficial on its own but also essential to achieving GSD's long-term sustainability goals. The objectives of 2022 Biogas, SHIP, and Solar Projects are aligned with energy neutrality and waste reduction, which are key components of the County of Santa Barbara's 2030 Clean Air Plan (adopted in August 2024) for the reduction of GHG emissions. Hence, the implementation of the BESP, including the proposed SHIP, can reasonably be considered GHG emissions mitigation.

Although the thermal dryer facility would initially use natural gas as fuel to provide the heat necessary for operation, the facility is being designed to use biogas produced by the on-site anaerobic digesters in the future, once biogas production increases. This future conversion would further reduce fossil fuel use and associated emissions.

Although using biogas as fuel emits GHGs, it is widely considered a net-zero or even negative-carbon solution, particularly in California climate policy and CEQA practice. The EPA identifies biogenic sources as those associated with the decomposition of biologically based materials, including landfills, manure management, wastewater treatment, and combustion of biogas. These emissions are considered part of the natural carbon cycle, and many climate models exclude biogenic CO_2 from net GHG calculations. In contrast, anthropogenic emissions are those resulting from human activities, such as fossil fuel combustion, which release ancient carbon that has been sequestered underground for millions of years. According to the Association of Environmental Professionals (AEP 2016), biogenic GHG emissions need not be counted as direct or indirect project emissions under CEQA if it can be demonstrated that they do not result in a net increase in atmospheric GHGs. A significant benefit of using biogas is capturing and converting CH_4, a GHG with a global warming potential over 25 times that of CO_2, into usable energy. This prevents uncontrolled methane emissions from sources like landfills and anaerobic digesters, which would otherwise contribute substantially to climate change. The overall process is considered to significantly reduce lifecycle GHG emissions compared to conventional fuels, especially when methane is converted to biogas instead of being released directly into the atmosphere, supporting California's goals for carbon neutrality and sustainable waste management.

Table 3-15 shows a breakdown of the Project operation annual GHG emissions. The change in GHG emissions from reduction in VMT should be considered. The produced sludge is currently hauled to Liberty Composting facility in Lost Hills, CA, which is approximately 184 miles from the GSD facility. As a result of the proposed Project, sludge hauling would be reduced from one truck a day, 7 days a week, to a maximum of two trucks per week. The pelletized product may be sent to a local end-user; however, for GHG analysis purposes, in order to be conservative, it is assumed that dried pellets would continue to be sent to the same location (i.e., Liberty Composting facility in Lost Hills, CA). As such, the Project would result in a net decrease of at least 154 MT per year of CO_2e.

Table 3-15: Operation Greenhouse Gas Emissions Summary

GHG	Project Operation GHG Emissions (MT/year)						
	+CalEEMod "Land Use" Emissions [1]	- Existing Sludge Hauling[2]	+Proposed Sludge Hauling	+Natural Gas Stationary Source	+Diesel Stationary Source	Project Operation Total GHG Emissions	Project Operation Anthropogenic GHG Emissions[3]
CO_2	148	-206	59	2,606	6	2,613	6
CH_4	<1	<1	<1	<1	<1	<1	<1
N_2O	<1	<1	<1	<1	<1	<1	<1
R	<1	<1	<1	–	–	<1	1
CO_2e	158	-216	62	2,609	6	**2,619**	**10**

Notes:

1. "Land Use" emission comprise Project's direct GHG area, mobile, and energy emissions as well as indirect emissions from waste and water usages, although proposed sludge hauling calculated separately. See Appendix A1.1.
2. See Appendix A1.2.
3. Although the thermal dryer facility is proposed to initially use natural gas as fuel to provide the heat necessary for operation, the facility is being designed to use biogas produced by the on-site anaerobic digesters in the future, once biogas production increases. Once the thermal dryer is converted to operate on biogas, the anthropogenic (i.e., non-biogenic) GHG emissions from the proposed Project operation would be reduced to 10 MT CO_2e.

Table 3-16 aggregates the CO_2e emissions for all construction phases and includes the 30-year construction amortized emissions with the operational anthropogenic GHG emissions, which include the net reduction from sludge hauling emissions. Santa Barbara County specifies a threshold of 1,000 MT CO_2e per year for industrial stationary-source projects in its Environmental Thresholds and Guidelines Manual (2021) to determine if GHG emissions constitute a significant cumulative impact. As shown in Table 3-16, once the thermal dryer is converted to operate on biogas, the Project's GHG emissions would be well below the County's 1,000 MT CO2e per year threshold. Given the Project's objectives to reduce waste, its incorporation of feasible GHG reduction strategies, its design flexibility for future emission reductions, and its interim GHG emissions remaining well below the SBCAPCD's CEQA significance threshold of 10,000 MT for industrial projects, the Project is considered to have been mitigated to less than significant impact.

Table 3-16: Greenhouse Gas Emissions Summary and Significance Evaluation

GHG	GHG Emissions (MT/year)				Significant?
	Amortized Project Construction[1]	Project Operation[2]	Project Total[3]	County/SBCAPCD Thresholds[4]	
CO_2e	49	10	59	1,000/10,000	No

Notes:

1. Construction emissions of 1,461 MT/year have been amortized for 30 years.
2. Project Operation includes the reduction from reduced VMT associated with sludge hauling. GHG total emissions for initial stages of the Project when the thermal dryer is operated on natural gas is 2,619 MT CO_2e/year. As explained above, once the thermal dryer is converted to operate on biogas, the anthropogenic GHG emissions from the proposed Project would be reduced to 10 MT CO_2e/year, which is well below the County's 1,000 MT CO_2e/year and SBCAPCD 10,000 MT CO_2e/year thresholds.
3. Total CO_2e emissions comprises construction emissions amortized over 30 years plus annual operational emissions. Project total emissions do not include VMT reduction from increased local use of biosolids.
4. The significance threshold from the County's Environmental Thresholds and Guidelines Manual (2021) is used, although the 10,000 MT/year CO_2e threshold from the SBCAPCD Environmental Review Guidelines (2015) would also apply.

Table 3-17 represents the net GHG impact in CO_2e of each project, accounting for both ongoing annual emissions and construction emissions amortized over 30 years. Because the construction GHG emissions of the solar panels have not been estimated in CalEEMod to date (that project is just getting underway), it has been assumed that the construction activities would be at most comparable to the proposed Project and would result in up to 49 MT/year CO_2e after amortization[1]. As shown in Table 3-17, collectively, the BESP's strategies, including the thermal dryer with eventual use of digester gas and reduction in VMT, Solar Project, and 2022 Biogas Project, are projected to reduce 882 metric tons of CO_2e annually, demonstrating a comprehensive and forward-looking approach to climate action and energy resilience.

[1] For reference, the 2022 Biogas Project construction emissions amortized over 30 years were only 13 MT/year CO_2e. Therefore, an assumption of 49 MT/year CO_2e appears to be reasonable for the size of the Solar Project.

Table 3-17: BESP CO_2e Emissions (MT/year) Including Emission Reductions from Offsetting Energy Demand and Reduced VMT for Solids Hauling

GHG Emission Source	2022 Biogas Project[1]	SHIP (Proposed Project)	Solar Project[2]	BESP Total CO_2e Emissions
Amortized Construction	13	49	49	111
Stationary Source Operation[3]	--	6	--	6
Land Use/Mobile Sources[4]	--	158	--	158
Reduced Energy Demand	-290		-713	-1,003
Change in Hauling VMT	--	-154	--	-154
CO_2e	-277	59	-664	-882

Notes:

1. 2022 MND, SCH No. 2022040242
2. Emission calculations are shown in Appendix A2.
3. Anthropogenic (non-biogenic) emissions due to biogas combustion in the CHP engine and the proposed SHIP thermal dryer would be zero, and only the GHG emissions from testing and maintenance of the diesel fire pump engine are included.
4. CalEEMod calculated GHG emissions related to water use and electricity in a new building and an additional employee for the SHIP.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact: Less Than Significant Impact

The SBCAPCD Ozone Plan defers to SBCAG's Fast Forward 2040 for GHG reductions. SBCAG's Fast Forward 2040 focuses on transportation, instead of stationary sources. The proposed Project would be considered a beneficial use project, as it would result in reduction of VMT and, consequently, GHG emissions, and therefore would be consistent with the goals and objectives of any GHG reduction plan (federal, State, or local).

Previous SBCAPCD clean air plans (e.g., the SBCAPCD's 2013 Clean Air Plan) introduced several rules related to GHG emissions. Compliance with all SBCAPCD rules is expected. Therefore, this Project is expected to be consistent with applicable plans.

Moreover, the proposed Project supports the 2030 CAP measures through significant VMT reduction (sludge hauling trips reduced from daily to twice weekly), production of Class A biosolids to promote beneficial reuse, and design provisions for future biogas utilization to minimize fossil fuel use. Additionally, the Project is part of the broader BESP, which includes installation of onsite solar photovoltaic system, as well as a CHP engine that uses renewable digester gas to offset grid electricity. These components align with additional CAP measures such as CE-1.9 (Onsite Renewable Energy Generation) and CE-1.10 (Energy Storage), further advancing energy neutrality and GHG reduction goals.

As noted above, Section 3.c of the revised GHG thresholds (County of Santa Barbara 2024) indicates that "If a proposed project or plan's estimated GHG emissions do not exceed the applicable emissions threshold, then it is considered consistent with the 2030 CAP."

Mitigation Measures:

The proposed Project would reduce the sludge hauling from one truck a day, 7 days a week, to a maximum of two trucks per week. Furthermore, GSD will continue to look for more local end users for use of the biosolids product, which will further reduce VMT. It would also meet one of GSD's key objectives for doing the SHIP, i.e., to produce a Class A biosolids material that is a beneficial product that can be used without restriction, thereby reducing waste.

Although the thermal dryer facility is proposed to initially use natural gas as fuel to provide the heat necessary for operation, the facility is being designed to use biogas produced by the on-site anaerobic digesters in the future, once biogas production increases. This future conversion would further reduce fossil fuel use and associated emissions.

Please refer to Section 3.5.5 for the GHG emissions mitigation measure. After implementing Mitigation Measure MM-GHG-1, impacts related to GHG emissions would be less than significant.

IX. Hazards and Hazardous Materials

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. Hazards and Hazardous Materials. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☑	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☑	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☑

Existing Conditions:

Current operations at GSD involve transport, storage, use, and disposal of hazardous materials. Wastewater treatment operations, by intention, typically involve the use of hazardous materials during routine operations for disinfection and treatment of wastewater, as well as during routine facility maintenance for painting and diesel-powered equipment maintenance. Many of the materials used in routine operation at the proposed Project site are considered hazardous; while many of the materials are stored and used in significant quantity on a daily basis, use of, and access to, these materials is controlled. Furthermore, materials used for painting and equipment repair activities generally are maintained at the site in limited quantities, and they are stored and handled following manufacturer and regulatory agency guidelines for safety.

Routine operations at the proposed Project site include use and storage of thermal fluid (i.e., mineral oil), as well as lubrication oil for the proposed dryer and conveyors. The oil will be transported to the site in bulk quantities and stored for daily use. The waste fluid will be tested routinely and will be disposed of accordingly.

According to EnviroStor and GeoTracker, two government programs run by the California Department of Toxic Substances Control (DTSC) and SWRCB, respectively, the site is not a previous spill site and does not have any known sources of contamination.

Environmental Determination:

a) Create significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

<u>Impact</u>: Less Than Significant Impact

Construction activities for the proposed Project would be short-term and one-time in nature, and would involve the limited transport, storage, use, and/or disposal of hazardous materials. Some examples of hazardous materials handling include fueling and servicing construction equipment on-site and the transport of fuels, lubricating fluids, and solvents. These types of materials, however, are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated by the Cal/OSHA, DTSC, EPA, OSHA, and the Santa Barbara County Fire Department. Therefore, construction impacts would be less than significant.

Operation of the proposed Project would generate hazardous waste, such as used oil, empty hazardous material containers, and cleanup spill residue. Handling of hazardous materials will continue to be controlled through implementation of GSD's Hazardous Materials Business Plan (HMBP) (GSD 2024), which will be updated and maintained by the facility, as required by the local Certified Unified Program Agency (CUPA). Finally, the facility expects to continue to comply with applicable hazardous waste disposal regulations. Since the facility has readily available methods for safe transportation [DTSC- and U.S. Department of Transportation (USDOT)-approved transporters] and is required to ship certain wastes as hazardous wastes, the operational impacts of the transport, use, and disposal of hazardous materials would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact: Less Than Significant Impact

The facility could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. However, the proposed Project is not expected to increase any risks to the public or environment from reasonably foreseeable upset or accident conditions. The small amount of waste fluid and used oil generated during the operations of the proposed Project is not expected to cause a significant hazard to the public or environment. The proposed equipment is not expected to be any more significant a hazard than the existing equipment at WRRF.

GSD’s HMBP (GSD 2024) and Emergency Response Plan (GSD 2024) already contain provisions to store and handle hazardous materials. While GSD’s HMBP and Emergency Response Plan are updated annually and would need to be revised to include the new equipment that would be added under the proposed Project, the plant’s hazardous materials management and emergency response procedures would remain the same.

Therefore, impacts on hazards to the public or environment from reasonably foreseeable upset or accident conditions are less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact: No Impact

There is no impact related to the potential for the proposed Project to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school, as no public schools are located or proposed for construction within 0.25 miles of the proposed Project site.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 65962.5 and as a result, would it create a significant hazard to the public or the environment?

Impact: No Impact

Soils will be disturbed as a result of this Project. EnviroStor and GeoTracker indicate that the site does not have any known contamination. EnviroStor is a database maintained by the California DTSC for known contamination and/or remediation sites. GeoTracker is a database maintained by the SWRCB and documents leaking underground storage tanks. The nearest leaking underground storage tank is nearly 2,000 feet away at the airport. There are two sites in EnviroStor labeled “military evaluation” more than 950 feet from the disturbed soil; however, there are no active contaminated sites or remediation sites within 1 mile of the site. As a result, disturbing the soils should not have an impact to the public or the environment.

e) For a project located within an airport land use plan or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

Impact: Less Than Significant Impact

The proposed Project is located within an airport land use plan, resulting in a safety hazard for people residing or working in the Project area. The nearest public airport to the proposed Project is the adjacent SBA, located immediately west of One William Moffett Place, the western boundary to the proposed Project site. While the airport is located adjacent to the proposed Project site, the site is not located beneath the approach, departure, or sideline zones of the airport, the areas of greatest hazard to people on the ground. Furthermore, as this Project is an expansion of the existing facility with only one additional permanent employee, only a limited number of additional temporary personnel for construction will be exposed to the hazard posed by the airport. Implementation of the proposed Project requires no change in zoning for the site, and the impact is considered less than significant.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact: Less Than Significant Impact

While GSD's HMBP and Emergency Response Plan are updated annually and would need to be revised to include the new equipment that would be added under the proposed Project, the plant's hazardous materials management and emergency response procedures would mostly remain the same. The facility will reevaluate its emergency response plan and evacuation plan and make necessary changes; however, no significant changes are expected, as the equipment does not restrict movement along evacuation routes, and the small amounts of new hazardous materials associated with the engine are not expected to alter the emergency response plan significantly. Therefore, impacts would be less than significant.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Impact: No Impact

The proposed Project would not expose people or structures to a risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. The proposed Project site is located in a partially developed portion of the Goleta Valley. The surrounding area does not contain dense areas of flammable brush, grass, or trees. The site is not near areas containing dense vegetation (flammable brush) considered to be wildlands. The proposed Project is surrounded by asphalt, concrete, and grass, which do not pose a significant fire risk. Furthermore, the proposed Project is required to comply with local fire code requirements. Therefore, no impact would occur.

Mitigation Measures:

No mitigation is required.

X. Hydrology and Water Quality

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Hydrology and Water Quality. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☑	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☑	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☑	☐
i) result in a substantial erosion or siltation on- or off-site;	☐	☐	☑	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☑	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☑	☐
iv) impede or redirect flood flows?	☐	☐	☐	☑
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☑	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☑	☐

Existing Conditions:

WRRF is located adjacent to San Pedro Creek, near San Jose Creek and Atascadero Creek (300 feet and 700 feet southeast, respectively), and approximately 1,200 feet north of the Goleta Slough Channel. Each of these waterways converge into the Goleta Slough that flows into the Pacific Ocean (California DWR 2004, 2021; Goleta Water District 2017). Most storm water at WRRF is internally managed and treated before being discharged offshore. This occurs through a series of on-site stabilization basins, where the water either evaporates or flows to the main pump station, and is then handled by the wastewater treatment process, before being discharged to the Pacific Ocean, approximately 1 mile offshore. The large grassy lawn in the western portion of WRRF captures storm water with the residual runoff flowing toward Moffett Place and then to the Goleta Slough.

Surface water quality at the site is regulated under the Santa Barbara County Storm Water Management Program and the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Small MS4s (SWRCB Water Quality Order No. 2013-0001-DWQ; NPDES General Permit No. CAS0000004). WRRF is situated over the Central Subbasin of the Goleta Groundwater Basin that extends from the Santa Ynez Range foothills on the north to the More Ranch Fault Zone on the south. The Basin is comprised of three subbasins, the West, Central, and North Subbasins with the most usable stored groundwater existing within the fully adjudicated Central Subbasin, making it a low-priority basin under the 2014 Sustainable Groundwater Management Act (SGMA) (California DWR 2004, 2021; Goleta Water District 2017).

This basin is partially recharged by the Atascadero, Carneros, Cieneguitas, Las Vegas, Maria Ygnacio, San Antonio, San Jose, and Tecolotito creeks. Another recharge source is the bedrock located in the foothills. The principal water-bearing units are derived from Holocene to Pleistocene alluvium, reaches a maximum thickness of about 100 feet, and yields significant amounts of water. The Pleistocene Santa Barbara Formation serves as the main water source for the basin, reaches a maximum thickness of 2,000 feet in the southern part, and generally has confined groundwater (California DWR; Goleta Water District 2017).

Groundwater at WRRF site is about 57 feet below ground surface, based on borings conducted in 2020. However, groundwater has been identified as shallow as 3 feet (equal to an approximate elevation of 6 feet above MSL), approximately 1,400 feet northeast of the Project site east of San Pedro Creek (Ninyo & Moore 2021 and 2022). The entire WRRF facility is within a 500-year flood zone. Although northern and eastern portions of the facility are within a 100-year flood hazard zone, the proposed construction areas are not (FEMA 2018; CDOC 2009; City of Goleta 2016).

Regulatory Setting:

Federal

<u>Clean Water Act</u>

The increasing public awareness and concern for water pollution led to the Federal Water Pollution Control Act Amendments of 1972, which were further amended in 1977 and became known as the CWA (33 USC 1251 et seq.). The CWA is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters. It established guidelines for regulating pollutant discharges into U.S. waters and requires states to adopt water quality standards to protect public health, enhance water quality, and ensure the CWA's implementation.

Section 303 of the Clean Water Act (Beneficial Use and Water Quality Objectives)

The Central Coast Regional Water Quality Control Board (Central Coast RWQCB) is tasked with protecting the beneficial uses of waters in Santa Barbara County. The Central Coast RWQCB uses its authority in planning, permitting, and enforcement to implement water quality management plans and policies, as outlined in the Basin Plan. This plan includes definitions of beneficial uses for surface waters, groundwater basins, marshes, and mudflats, which are used to establish water quality objectives and discharge conditions.

The Basin Plan identifies existing and potential beneficial uses of key surface water drainages in the region. Under Section 303(d) of the CWA, California must list impaired water bodies that do not meet water quality standards. The Central Coast RWQCB develops Total Maximum Daily Loads (TMDLs) for specific pollutants in these impaired water bodies to ensure they meet water quality standards.

Section 401 of the Clean Water Act (Water Quality Certification)

Section 401 of the CWA mandates that applicants for federal permits, such as a USACE Section 404 permit, must obtain state certification to ensure that discharges into U.S. waters comply with the CWA and state water quality standards. Specifically, applicants for a Section 404 permit, required for discharging dredged or fill material into U.S. waters, must also secure water quality certification under Section 401. In the Project area, the Santa Ana Regional Water Quality Control Board (SARWQCB) provides the necessary Section 401 water quality certification.

Section 402 of the Clean Water Act (NPDES)

The CWA was amended in 1972 to make the discharge of pollutants from any point source into U.S. waters unlawful unless it complies with an NPDES permit (33 USC 1342). Section 402 of the CWA established the NPDES permit program to control water pollution. In California, the EPA has authorized the SWRCB to implement the NPDES program.

The Phase II Rule, finalized on December 8, 1999, expanded the NPDES program to include storm water discharges from construction sites disturbing between 1 and 5 acres (i.e., small construction activity). These discharges are regulated by the NPDES General Permit for Storm Water Discharges Associated with Construction Activity (Order No. 99-08-DWQ), also known as the General Construction Permit. Applicants must obtain coverage under this permit and develop a SWPPP outlining BMPs to protect storm water runoff and meet water quality standards, including TMDL waste allocations.

The SWPPP must include a visual monitoring program, a chemical monitoring program for non-visible pollutants if BMPs fail, and a sediment monitoring plan if the site discharges to a water body listed for sediment under Section 303(d). Regular inspections of all BMPs are required. On September 2, 2009, the SWRCB issued a new NPDES General Permit for Storm Water Associated with Construction Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002), effective July 1, 2010.

National Flood Insurance Program

The National Flood Insurance Act of 1968 instituted the National Flood Insurance Program (NFIP) to provide flood insurance to communities that adopt floodplain management programs aimed at reducing future flood losses. The Act mandates the identification of all floodplain areas in the U.S. and the establishment of flood risk zones within these areas. The Federal Emergency Management Agency (FEMA) administers the NFIP, coordinating with communities to set effective floodplain management standards.

FEMA prepares Flood Insurance Rate Maps (FIRMs) that outline areas of known special flood hazards and their associated risks. The program promotes the adoption and enforcement of local floodplain management ordinances to mitigate flood risks. FEMA also identifies flood hazard areas across the U.S. on flood hazard boundary maps.

Federal Antidegradation Policy

The Federal Antidegradation Policy (40 CFR Part 131.12) mandates that states create and implement statewide antidegradation policies. These policies must, at a minimum, protect and maintain:

- Existing in-stream water uses.
- Existing water quality that exceeds the levels needed to support current beneficial uses, unless a state determines that lowering the water quality is essential for economic and social development in the area.
- Water quality in waters designated as outstanding national resources.

State

Senate Bill 610 and Senate Bill 221: Water Supply Assessments and Water Supply Verifications

Effective January 1, 2002, Senate Bill (SB) 610 and SB 221 strengthen the connection between land use decisions by cities and counties and the availability of water supply. According to Water Code Section 10912(a), projects requiring a water supply assessment under the CEQA include:

- Residential developments with more than 500 dwelling units.
- Shopping centers or business establishments employing over 1,000 people or with more than 500,000 square feet of floor space.
- Commercial office buildings employing over 1,000 people or with more than 250,000 square feet of floor space.
- Hotels or motels with more than 500 rooms.
- Industrial, manufacturing, or processing plants or industrial parks housing more than 1,000 people, occupying over 40 acres, or having more than 650,000 square feet of floor area.
- Mixed-use projects including any of the specified project types.
- Projects demanding water equivalent to or greater than that required by a 500-dwelling unit project.

A key document for complying with SB 610 is the Urban Water Management Plan that water suppliers can use to meet the requirements of SB 610.

Sustainable Groundwater Management Act

On September 16, 2014, California Governor Jerry Brown signed a three-bill legislative package, AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), known collectively as the SGMA. This legislation requires governments and water agencies managing high- and medium-priority groundwater basins to stop overdraft and achieve balanced levels of groundwater pumping and recharge.

Key points of SGMA include:

- Achieving sustainability within 20 years of implementing sustainability plans.
- Critically overdrafted basins must reach sustainability by 2040.
- Other high- and medium-priority basins must achieve sustainability by 2042.

The California Department of Water Resources (DWR) supports local agencies with guidance, financial assistance, and technical help under SGMA. The act allows local agencies to form Groundwater Sustainability Agencies (GSAs) to manage basins sustainably and mandates the creation of Groundwater Sustainability Plans (GSPs) for these crucial basins. Adjudicated basins are exempt from forming GSAs or developing GSPs. However, basins considered adjudicated are exempt from developing a Groundwater Sustainability Agency or Groundwater Sustainability Plan.

California Porter-Cologne Water Quality Control Act

Beginning in 1973, the California SWRCB and its nine RWQCBs have been responsible for administering permitted discharges into California waters. The Central Coast RWQCB has jurisdiction over the project site. The Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.; 23 CCR Division 3, Chapter 15) establishes a comprehensive water quality management system to protect California waters. Under this act, anyone discharging, or proposing to discharge, waste that could affect State water quality must file a discharge report with the relevant RWQCB. The RWQCB may then set “waste discharge requirements” to control the discharge. “Waste” is broadly defined and includes various materials, including non-point source pollution.

For discharges covered by the CWA, the state treats Waste Discharge Requirements and NPDES permits as a single permitting vehicle. In April 1991, the SWRCB and other State environmental agencies became part of the California Environmental Protection Agency (CalEPA).

The RWQCB regulates urban runoff discharges under NPDES permit regulations, covering both point sources (e.g., industrial outfall discharges) and non-point sources (e.g., stormwater runoff). The RWQCB issues construction and industrial discharge permits under the NPDES program. BMPs are required as part of a SWPPP. The EPA defines BMPs as practices to prevent or reduce water pollution, including treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage (40 CFR Part 122.2).

CALGreen

CALGreen, also known as the California Green Building Standards Code, 24 CCR Part 11, aims to enhance public health, safety, and welfare by promoting environmentally friendly design and construction methods. It mandates sustainable construction practices for all-new construction and renovations of residential and non-residential buildings. This includes guidelines for site drainage design, stormwater management, and water use efficiency. In addition to these mandatory measures, CALGreen also includes a set of voluntary standards to encourage developers and local agencies to pursue higher standards of development.

California Antidegradation Policy

In 1968, the California Antidegradation Policy, formally known as the Statement of Policy with Respect to Maintaining High-Quality Water in California, was adopted by the SWRCB through State Board Resolution No. 68-16. Unlike the Federal Antidegradation Policy, the California policy applies to all State waters, including isolated wetlands and groundwater, and not just surface waters. The policy mandates that if the existing quality of a water body exceeds the quality established in individual Basin Plans, this high quality must be maintained. Discharges to such water bodies must not unreasonably affect present or anticipated beneficial uses of the water resource.

California Toxics Rule

The EPA sets water quality criteria for certain toxic substances through the California Toxics Rule. This rule establishes both acute (short-term) and chronic (long-term) standards for bodies of water, including inland surface waters, enclosed bays, and estuaries. These standards apply to waters designated by each RWQCB as having beneficial uses that protect aquatic life or human health.

California Water Code

The California Water Code identifies 22 types of districts or local agencies with specific statutory provisions for managing surface water, many of which also have authority for groundwater management. For instance, a Water Replenishment District (Water Code Section 60000 et seq.) can establish groundwater replenishment programs and collect related fees, while a Water Conservation District (Water Code Section 75500 et seq.) can impose groundwater extraction fees. Additionally, through special legislative acts, 13 local agencies have been granted enhanced authority to manage groundwater. Most of these agencies, formed since 1980, can limit water export and control in-basin extraction in cases of overdraft or potential overdraft conditions. They can also levy fees for groundwater management and water supply replenishment activities.

Assembly Bill 3030 – Groundwater Management Act

AB 3030 was passed in 1992, expanding the number of local agencies authorized to develop groundwater management plans, as well as establishing a common framework for local groundwater management across California. These agencies can have the same authority as a water replenishment district to "fix and collect fees and assessments for groundwater management" (Water Code Section 10754), contingent upon receiving majority voter approval in a local election (Water Code Section 10754.3).

Local

General Waste Discharge Requirements for De Minimis Discharges

On December 8, 2017, the Central Coast RWQCB adopted the Waste Discharge Requirements, NPDES General Permit for Discharges with Low Threat to Water Quality (Order No. R3-2017-0042, NPDES No. CAG993001). This permit regulates the discharge of groundwater and non-storm water construction dewatering waste to surface waters, including estuarine and ocean waters, that pose an insignificant threat to water quality in the Central Coast. Discharges under this permit must comply with specific discharge specifications, receiving water and groundwater limitations, as well as monitoring and reporting requirements, as detailed in the permit.

Santa Barbara County General Plan Conservation Element, Groundwater Resources Section

The Groundwater Resources Section of the Santa Barbara County General Plan Conservation Element provides background information and policy direction for conserving, developing, and utilizing groundwater resources in Santa Barbara County. The goals, policies, actions, and development standards aim to enhance the coordination of groundwater supply and land use planning within the county.

Environmental Determination:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Impact: Less Than Significant Impact

Construction

The proposed Project involves activities that could temporarily expose soils to wind and water erosion, particularly during the demolition and removal of existing concrete and pavement, as well as soil excavation for the construction of the new thermal dryer facility, which includes a Thermal Fluid Heater and Thermal Dryer, a series of pumps and conveyors, HVAC system, MCC, and related pavement and utilities. Approximately 2,160 CY of soil will be excavated, 1,760 CY of which will be reused onsite for backfill. The estimated volume of excavated soil to be disposed of off-site is 400 CY. Additionally, an equipment staging area would be created on the front lawn of WRRF, potentially exposing underlying soils.

Non-sediment-related pollutants from construction materials and non-storm water flows, such as paint, mortar, chemicals, and petroleum products, are also concerns during construction. Storm water runoff within WRRF is internally captured and treated before being discharged to the Pacific Ocean. However, runoff from the western portion of WRRF drains toward the Goleta Slough and is subject to the Santa Barbara County Storm Water Management Program, Small MS4 Permit. This permit requires a Construction Site Storm Water Runoff Control Program to prevent pollutant discharge and protect beneficial uses of receiving waters.

To comply with the MS4 Permit, the GSD's existing SWPPP would be updated to include an ESCP with BMPs. Groundwater may be encountered during construction, with dewatering required in accordance with Central Coast RWQCB Order No. R3-2017-0042, NPDES No. CAG993001, which includes effluent limitations and discharge specifications.

With adherence to the Santa Barbara County Storm Water Management Program, Small MS4 Permit, and Central Coast RWQCB discharge requirements, the proposed Project would not violate water quality standards or waste discharge requirements, nor substantially degrade surface or groundwater quality. Therefore, construction impacts on water quality would be less than significant.

Operations

Surface water quality at the project site is regulated by the Santa Barbara County Storm Water Management Program, Small MS4 Permit, that applies to areas not draining internally to the treatment and disposal system, such as the construction staging area. This area will be restored to its original condition after construction and will not be used during operations. The project design includes civil grading plans to ensure the entire project area drains to on-site stabilization basins, where water will either evaporate, or be treated and discharged, to the Pacific Ocean. Consequently, the proposed Project will not violate water quality standards or waste discharge requirements, nor substantially degrade surface or groundwater quality. Therefore, operational impacts on water quality will be less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact: Less Than Significant Impact

Groundwater Supplies

Project construction will require water for dust suppression and soil compaction, sourced either from an on-site fire hydrant or reclaimed water from the treatment plant. If potable water is used, it will be supplied by the Goleta Water District, which partially sources its water from the Central Subbasin of the Goleta Groundwater Basin. This basin is adjudicated and designated as a very low to low priority under the 2014 SGMA. The project operations will not increase water demand, ensuring that groundwater supplies are not significantly impacted. Therefore, the project will not impede sustainable groundwater management, and the impacts will be less than significant.

Groundwater Recharge

The project site, except for the western lawn area, is currently paved and impervious, making it not susceptible to groundwater recharge. These paved areas will remain unchanged after construction. The lawn area, which will be used as a construction staging area, will be restored to its original condition after construction. Therefore, the project will not significantly interfere with groundwater recharge or impede sustainable groundwater management of the basin, resulting in less than significant impacts.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. result in a substantial erosion or situation on- or off-site;

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; and

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

Impact: Less Than Significant Impact

The construction of the new thermal dryer facility will take place on existing paved areas, and the pipe installation will primarily occur within currently paved areas, with a limited portion occurring within vegetated areas. These areas will be revegetated once pipe installation is complete. Therefore, the project will not increase impervious surfaces or associated runoff. Storm water runoff within WRRF is internally captured, with civil grading plans ensuring the entire project area drains to on-site stabilization basins for treatment before discharge to the Pacific Ocean. Runoff from the western portion of WRRF drains toward the Goleta Slough.

During construction, an equipment staging area will be created on the front lawn of WRRF, temporarily increasing runoff due to grass removal. The GSD's existing SWPPP will be updated to include an ESCP with BMPs, in compliance with the MS4 Permit requirements, to manage temporary storm water runoff and prevent off-site flooding, erosion, and polluted runoff. Consequently, drainage-related impacts will be less than significant.

iv. Impede or redirect flood flows?

Impact: No Impact

Portions of WRRF, including solids stabilization basins 2 and 3 and the flow equalization basin, are within a 100-year flood hazard zone. However, none of the proposed Project construction areas fall within this flood hazard zone. Additionally, no parts of WRRF are within a Tsunami Inundation Zone.

The entire WRRF is located within a 500-year flood zone. According to Executive Order 11988, Floodplain Management, federal agencies funding or permitting critical facilities must avoid the 500-year floodplain or protect the facilities to the 500-year flood level (FEMA 2020). Although WRRF is considered a critical facility, the proposed Project does not involve federal funding or permitting, so 500-year flood protection is not required. Consequently, the proposed improvements will not impede or redirect flood flows, resulting in no impacts.

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

Impact: Less Than Significant Impact

The proposed Project improvements will not be located within a flood zone or tsunami run-up zone. Seiches, which are oscillations in an enclosed body of water caused by strong seismic activity, could affect the nearby San Pedro Creek Channel during a strong earthquake. However, the proposed Project improvements will be at least 500 feet away from the channel, with solids stabilization basins and a flow equalization basin providing a buffer. Since seiche damage typically occurs immediately adjacent to water bodies, the distance to the proposed Project components makes seiche impacts unlikely. Therefore, the release of pollutants due to project inundation is not expected, resulting in less than significant impacts.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact: Less Than Significant Impact

The proposed Project improvements will drain to on-site stabilization basins, where water will either evaporate or flow to the main pump station for treatment, before being discharged to the Pacific Ocean, in compliance with an established wastewater discharge permit (Central Coast RWQCB Order No. R3-2017-0021, NPDES No. CA0048160). Runoff from the construction staging area will be managed under the Santa Barbara County Storm Water Management Program, Small MS4 Permit, minimizing off-site water quality impacts and protecting beneficial uses, as outlined in the Central Coast RWQCB Basin Plan.

If potable water from an on-site hydrant is used for dust control and soil compaction, it will be supplied by the Goleta Water District, which sources part of its water from the Central Subbasin of the Goleta Groundwater Basin. This basin is adjudicated and designated as a very low to low priority under the 2014 SGMA. The project operations will not increase water demand. Therefore, the proposed Project will not conflict with or obstruct the implementation of a water quality control plan or a sustainable groundwater management plan, and impacts will be less than significant.

Cumulative Impacts:

Cumulative development in the Goleta Valley will incrementally contribute to hydrology and water quality impacts. However, as analyzed above, and with adherence to the applicable Objectives and Policies in the City of Goleta's and Santa Barbara County's General Plan/Local Coastal Land Use Plans, the project's contribution to these cumulative impacts will not be significant. Therefore, cumulative hydrology and water quality impacts will be less than significant.

Mitigation Measures:

No mitigation is required.

XI. Land Use and Planning

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. Land Use and Planning. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☑
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☑	☐

Existing Conditions:

GSD is located in the unincorporated area of Santa Barbara County and is southwest of the boundary of the City of Goleta. GSD is located in the Eastern Goleta Valley Community Plan area and is also within the coastal zone. The Project area is located both within the jurisdiction of the County's Local Coastal Program and the CCC appeals jurisdiction. Therefore, the proposed Project is subject to the policies of the California Coastal Act and the County's Coastal Land Use Plan. Within the Eastern Goleta Valley Community Plan, the site has a land use designation of Public Utility (UT) and zoning designation of Public Utility (PU). GSD is located primarily in an area with a mix of commercial and industrial uses; however, a small residential neighborhood is located approximately 500 feet to the northeast. The SBA is located adjacent to the facility, to the west and nearly adjacent to the north. Immediately adjacent to the facility, to the east and south, is additional space designated for public utilities, which is currently not is use (i.e., vacant lots) and which is not owned or maintained by GSD.

GSD has submitted preliminary planning applications for DVP Review, CUP, and CDP for the SHIP to the County of Santa Barbara Planning and Development Department. This MND will also support that permitting process being done in parallel with those applications.

Environmental Determination:

a) Physically divide an established community?

<u>Impact</u>: No Impact

The proposed Project would not divide an established community. The proposed Project site is already developed and part of the existing wastewater treatment plant area.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Impact: Less Than Significant Impact

The proposed Project is consistent with the purpose and intent of the Public Utilities zone and land use designation of the County of Santa Barbara. The proposed Project would be consistent with the development standards of the County's Coastal Zoning Ordinance (Article II) (County of Santa Barbara 2021b), including performance standards, height limits, and setbacks. Potentially significant impacts on biological resources and cultural resources could possibly be inconsistent with the resource protection policies of the California Coastal Act, the County's Coastal Land Use Plan, and Eastern Goleta Valley Community Plan, if they are not avoided and minimized. However, with implementation of mitigation measures for each of these issue areas, impacts would be reduced to less than significant levels, and therefore, the Project would be consistent with these policies. All potential impacts that could be found inconsistent with relevant resource protection policies have been avoided and minimized to the maximum feasible extent.

Mitigation Measures:

No mitigation is required.

XII. Mineral Resources

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Mineral Resources. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	☐	☐	☑	☐
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☑	☐

Existing Conditions:

The Project site is situated above the La Goleta Gas Field, which includes the La Goleta Natural Gas Storage Facility. There are no oil and gas wells directly on the Project site. The nearest well, an idle observation well, is approximately 350 feet south of WRRF and a part of the La Goleta Natural Gas Storage Facility. This facility, managed by Southern California Gas Company, utilizes the porous sandstone of the Vaqueros Formation at an average depth of 4,200 feet for natural gas storage. Originally discovered in 1929, the La Goleta Gas Field was found to contain only natural gas, not oil. The Vaqueros Formation allows for the cyclical injection and withdrawal of natural gas, which is sealed by the overlying Rincon Formation shale. The facility includes natural gas injection wells, native gas wells, and observation wells (CalGEM 2024, SoCalGas 2021).

Pursuant to the California Surface Mining and Reclamation Act (SMARA) of 1975, the State Geologist classifies land into mineral resource zones. The goal is to prevent important mineral resources from becoming inaccessible due to poor land use decisions. The Project site is designated as Mineral Resource Zone 3 (MRZ-3), indicating the presence of mineral deposits whose significance cannot be evaluated with the available data.

Regulatory Setting:

The California SMARA was established to promote the conservation of the State's mineral resources and ensure that lands are adequately reclaimed after mining. Under SMARA, the State Geologist classifies land into four categories, based on mineral resource potential:

- MRZ-1: Areas with no significant mineral resources.
- MRZ-2: Areas with identified significant mineral resources.
- MRZ-3: Areas with undetermined mineral resource significance.
- MRZ-4: Areas with unknown mineral resource significance.

These classifications are crucial for land use planning. If an area has known significant mineral resources, it might affect project approvals to ensure those resources remain available for extraction. For a mineral deposit to be classified as significant, it must meet criteria related to marketability and value. These criteria vary based on whether the minerals are strategic or non-strategic, their uniqueness, and their commodity type (metallic, industrial, or construction).

The State Geologist's classification reports are submitted to the State Mining and Geology Board, that then forwards the information to local governments. These governments must incorporate the reports and maps into their general plans for consideration when making land use decisions.

Methodology:

The following analysis evaluates the existing environmental and regulatory settings to determine if the proposed Project would significantly impact mineral resources. For a mineral deposit to be classified as significant, it must meet marketability and threshold value criteria set by the California State Mining and Geology Board.

Environmental Determination:

a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

Impact: Less Than Significant Impact

Given that the nearest idle observation well is approximately 350 feet south of WRRF, the proposed Project would not impact the operations of the La Goleta Natural Gas Storage Facility. Additionally, the Project site is classified as MRZ-3, or an area containing mineral deposits the significance of which cannot be evaluated from available data. Therefore, the proposed Project would not lead to the loss of a known valuable mineral resource, resulting in less than significant impacts.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Impact: Less Than Significant Impact

Similarly, the proposed Project would not lead to the loss of availability of a locally important mineral resource recovery site as identified in any local general plan, specific plan, or other land use plan. Therefore, the impacts would be less than significant.

Mitigation Measures:

No mitigation is required.

XIII. Noise

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. Noise. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

Environmental Setting:

GSD is located adjacent to the SBA, south of the main east-west runway and east of the north-south runways. Airport noise contour maps in the SBA – Aircraft Noise Analysis (June 2024) show that the Project site is outside of the airport planning boundary/influence area.

The nearest residences are at least 1,600 feet from the proposed Project site. In addition, the Rancho Goleta mobile home park is located on the east side of Highway 217, with the closest residential mobile homes located approximately 2,300 feet from the Project site.

Noise Background

Sound is caused by vibrations that generate waves of minute air pressure fluctuations in the air. Air pressure fluctuations that occur from 20 to 20,000 times per second can be detected as audible sound. The number of pressure fluctuations per second is normally reported as cycles per second or Hertz. Different vibrational frequencies produce different tonal qualities for the resulting sound. Sound level data is typically presented in terms of dB (decibel) values; dB scales are a logarithmic index based on ratios between a measured value and a reference value. In the field of atmospheric acoustics, dB scales are based on ratios of the actual pressure fluctuations generated by sound waves compared to a standard reference pressure value. Human hearing varies in sensitivity for different sound frequencies. Several different frequency weighting schemes have been developed to approximate the way the human ear responds to noise levels or to account for the response of building materials to airborne vibrations and sound. The "A-weighted" decibel scale (dBA) is normally used to approximate human hearing response to sound.

Varying noise levels are often described in terms of the equivalent constant dB level. Equivalent noise levels (L_{eq}) are used to develop single-value descriptions of average noise exposure over various periods of time. Such average noise exposure ratings often include additional weighting factors for annoyance potential, due to time of day or other considerations. The L_{eq} data used for these average noise exposure descriptors are generally based on A-weighted sound level measurements, although other weighting systems are used for special conditions (such as blasting noise).

In determining the daily measure of community noise, it is important to account for the difference in human response to daytime and nighttime noise. Noise is more disturbing at night than during the day, and noise indices have been developed to account for the varying duration of noise events over time, as well as community response to them. The Community Noise Equivalent Level (CNEL) adds a 5-dB penalty for noise occurring in the evening (i.e., 7:00 p.m. to 10:00 p.m.) and a 10-dB penalty for nighttime noise (i.e., 10 p.m. to 7 a.m.) (Caltrans 2020, FTA 2018).

Regulatory Setting:

The Santa Barbara County Environmental Thresholds and Guidelines Manual has defined the following thresholds of significance for assisting in the determination of significant noise impacts:

- If existing exterior noise levels, including at outdoor living areas, experienced by sensitive receptors is below 65 dBA CNEL, and if the proposed Project will generate noise that will cause the existing noise levels experienced by the sensitive receptors to exceed 65 dBA CNEL – either individually or cumulatively, when combined with other noise-generating sources – then the proposed Project is presumed to have a significant impact.
- If existing exterior noise levels, including at outdoor living areas, experienced by sensitive receptors exceeds 65 dBA CNEL, and if the proposed Project will generate noise that will cause the existing noise levels experienced by the sensitive receptors to increase by 3 dBA CNEL – either individually or cumulatively, when combined with other noise-generating sources – then the proposed Project is presumed to have a significant impact.
- If existing noise levels experienced by sensitive receptors in interior livings areas is below 45 dBA CNEL, and if the proposed Project will generate noise that will cause the existing noise levels experienced by the sensitive receptors in interior living areas to exceed 45 dBA CNEL – either individually or cumulatively, when combined with other noise-generating sources – then the proposed Project is presumed to have a significant impact.
- If existing noise levels experienced by sensitive receptors in interior livings areas exceeds 45 dBA CNEL, and if the proposed Project will generate noise that will cause the existing noise levels experienced by the sensitive receptors in interior living areas to increase by 3 dBA CNEL – either individually or cumulatively, when

combined with other noise-generating sources – then the proposed Project is presumed to have a significant impact.

- Noise from grading and construction activity proposed within 1,600 feet of sensitive receptors, including schools, residential development, commercial lodging facilities, hospitals, or care facilities, would generally result in a potentially significant impact. According to EPA guidelines, average construction noise is 95 dBA at a 50 feet distance from the source. A 6 dB drop occurs with a doubling of the distance from the source. Therefore, locations within 1,600 feet of the construction site would be affected by noise levels over 65 dBA. To mitigate this impact, construction within 1,600 feet of sensitive receptors shall be limited to weekdays between the hours of 8 a.m. to 5 p.m. only. Noise attenuation barriers and muffling of grading equipment may also be required. Construction equipment generating noise levels above 95 dBA may require additional mitigation.

Additionally, the Santa Barbara County Municipal Code Chapter 40, Section 40-2, limits nighttime noise to 60 dBA at 100 feet from the property line of the property upon which the sound is broadcast.

Methodology:

The screening-level noise analysis for Project construction was completed based on methodology developed by the USDOT Federal Highway Administration (FHWA) at the John A. Volpe National Transportation Systems Center and other technical references consistent with CalEEMod outputs for equipment utilization. The USDOT FHWA methodology uses actual noise measurement data collected during the Boston "Big Dig" Project (1991-2006) as reference levels for a wide variety of construction equipment in common use, including equipment anticipated for use constructing the proposed Project.

The FHWA noise model provides relatively conservative predictions because it does not account for site-specific geometry, dimensions of nearby structures, and local environmental conditions that can affect sound transmission, reflection, and attenuation. As a result, actual measured sound levels at receptors may vary somewhat from predictions, typically lower. Additionally, the impacts of noise upon receptors (persons) are subjective because of differences in individual sensitivities and perceptions.

Noise impacts were evaluated against community noise standards contained in the Santa Barbara County Environmental Thresholds and Guidelines Manual and Municipal Code.

Environmental Determination:

a) Generation of substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?

Impact: Less Than Significant Impact

Construction:

During construction activities, the Project would generate noise due to operation of off-road equipment, portable equipment, and vehicles at or near the Project site. Most noise would occur during the demolition, site preparation, trenching, and building construction when heavy equipment would be operating.

The Santa Barbara County Municipal Code Chapter 40, Section 40-2 limits nighttime noise to 60 dB 100 feet from the property boundary; however, construction will not occur during nighttime hours (10 p.m. to 7 a.m.). The County of Santa Barbara Environmental Thresholds and Guidelines Manual states: “In the planning of land use, 65 dBA Day-Night Average Sound Level is regarded as the maximum exterior noise exposure compatible with noise-sensitive uses unless noise mitigation features are included in project designs.”

The nearest sensitive receptor is at least 1,600 feet from the proposed Project site. Based on methodology explained above, and the construction equipment in Table 2-3, using FHWA default noise generation for the type of equipment and load factors from CalEEMod, the aggregated construction noise is not expected to exceed 65 dBA threshold at the closest residential receptors. The resulting estimated noise levels are shown in Table 3-18. Furthermore, temporary construction noise would be limited to the daylight hours and would permanently cease upon completion of construction. Therefore, temporary impacts on ambient noise levels during construction would be less than significant.

Table 3-18: Noise Impacts from Construction

Phase #[a]	CalEEMod Construction Phases[a]	Modeled Noise Level (L_{eq} dBA)	Significance Threshold (CNEL dBA)[b]	Exceeds Threshold (Yes/No)?
1	Demolition	56	65	No
2	Site Preparation	55	65	No
3	Linear, Drainage, Utilities & Sub-Grade	59	65	No
4	Building Construction A	53	65	No
5	Building Construction B	51	65	No
7	Architectural Coating	46	65	No

a. No offroad equipment will be used during phases 6 and 8.

b. Santa Barbara County Environmental Thresholds and Guidelines Manual (2021).

During operation, the proposed Project would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project. Any nominal increase in operational noise from rotating equipment, such as pumps and fans, would be undetectable at the closest receptors, due to the 1,600 feet attenuation distance. Thus, impacts would be less than significant.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Impact: Less Than Significant Impact

During construction activities, the project would generate noise and vibration due to operation of off-road equipment, portable equipment, and vehicles at or near the project site. No strong sources of vibrations (e.g., hard rock-breaking, large pile-driving) are planned to be used during the construction of the project. FTA has published standard vibration velocities for construction equipment operations. The types of construction vibration impacts include human annoyance and building damage. Building damage can be cosmetic or structural. Generally, a peak particle velocity (PPV) vibration threshold of approximately 0.3 in/sec is sufficient to avoid physical damage to engineered structures and 0.2 for non-engineered timber and masonry buildings (FTA 2018). Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. A vibration threshold of 0.2 PPV, which corresponds to “annoying”, is typically used as the significance threshold.

No substantial ground vibrations would be transmitted off-site due to the 1,600 feet attenuation distance to the closest off-site receptors. The PPV at nearest receptors would be well below the FTA threshold of 0.2 in/sec for physical damage to non-engineered timber and masonry buildings and human annoyance. Therefore, no strong ground-borne vibrations are expected to be generated that could affect nearby structures or be noticeable to their occupants and impacts would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport would the project expose people residing or working in the project area to excessive noise level?

Impact: No Impact

Airport noise contour maps in the Santa Barbara Municipal Airport – Aircraft Noise Analysis (June 2024) show that the Project site is outside of the airport planning boundary/influence area; therefore, no impact would be expected.

Mitigation Measures:

No mitigation is required.

XIV. Population and Housing

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. Population and Housing. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Existing Conditions:

GSD currently operates WRRF with a permitted wastewater throughput capacity of 9.6 MGD. Currently, GSD has 35 employees, of which about half operate the WRRF.

Environmental Determination:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Impact: No Impact

The proposed Project would not induce population growth in the Project area. There is only one additional employee expected as a result of the Project. The proposed Project will not increase the permitted capacity of WRRF and, hence, will not influence population growth. Additionally, the proposed Project will be located at the existing facility and would not require extension, or increase the capacity, of existing off-site infrastructure. The proposed Project would not stimulate population growth, as there will be only one new employee associated with the Project. Therefore, no impact on population growth would be generated by the proposed Project.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impact: No Impact

The proposed Project would not displace existing housing or people, necessitating the construction of replacement housing elsewhere. No housing currently exists on the site, and all proposed Project improvements are within the current WRRF property. No impact would occur.

Mitigation Measures:

No mitigation is required.

XV. Public Services

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Public Services. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	☐	☐	☐	☑
Fire protection?	☐	☐	☐	☑
Police protection?	☐	☐	☐	☑
Schools?	☐	☐	☐	☑
Parks?	☐	☐	☐	☑
Other public facilities?	☐	☐	☐	☑

Existing Conditions:

Fire protection services are provided to GSD by the Santa Barbara County Fire Department. The nearest responder to the site is County Fire Station #12, located at 5330 Calle Real, Goleta, CA 93111, about 4 miles from the facility. The Santa Barbara County Sheriff's Office, located at 4434 Calle Real, is about 4 miles from the facility.

The nearest park is Goleta Beach Park, about 1,300 feet from the facility.

Environmental Determination:

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire Protection?

Police Protection?

Schools?

Parks?

Other Public Facilities?

Impact: Less Than Significant Impact

The proposed Project would not result in significant adverse impacts on fire protection. Fire protection services are provided by the Santa Barbara County Fire Department. The nearest responder to the proposed Project site is County Fire Station #12, located at 5330 Calle Real, Goleta, CA 93111, about 4 miles from the proposed Project site. The proposed Project would not result in an increase in residential units and population size and would, therefore, not affect response times.

The proposed Project would not result in a net increase of residential units or employment opportunities that could increase population and, therefore, would not result in a population increase within the service area, negating the need for a new police station or improvements to the existing police station servicing the area.

The proposed Project would not result in substantial adverse impacts to existing schools or necessitate the need for new schools. The proposed Project adds only one new employee, so there would be no demand for additional public services and facilities such as schools.

The proposed Project would not result in impacts to existing parks, and since there is no substantial increase in population associated with the Project (i.e., only one new employee is expected as a result of the proposed Project), it will not necessitate the need for new parks. There is no impact to fire protection facilities, police facilities, schools, or parks.

The proposed Project improves the existing WRRF. No adverse impacts to other public facilities would be generated by the proposed Project.

Mitigation Measures:

No mitigation is required.

XVI. Recreation

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Recreation.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

Existing Conditions:

No recreation facilities are located within or near the GSD facility, and none are included in the proposed Project. The Goleta Beach Park is located 1,300 feet south of WRRF.

Environmental Determination:

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Impact: No Impact

Implementation of the proposed Project would not alter the use of nearby recreational facilities. There is only one new employee associated with the Project, and the proposed Project only includes improvements within the boundaries of the current facility. Therefore, there would be no impacts to recreation or parks.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impact: No Impact

The proposed Project would not require the construction or expansion of recreational facilities. Therefore, there would be no impact.

Mitigation Measures:

No mitigation is required.

XVII. Transportation

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. Transportation. Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☑	☐
b) Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	☐	☐	☑	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
d) Result in inadequate emergency access?	☐	☐	☐	☑

Existing Conditions:

Currently, GSD has 35 employees, of which about half operate WRRF.

Environmental Determination:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Impact: Less Than Significant Impact

Vehicles associated with construction of the Project would use regional and local roadways to access the Property. Vehicle trips would consist of required construction material or equipment deliveries and construction worker trips. Construction trips are temporary and should be considered less than significant compared to existing area traffic, which includes airport traffic. There is no substantial long-term increase in traffic, as only one new permanent employee is expected as a result of the proposed Project. Additionally, sludge hauling would be reduced from one truck a day, 7 days a week, to a maximum of two trucks per week. Impacts will be less than significant.

b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?

Impact: Less Than Significant Impact

Since only one new employee is expected as a result of the proposed Project, there is no significant long-term impact on VMT, and this Project does not conflict with, nor is it inconsistent with, CEQA Guidelines Section 15064.3(b). Additionally, the produced sludge is currently hauled to Liberty Composting facility in Lost Hills, CA, which is approximately 184 miles from the GSD facility. As a result of the proposed Project, sludge hauling would be reduced from one truck a day, 7 days a week, to a maximum of two trucks per week. The pelletized product may be sent to a local end-user; however, for VMT analysis purposes, in order to be conservative, it is assumed that dried pellets would continue to be sent to the same location (i.e., Liberty Composting facility in Lost Hills, CA). As such, the Project would result in a reduction of VMT and will therefore a have less than significant impact.

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

Impact: No Impact

There will be no new roadway design features or expected incompatible uses. There will be no impact on transportation hazards.

d) Result in inadequate emergency access?

Impact: No Impact

There are no changes which will alter the efficacy of emergency access. There is no impact from this Project.

Mitigation Measures:

No mitigation is required.

XVIII. Tribal Cultural Resources

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. Tribal Cultural Resources.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☑	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code §5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☑	☐	☐

Existing Conditions:

Ethnohistoric Context

When the Spanish arrived in the Santa Barbara region in 1542, they encountered the inhabitants of the area, now collectively known as the Chumash, consisting of a set of related ethnolinguistic groups. The area the Chumash inhabited at the time extended from Morro Bay to Malibu; the islands within the Santa Barbara Channel; inland to the South Coast Range and the northwest Transverse Range, including areas like the Santa Ynez River Valley, the Carrizo Plain, the Cuyama Valley, and the San Emigdio Hills. The language spoken by the inhabitants is considered an isolate, distinct from neighboring languages such as Salinan, Yokuts, Kitanemuk, Tataviam, and Gabielino-Tongva (Goddard 1996).

The Chumash exhibited significant internal linguistic diversity, with various regional dialects that were not always mutually intelligible. The names of different Chumash groups often reflect their associations with Mission territories. For example, the Obispeño in the north were distinct from the Central Chumash, which included the Purisimeño, Ynezeño, Barbareño, and Ventureño. These groups spoke languages different from those of the Island Chumash on the northern Channel Islands. Historical records further detail the internal diversity within these groups, identifying dialects such as Emigdiano, Castec, Matilija, Mugu, and Malibu among the Central Chumash, and Cruzeño, Roseño, and Migueleño among the Island Chumash (Kroeber 1925; Grant 1978a, 1978b; Golla 2011). The Goleta Lagoon area was historically occupied by Barbareño Central Chumash speakers, now represented by the Barbareño/Ventureño Band of Mission Indians.

Current knowledge of the Chumash people at European contact comes from various in-depth written accounts. The earliest sources are Spanish explorers like Cabrillo in 1542 and Vizcaíno in 1602 (Wagner 1929; Brown 1967). These observations were expanded by accounts from early efforts to establish evangelical missions in Alta California, notably by Portolá in 1769, de Anza in 1776, and Garcés in 1776 (Coues 1900; Bolton 1927; Gamble 2008; Priestley 1937). Further details came from mission administrators' records over about 60 years (Engelhardt 1908, 1913, 1929; Geiger 1969; Geiger and Meighan 1976; Johnson 1988, 1982). Later, Euroamerican interest allowed Native American perspectives to be documented, particularly through ethno-historic records of Chumash beliefs, folk tales, music, customs, and lifeways (Blackburn 1975; Hudson et al. 1981; Harrington 1942). This documentation forms the richest body of information about the Chumash.

The written records and accounts of Chumash life provide invaluable information for archaeologists. These records detail what the Chumash people ate, how they acquired food, and how they created and used various elements of material culture (Hudson and Blackburn 1983, 1979, 1985, 1986). They also offer insights into the Chumash's understanding of the landscape, including knowledge of local plants and animals, as well as techniques for managing the environment. Additionally, these accounts describe the structure of Chumash social life, including perceptions and negotiations of hierarchy and power.

Ethnohistories provide a rich account of Chumash social hierarchy, including ideas about money, exchange, and territory, and how the management and manipulation of these elements contributed to social power structures.

Since the 1980s, the body of knowledge about the Chumash has been a major focus for archaeologists, particularly in the Santa Barbara Channel area. Researchers have been keen to explain the evolution of the social and political complexity observed in Chumash ethnohistoric records (C.D. King 1976; L.B. King 1969). They study how the Chumash acquired and controlled resources, and how these resources were moved across different environments, such as the islands, mainland coast, and interior. Archaeologists strive to examine the transportation of goods and services within the Chumash cultural sphere and between the Chumash and neighboring regions like the Central Valley, Sierra Nevada, South Coast, and Desert Interior. Detailed ethnographic records describe market-based exchanges, the use of shell-bead money, inflation control, intermediaries in inter-group exchanges, trading parties, and the types of goods transported from different areas. These details are crucial for interpreting the archaeological record and designing research (Gamble 2008; C.D. King 1976; Johnson 1988, 1982).

Synthetic accounts of the ethnographic record sometimes provide insights into expected archaeological patterns within the Chumash interaction sphere. The focus on the evolution of complex society in the Chumash world has dominated archaeological research for several decades. Consequently, most studies have concentrated on the late prehistoric record and the development of aspects of Chumash life observed or recorded by Europeans. However, researchers must be cautious about the influence of ethnographers' interpretations, including the historical context of their observations (Haley and Wilcoxon 1997, 1999; Gill, Fauvelle, and Erlandson 2019). Contemporary re-analysis of these historical observations can lead to new insights and directions in archaeological research.

Regulatory Setting:

Assembly Bill 52

AB 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that TCRs must be considered under CEQA and provided for additional Native American consultation requirements for the lead agency. PRC Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American tribe. A TCR is:

- On the CRHR or a local historic register;
- Eligible for the CRHR or a local historic register; or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1.

AB 52 formalizes the lead agency tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the Project area, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a Negative Declaration, MND, or EIR.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects on TCRs, the consultation shall include those topics [PRC Section 21080.3.2(a)]. The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted [PRC Section 21082.3(a)].

Environmental Determination:

Native American Heritage Commission Sacred Land Files Request

A search of the Native American Heritage Commission's (NAHC's) Sacred Land File was requested on April 13, 2020, and was conducted on April 14, 2020 by Sarah Fonseca, Cultural Resource Analyst, to determine the presence of any Native American cultural resources within the proposed Project site (see Confidential Appendix F).

Assembly Bill 52 Consultation

The Project is subject to compliance with AB 52 (PRC Section 21074), which requires consideration of impacts to TCRs as part of the CEQA process and that the lead agency notify California Native American tribal representatives (that have requested notification) who are traditionally or culturally affiliated with the geographic area of the proposed Project.

Results:

Native American Heritage Commission Sacred Land Files Request

The Sacred Land File search results were positive for known Native American heritage resources within the proposed Project site. The NAHC identified nine Native American individuals who potentially have specific knowledge on the cultural resources identified within the Project site that could be at risk.

Assembly Bill 52 Consultation

GSD sent notification letters via regular certified mail on July 25, 2024, to those California Native American tribes who have previously requested formal notification of proposed projects under the agency's jurisdiction. These tribes include the Santa Ynez Band of Chumash Indians (SYBCI), the Barbareño Band of Chumash Indians (BBCI) and the Barbareño Ventureño Band of Mission Indians (BVBMI) (see Confidential Appendix F). Follow-up phone calls to ensure receipt of notification were made on August 8 and 22, 2025.

One tribe, the BBCI, responded to the notification letters to make the following statement, "Thank you for the information. I would like to recommend a cultural monitor for this project. As we know, the area has the potential to reveal cultural materials." Based on this communication, the formal consultation process between GSD and the BBCI was formally closed. Based on a lack of response, formal consultation between GSD and the SYBCI and the BVBMI was formally closed. Communication that has occurred in support of the AB 52 Tribal consultation process is summarized in Table 3-19.

Table 3-19: Native American Consultation Summary

Contact Name	Contact Dates/Method	Response	Date Consultation Closed
SYBCI, Kenneth Kahn, Chairperson	July 25, 2024: Letter to Kenneth Kahn; signed certified confirmation receipt of delivery on file	No response. Follow-up phone calls to ensure receipt of notification were made on August 8 and 22.	August 31, 2024
BVBMI, Matthew Vestuto, Chair	July 25, 2024: Letter to Matthew Vestuto; signed certified confirmation receipt of delivery on file	No response. Follow-up phone calls to ensure receipt of notification were made on August 8 and 22.	August 31, 2024
BBCI, Eleanor Arrellanes	July 25, 2024: Letter to Eleanor Arrellanes; signed certified confirmation receipt of delivery on file	Ms. Arrellanes responded via email on August 1, 2024 with the following recommendation, "Thank you for the information. I would like to recommend a cultural monitor for this project. As we know, the area has the potential to reveal cultural materials." Ms. Arrellanes considered communication with the District on August 1, 2024 sufficient and agreed to closure of consultation.	August 1, 2024

a) ***Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:***

   i. ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)***

Impact: Less Than Significant with Mitigation Incorporated

The proposed Project site exists within the archaeological site CA-SBA-46, a site with both historic and prehistoric components and the location of the former Barbareño Chumash village Helo'. This site has been studied by archaeologists at length both prior to and after a large portion of the site was used to infill the Goleta Slough in preparation for what was then a navy airport (now Santa Barbara Municipal Airport). Despite the disturbance, intact cultural deposits have been identified in the last 80 years. Although not formally listed on either the CRHR or the National Register of Historic Resources, the site meets the criteria of historically or culturally significant pursuant to PRC Section 5024.1(g).

Based on the proposed ground disturbing activities, the Project would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5, as the proposed activities would materially alter in an adverse manner those physical characteristics of the historical resource that convey its eligibility for inclusion in the CRHR. Previous archaeological testing and excavation efforts have identified intact deposits within the proposed Project's general area. Archaeological testing and excavations conducted in the past 30 years at CA-SBA-46 include a facility-wide significance evaluation undertaken in 1985 by SRS. The results of the survey identified the integrity and variability of remaining cultural deposits within CA-SBA-46 and categorized the variability into five density levels: Level I – 30,140.0 grams per cubic meter; Level II – 1,242.9 grams per cubic meter; Level III – 229.3 grams per cubic meter; Level IV – 34.1 grams per cubic meter; and Level V – no A Horizon present. Generally, the highest densities of shellfish, animal bone, stone tools, waste flake debitage, and stone tools were found in the southeastern corner of the GSD WRRF and extremely low densities in the western portion of the GSD WRRF.

The proposed Project elements would exist within an area that has been verified as having cultural material present within intact native soils and in an area that does not have enough data to determine the potential of intact cultural deposits to exist. During the preliminary design stage of the proposed Project, the locations of proposed pipelines were adjusted to stay aligned with previously disturbed areas. The proposed Project redesign would avoid the potential for disturbing areas of CA-SBA-46 with known high diverse densities of cultural resources identified during the previous significance evaluation (SRS 1985) as well as the previous data recovery mitigation excavations conducted in the 1980s through 1990s. However, there still remains the possibility of encountering concentrations of cultural remains within areas of moderate, low, or no cultural materials, as well as inadvertently encountering isolated artifacts or human remains within previously disturbed soils. In the event that unanticipated archaeological resources are encountered during Project implementation, impacts to these resources could be potentially significant.

The mitigation measures in Section 3.5.2 have been created to minimize impacts to cultural resources to less than significant. Implementation of MM-CUL-1 would ensure exploratory excavations and if necessary data recovery efforts in areas of high to moderate density and variability possessing data potential capable of providing information about the prehistoric and historic periods in this area; MM-CUL-2 would establish a program of treatment and mitigation in case of an inadvertent discovery of cultural resources during ground-disturbing phases and provide for the proper identification, evaluation, treatment, and protection of any cultural resources throughout the duration of the proposed Project; MM-CUL-3 would ensure the preparation and implementation of a WEAP; MM-CUL-4 would ensure that a qualified archaeologist is retained to monitor all initial ground disturbing activities and to respond to any inadvertent discoveries during Project construction; and MM-CUL-5 would ensure the proper treatment and protection of any inadvertent discovery of cultural resources, including human remains and burial artifacts, and that all construction work occurring within 50 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology, can evaluate the significance of the find. Thus, potentially significant impacts to archaeological resources would be reduced to less than significant levels with MM-CUL-1 through MM-CUL 5 incorporated.

ii. ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

Impact: Less Than Significant with Mitigation Incorporated

The Project is subject to compliance with AB 52 (PRC Section 21074), which requires consideration of impacts to TCRs as part of the CEQA process and requires lead agencies to provide notification of proposed projects to California Native American tribal representatives that have requested such notifications. Through tribal consultation and cultural resource investigations, TCRs have been identified within the proposed Project site. The following cultural mitigation measures (Section 3.5.2) and TCR mitigation measures (Section 3.5.4) have been created in consultation with interested tribes to minimize impacts to TCRs to less than significant. Implementation of MM-TCR-1 would ensure involvement of consulting tribe(s) in the WEAP training of all Project personnel to ensure awareness of the appropriate procedures and protocols they must follow in the event tribal cultural resources are inadvertently discovered; MM-TCR-2 would ensure that consulting tribe(s) are retained to monitor all initial ground disturbing activities and archaeological excavations; and MM-TCR-3 would ensure the proper treatment and protection of any inadvertent discovery of TCRs. Additionally, implementation of MM-CUL-2 would establish a program of treatment and protection in the case of an inadvertent discovery of human remains throughout the duration of the proposed Project; MM-CUL-3 would ensure the preparation and implementation of a WEAP to ensure all Project personnel are aware of the appropriate procedures and protocols they must follow in the event human remains are inadvertently discovered; MM-CUL-4 would ensure that a qualified archaeologist is retained to monitor all initial ground disturbing activities and to respond to any inadvertent discoveries during Project construction; and MM-CUL-5 would ensure the proper treatment and protection of any inadvertent discovery of human remains and burial artifacts. Thus, potentially significant impacts to TCRs would be reduced to less than significant levels with MM-TCR-1 through MM-TCR-3 incorporated in concert with the implementation of MM-CUL-1 through MM-CUL-5.

Cumulative Impacts:

Cumulative impacts on TCRs consider whether impacts of the proposed Project together with other related projects identified within the vicinity of the Project site, when taken as a whole, substantially diminish the number of TCRs within the same or similar context. Cumulative projects may require extensive excavation in tribally/culturally sensitive areas and thus may result in adverse effects to known or previously unknown inadvertently discovered TCRs. There is the potential for accidental discovery of other TCRs by the proposed Project or by cumulative projects. Because all significant TCRs are unique and non-renewable, all adverse effects or negative impacts contribute to a dwindling resource base. Through implementation of MM-CUL-1 through MM-CUL-5 and MM-TCR-1 through MM-TCR-3, the project-level impact to TCRs would be reduced to less than significant.

Other individual projects occurring in the vicinity of the Project site would also be subject to the same CEQA requirements as the proposed Project, and any impacts to TCRs would be mitigated, as applicable. These determinations would be made on a case-by-case basis, and the effects of cumulative development on TCRs would be mitigated to the extent feasible in accordance with CEQA, AB 52, and other applicable legal requirements. Therefore, impacts on archaeological resources would not be cumulatively considerable with mitigation incorporated (MM-CUL-1 through MM-CUL-5 and MM-TCR-1 through MM-TCR-3).

Mitigation Measures:

Please refer to Section 3.5.5 to review the TCR mitigation measures. After implementation of Mitigation Measures MM-CUL-1 through MM-CUL-5 (Section 3.5.2) and MM-TCR-1 through MM-TCR-3 (Section 3.5.4), impacts to TCRs would be less than significant.

XIX. Utilities and Service Systems

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. Utilities and Service Systems. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☑	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☑
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☑	☐	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☑	☐	☐

Existing Conditions:

The Goleta Water District is responsible for supplying water within the City of Goleta and for ensuring that the delivered water quality meets applicable California Department of Health Services standards for drinking water. Reclaimed water produced at the GSD WRRF is used for all irrigation, plant processes, and the fire suppression system. The proposed Project site is in a developed area of Santa Barbara County, which contains an existing storm water collection and conveyance system.

Regulatory Setting:

This regulatory setting section focuses on the regulations dealing with solid waste, because that subtopic in this section was found to have the greatest potential for impacts. Water quality relations are discussed in Section 3.4.X.

State

Integrated Solid Waste Management Act of 1989 or Assembly Bill 939

Pursuant to the California Integrated Solid Waste Management Act of 1989, all jurisdictions in California are required to reduce the amount of solid waste disposed in landfills. AB 939 required a reduction of 25% by 1995 and 50% by 2000. Contracts that include work that will generate solid waste, including construction and demolition debris, have been targeted for participation in source reduction, reuse, and recycling programs. The project proponent is urged to manage solid waste generated by the work to divert waste from disposal in landfills (particularly Class III landfills) and maximize source reduction, reuse, and recycling of construction and demolition debris.

Public Resources Code Section 41820.5 through 41822

PRC Sections 41820.5 through 41822 require jurisdictions to submit a report to the California Department of Resources Recycling and Recovery (CalRecycle) summarizing their progress in reducing solid waste. The report must contain a variety of information, such as calculations of annual disposal reduction, a summary of progress made in implementing the source reduction, recycling element, and household hazardous waste element, as well as other information relevant to waste reduction and diversion.

Senate Bill 1383

SB 1383, approved November 3, 2020, and effective January 1, 2022, establishes targets to achieve a 50% reduction in the level of the Statewide disposal of organic waste by 2020 and a 75% reduction by 2025. The law provides CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets; it also establishes an additional target of no less than 20% of edible food that is currently disposed of to be recovered for human consumption by 2025.

Assembly Bill 341

Since the passage of AB 939, diversion rates in California have reached approximately 65%, the Statewide recycling rate is approximately 50%, and the beverage container recycling rate is approximately 80%. In 2011, the State passed AB 341, which established a policy goal that a minimum of 75% of solid waste must be reduced, recycled, or composted by the year 2020. The State provided the following strategies to achieve that 75% goal:

- Moving organics out of the landfill;
- Expanding the recycling/manufacturing infrastructure;
- Exploring new approaches for State and local funding of sustainable waste management programs;
- Promoting State procurement of post-consumer recycled content products; and

- Promoting extended producer responsibility.

To achieve these strategies, the State recommended legislative and regulatory changes, including mandatory organics recycling, solid waste facility inspections, and revised packaging. With regard to construction and demolition, the State recommended an expansion of CALGreen standards that incentivize green building practices and increase diversion of recoverable construction and demolition materials. Current standards require 65% waste diversion on most construction and some renovation projects. The State also recommends promotion of the recovery of construction and demolition materials suitable for reuse, compost, or anaerobic digestion before residual wastes are considered for energy recovery.

Local

The Santa Barbara County Environmental Health Services Department is the Local Enforcement Agency (LEA) for CalRecycle (County 2022a). The Santa Barbara County Code of Ordinances (County 2022b) Chapter 17 Section 23 says: "To assist the county in maintaining compliance with AB 939: the Integrated Waste Management Act which requires the diversion of at least fifty percent of all waste generated, the county specifically requires fifty percent of all construction and demolition waste to be recycled" (Ordinance 4689, Section 1).

Environmental Determination:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Impact: Less than Significant

The proposed Project enhances digestion capacity, but it does not involve the relocation of WRRF or creation of a new WRRF. The proposed Project does not require additional or relocated storm water drainage infrastructure. Development of the proposed Project site is not anticipated to increase the volume or velocity of storm water runoff from the site. The proposed Project does not impact telecommunications facilities or natural gas facilities.

The facility will remain tied into the local electrical utilities in order to maintain facility functions. Impacts to the electrical utility system in general are minimal and will not require significant relocation of, or creation of new, electric utilities, excluding changes on-site. As such, the potential impacts of the Project on wastewater and water treatment facilities would be less than significant.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Impact: No Impact

The proposed Project has no impact on water supplies. Water distribution infrastructure is already in place on and around the proposed Project site. The proposed changes to GSD's facility would not require additional potable water. Reclaimed water produced on-site is used for plant processes and for on-site irrigation. One permanent personnel will be added as a result of the proposed Project. Furthermore, GSD will comply with local, regional, and State water conservation policies and must follow standard BMPs to reduce water consumption. Therefore, there are no impacts to local water resources.

c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Impact: No Impact

In this case, the proposed Project is at the regional wastewater treatment plant. The Project is not expected to have any impact on the volume of water received by GSD, and implementation of the proposed Project would not affect the capacity of the GSD facility. Therefore, there are no impacts on the wastewater treatment provider in terms of water treatment demand.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Impact: Less Than Significant Impact with Mitigation Incorporated

Local ordinances require that at least 50% of construction debris be diverted from landfills, i.e., recycled or reused, and State law requires that 65% of construction debris be diverted from landfills. The Santa Barbara County Environmental Thresholds and Guidelines Manual indicates that more than 350 tons of construction-related solid waste could be considered significant. It is estimated that about 100 CY (~120 tons) of concrete or asphalt debris to be disposed off-site which is substantially less than the construction solid waste threshold from the Santa Barbara County Environmental Thresholds and Guidelines Manual of 350 tons per year. MM-UTIL-1, requires GSD to ensure that the construction contractor does not dispose of greater than 350 tons of solid waste in any California landfill. The proposed Project includes a thermal dryer facility. The addition of the thermal dryer facility will decrease the amount of sludge that will be hauled off-site and increase the quality of biosolids produced, increasing the potential for beneficial reuse of the product. Thus, impacts would be less than significant with implementation of MM-UTIL-1.

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

Impact: Less Than Significant Impact with Mitigation Incorporated

In compliance with federal, State, and local statues, more than 65% of construction debris will be diverted from landfill. MM-UTIL-1, requires GSD to ensure that the construction contractor does not dispose of greater than 350 tons of solid waste in any California landfill. The addition of the thermal dryer facility will decrease the amount of hauled sludge, and increase the quality of biosolids produced, increasing the potential for beneficial reuse of the product. The proposed Project does not directly affect compliance with SB 1383, as it is not expected to create significant new streams of organic wastes. Thus, impacts would be less than significant with implementation of MM-UTIL-1.

Cumulative Impacts:

Wastewater Treatment Plants/WRRFs have significant challenges to meet solid waste diversion requirements. The GSD WRRF produces biosolids, and the amount produced is dependent on the influent wastewater feedstock, which is not expected to change as a result of this Project. The excess soil and construction debris, as well as the minor additional amount of waste generated from Project operations, will add cumulatively to the solid waste generated by the GSD WRRF. GSD expects to meet the overall waste requirements by diverting biosolids from landfill disposal in the coming years. Currently, all biosolids are sent to Liberty Farms, where they are composted for beneficial reuse. The proposed Project will comply with federal, State, and local required and, as such, will divert more than 65% of construction debris from landfills; therefore, the construction solid waste impacts are not cumulatively considerable. The addition of the thermal dryer facility will decrease the amount of hauled sludge and increase the quality of biosolids produced, increasing the potential for beneficial reuse of the product. Additionally, only one on-site permanent personnel will be added as a result of this Project, so no significant additional solid waste streams are in need of consideration. The ongoing cumulative impacts to solid waste are less than significant, per the Santa Barbara County Environmental Thresholds and Guidelines Manual (2021), as the ongoing solid waste production is less than 40 tons per year.

Mitigation Measure:

Please refer to Section 3.5.6 for the utilities and service systems mitigation measures. After implementing Mitigation Measure MM-UTIL-1, impacts to utilities and service systems would be less than significant.

XX. Wildfire

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. Wildfire. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☑
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☑
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☑

Existing Conditions:

The proposed Project site is within the existing GSD facility, which is concrete, asphalt, and grass.

Environmental Determination:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact: No Impact

The proposed Project does not require alterations to any roads or throughways. GSD has an HMBP maintained in the California Environmental Reporting System (CERS), and although the new equipment may require alterations to the HMBP, it will not impair the effectiveness of GSD's emergency response plan.

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

Impact: No Impact

The proposed Project site is not in a designated moderate, high, or very high wildfire risk area (see the County Fire Department's website at https://sbcfire.com/project/ca-assembly-bill-38-fire-hazard-severity-zones-map/, which indicates Assembly Bill 38 would not apply to the GSD WRRF site and a defensible space inspection would not be required). The site is relatively flat and accessible, such that the proposed Project would not contribute to the potential for uncontrolled spread of wildfire. The site is mostly free of vegetation and is adjacent to the paved runways of the SBA.

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

Impact: No Impact

The proposed Project site is not in a designated moderate, high, or very high wildfire risk area according to the California Department of Forestry and Fire Protection Fire Resource Assessment Program for the County of Santa Barbara. The GSD WRRF has the required facilities and plans in place related to health and safety programs and precautions for emergencies and fire. No additional infrastructure is planned or needed to mitigate risk from wildfires. The proposed Project will not have an impact on the potential for risks from wildfires.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Impact: No Impact

The proposed Project site is in a nearly flat coastal zone with no planned drainage changes and has minimal risk of flooding or slope instability (see Section 3.4.VII and Appendix D). WRRF has large ponds and is not expected to expose workers or the public to a threat from flooding or landslides that might result in the event of a wildfire.

Mitigation Measures:

No mitigation is required.

XXI. Mandatory Findings of Significance

Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. Mandatory Findings of Significance.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☑	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☑	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Environmental Determination:

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Impact: Less Than Significant Impact with Mitigation Incorporated

Based on the sections presented in this MND, the potentially significant impacts are to biological, cultural, geological/paleontological, and Tribal cultural resources. All other impacts are considered to be less than significant or no impact. However, with mitigation incorporated, the Project is not expected to have a significant effect on the environment, habitats, populations, animal ranges, or plant or animal communities, or eliminate examples of periods of history. The mitigation measures that ensure this are MM-BIO-1, MM-BIO-2, MM-CUL-1, MM-CUL-2, MM-CUL-3, MM-CUL-4, MM-CUL-5, MM-GEO-1, MM-GHG-1, MM-TCR-1, MM-TCR-2, MM-TCR-3, and MM-UTL-1.

b) ***Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)***

Impact: Less Than Significant Impact with Mitigation Incorporated

Cumulative impacts are discussed for those topics where there is potential for the proposed Project to cause significant impacts. Several areas of potential cumulative impact requiring mitigation have been discussed. While the proposed Project is part of the broader BESP, each additional project identified under BESP has independent utility and serves a distinct purpose. The Solar Project which is currently underway is anticipated to provide substantial GHG reductions as part of the implementation of the BESP. Other projects include potentially adding food waste or grease acceptance facilities and providing storage for digester gas. They remain in the early planning stages and have not yet advanced to design; therefore, their specific environmental impacts are not reasonably foreseeable at this time and cannot be meaningfully evaluated under CEQA. Lastly, California has many programs in place to reduce the amount of solid waste being put into landfills, and GSD will continue to employ best practices and implement the measures identified. Because GHG emissions are generally considered a cumulative impact, the Project's contribution to GHG reduction through VMT reduction, production of Class A biosolids, and future biogas utilization combined with the Solar Project's renewable energy generation and the CHP engine's onsite renewable power production, supports a finding of less than significant cumulative impact. With all the mitigation measures listed in Section 3.5, the potential for cumulative impacts from construction and operation of the Project is considered less than significant.

c) ***Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?***

Impact: Less Than Significant Impact

With less than significant air quality and health risk impacts, hazardous material, noise, wildfire, and all other potential impacts, the risk of substantial adverse effects on human beings is considered less than significant.

3.5 Mitigation Measures

The required mitigation measures are outlined below. A Mitigation Monitoring and Reporting Program is included in Appendix G.

3.5.1 Biological Resources

Impacts to Nesting Birds: Should construction or vegetation clearing be initiated during the bird nesting season (January 15th to September 15th), injury and mortality to native nesting birds protected under the Migratory Bird Treaty Act and the California Fish and Game Code may occur.

MM-BIO-1 Pre-construction Nesting Bird Surveys. If Project activities are proposed during the general avian breeding season of January 15th to September 15th, the Project biologist shall conduct a pre-construction survey for active nests within 500 feet of the construction area and submit a letter report to the County of Santa Barbara prior to the pre-construction meeting. If active nests are detected, clearing and construction within a minimum of 300 feet shall be postponed until the nest(s) is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. If an active raptor or rare, threatened, endangered, or SSC bird nest is found, clearing and construction within a minimum of 500 feet shall be postponed until the nest(s) is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. The report submitted to the County shall include mitigation measures including, but not limited to, (1) worker environmental awareness training, (2) daily biological monitoring during construction activities, and (3) the locations of flags and/or stakes to provide the appropriate avoidance buffers. If no nesting birds are detected during the pre-construction survey, no mitigation is required.

The Project biologist shall continue to perform site surveys during all construction activities to detect any nesting birds that may nest on the Project site after the pre-construction survey. Pre-construction clearance surveys shall be completed as required to comply with the federal Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, California Fish and Game Code, and/or County regulations. If the biological monitor determines that Project activities are disturbing or disrupting nesting activities, the monitor will make recommendations to County staff to reduce the noise or disturbance in the vicinity. This may include recommendations such as (1) turning off vehicle engines and other equipment whenever possible to reduce noise, (2) working in other areas until the young have fledged, and (3) stopping work until young are independent of their nests (Development Standard ECO-EGV-2C in County of Santa Barbara 2017).

Requirements and Timing

Pre-construction nesting bird surveys shall be completed prior to any vegetation clearing or ground disturbance associated with construction or grading during the bird nesting season (January 15th to September 15th). The survey should be conducted within 1 week prior to construction or site preparation activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site.

Monitoring

GSD shall ensure the pre-construction nesting bird surveys, and any avoidance requirements, are completed prior to commencement of any earthmoving activities. The results of the pre-construction nesting bird survey will be submitted to the County prior to the pre-construction meeting to document compliance with applicable State and federal laws pertaining to the protection of native birds.

Potential indirect impacts could occur as a result of construction site runoff. These impacts may include accidental pollutant/chemical spills or discharge of materials from the use of concrete, oil/gas, water runoff, or on-site fueling stations. To minimize potential impacts to adjacent sensitive habitat and potential jurisdictional features, the following measure is recommended.

MM-BIO-2 Erosion and Sediment Control Plan (ESCP). Due to the Project impact of less than 1 acre, the Applicant shall prepare an ESCP to minimize the potential for discharge of pollutants during construction activities. The ESCP shall be designed to minimize erosion during construction, and it shall be implemented for the duration of the grading period and until re-graded areas have been stabilized by structures, long-term erosion control measures, or permanent landscaping. The ESCP shall include both structural and non-structural BMPs, including straw wattles around storm drains, silt fencing, and/or other physical controls to divert flows from exposed soil, spill prevention methods, and clean housekeeping methods for storing and refueling machinery. The ESCP shall use BMPs designed to stabilize the site, protect natural watercourses/creeks, prevent erosion, and convey storm water runoff to existing drainage systems, keeping contaminants and sediments on-site.

As part of the ESCP, the contractor shall include specifications, installation requirements, and locations of appropriate BMPs to control sediment, coarse particles, concrete, and other materials exposed during construction. During construction activities, washing of concrete or equipment shall occur only in areas where polluted water and materials can be contained for subsequent removal from the site. Washing will not be allowed in locations where the tainted water could enter storm drains.

There is a storm water conveyance swale located in the grassy field, south of the staging area. A 50-foot buffer is required from this feature. The southern boundary of the staging area will need appropriate BMPs, such as a silt fence, to protect storm water.

Requirements and Timing

The ESCP shall be submitted and approved prior to any ground disturbance. A County-approved ESCP is required in order to be issued a Grading Permit. ESCPs shall be developed by a professional knowledgeable in erosion and sediment control. It is recommended that a Certified Professional in Sediment and Erosion Control develop the ESCP. The responsible party shall designate an individual to be responsible for on-site installation, maintenance, and removal of ESCP measures. The ESCP requirements shall be implemented between November 1st and April 15th of each year, except pollution control measures, which shall be implemented year-round.

Monitoring

The contractor shall inspect BMPs regularly and prior to storm events. The contractor shall maintain BMPs in good condition at all times, and monitor the site's storm water measures, prior to the start of construction, as well as throughout the duration of construction, to ensure they continue to function properly.

3.5.2 Cultural Resources

Substantial adverse change in the significance of a historical resource/archaeological resource is anticipated, pursuant to 14 CCR Section 15064.5.

MM-CUL-1 Data Recovery. Despite efforts to avoid significant intact cultural deposits, the proposed Project would impact cultural deposits of moderate density, and therefore, the Project has potential to adversely affect a unique archeological resource. As such, pursuant to CEQA, data recovery is required to be implemented according to following tasks:

A qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, shall be retained to develop a data recovery program and research design prior to the data recovery efforts; they shall make provision for adequately recovering the scientifically consequential information from and about the resource. The program shall be prepared and adopted prior to any excavation being undertaken [CEQA Guidelines Section 15126.4(b)(3)(A)]. The data recovery plan shall include specific levels of effort and methods to obtain a statistically representative sample of significant archaeological deposits, as well as field and laboratory requirements, to ensure proper treatment of all materials, including documentation of results and curation of the archaeological collection. This plan shall be submitted to GSD for review prior to implementation.

Specifically, the data recovery plan shall, at the least, include the standards, guidelines, and performance criteria to ensure that the data recovery mitigation will be effective in "adequately recovering the scientifically consequential information from and about the historical resource," as stated in CEQA Guidelines Section 15126.4(b)(3)(C). The following are basic criteria, based on the California Office of Historic Preservation (OHP) Guidelines for Archaeological Research Designs (OHP 1991), from which a more detailed and comprehensive data recovery plan shall be formulated:

- Professional Qualifications – The data recovery plan shall be designed by a qualified archaeologist who meets the Secretary of Interior's Professional Qualifications for archaeology, including having at least 2 years documented supervisory experience in the study of prehistoric archaeological resources of the region.
- Research Design – The research design shall be developed to satisfy the requirement for public benefit that can be derived from the data recovery efforts. The design shall focus research on one or more important hypotheses that have been carefully constructed to address current data gaps, new models, theories, investigative and conservation techniques, and priority research areas identified by State or federal agencies (OHP 1991; National Park Service 2020). The design shall have the following requirements for its goals, pursuant to OHP guidelines: focus on important goals; be realistic and attainable; establish efficient methods to accomplish the goals; be understandable; provide a thorough and well-organized argument; and be concise and flexible.

- Fieldwork, Laboratory, and Curation Methods – The data recovery field methods shall be designed to recover the entire portion of the cultural resource (sandstone-lined well) that will be impacted as a result of the ground disturbance, plus a statistically significant assemblage of any surrounding resource deposit, sufficient to answer the research questions determined in the data recovery research design that the site is potentially capable of addressing.
- Report Elements – The data recovery efforts shall be thoroughly documented in a comprehensive report, including the following core elements: theoretical orientation; cultural context; definition of the formulated hypotheses presented in the original research design; all field, laboratory, and curation methods; results of research; implications of the results in light of current understanding; and its potential to contribute to future research and understanding.

MM-CUL-2 Construction Monitoring Treatment Plan. Impacts to cultural resources shall be minimized through implementation of pre- and post-construction tasks. Tasks pertaining to cultural resources include the development of a Construction Monitoring Treatment Plan. The purpose of the Plan is to outline a program of treatment and mitigation in the case of an inadvertent discovery of cultural resources during ground-disturbing phases, as well as to provide for the proper identification, evaluation, treatment, and protection of any cultural resources throughout the duration of the Project. This Plan shall define the process to be followed for the identification and management of cultural resources in the Project area during construction. Existence of, and importance of, adherence to this Plan shall be stated on all Project site plans intended for use by those conducting the ground-disturbing activities.

MM-CUL-3 Workers Environmental Awareness Program (WEAP) Training. All construction personnel and monitors who are not trained archaeologists should be briefed regarding unanticipated discoveries prior to the start of ground-disturbing activities. A basic presentation shall be prepared and presented by a qualified archaeologist and Native American representative to inform all personnel working on the Project about the archaeological sensitivity of the area. The purpose of the WEAP training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the Project and explain the importance of, and legal basis for, the protection of significant archaeological resources. Each worker shall also be instructed on the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection and the immediate contact of the archaeological monitor (or if no monitor is present, senior archaeologist) and Native American monitor. The necessity of training attendance shall be stated on all Project site plans intended for use by those conducting the ground-disturbing activities.

MM-CUL-4 Archaeological Monitoring. A qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards shall monitor all initial (first movement of soils within each ground disturbance location at complete horizontal and vertical extents) ground disturbances within the proposed Project site. A qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for a Principal Investigator shall oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue spot monitoring frequency), based on the observed potential for construction activities to encounter cultural deposits. The archaeological monitor shall be responsible for maintaining monitoring logs. Following the completion of construction, the qualified archaeologist shall provide an archaeological monitoring report to the District and the CCIC with the results of the cultural monitoring program.

MM-CUL-5 Inadvertent Discovery of Archaeological Resources. In the event that archaeological resources (sites, features, or artifacts) are exposed during ground-disturbing activities for the Project, all construction work occurring within 50 feet of the find should immediately stop until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA [14 CCR Section 15064.5(f); California PRC Section 21082], the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted. If the discovery is Native American in nature, consultation with and/or monitoring by a tribal representative may be necessary.

If a discovery consists of possible human remains, the Santa Barbara County Coroner, the qualified archaeologist, and GSD shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California NAHC, who will provide the name and contact information for the Most Likely Descendent (MLD). Treatment of the discovery shall be decided in consultation with the MLD provided by the NAHC. Additionally, a tribal representative shall be retained to monitor all further subsurface disturbance in the area of the find. In the event of the discovery of human remains, work in the area of discovery may only proceed after GSD grants authorization.

3.5.3 Geology and Soils

MM-GEO-1 Paleontological Resources Impact Mitigation Program and Paleontological Monitoring: Prior to commencement of any grading activity on-site, the applicant shall retain a qualified paleontologist, per the SVP (2010) guidelines. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed Project. The PRIMP shall be consistent with the SVP (2010) guidelines and outline requirements for pre-construction meeting attendance and worker environmental awareness training, where paleontological monitoring is required within the Project site, based on construction plans and/or geotechnical reports, procedures for adequate paleontological monitoring and discoveries treatment, and paleontological methods (including sediment sampling for microinvertebrate and microvertebrate fossils), reporting, and collections management. The qualified paleontologist shall attend the pre-construction meeting, and a qualified paleontological monitor shall be on-site during initial rough grading and other significant ground-disturbing activities (including augering) in previously undisturbed, early Pleistocene to late Pliocene unnamed marine sedimentary units and Monterey Formation deposits. The qualified paleontological monitor shall also be on-site during initial grading depth of 5 feet below the ground surface, in areas underlain by Holocene estuarine deposits, to determine if they are old enough to preserve scientifically significant paleontological resources. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will allow grading to recommence in the area of the find.

3.5.4 Greenhouse Gas Emissions

MM-GHG-1 GHG Emissions Reductions. GSD shall design and construct the thermal dryer facility to allow combustion of both natural gas and digester gas. Once sufficient biogas is available and implementation is feasible, the facility shall transition to biogas as the primary fuel source to reduce fossil fuel consumption and the associated GHG emissions.

3.5.5 Tribal Cultural Resources

Impacts to TCRs listed or eligible for listing in the CRHR or in a local register of historical resources as defined in PRC Section 5020.1(k), and resources determined by the lead agency in its discretion and supported by substantial evidence pursuant to subdivision (c) of Section 5024.1, should be avoided if feasible and otherwise mitigated pursuant to subdivision (b) of Section 21084.3.

MM-TCR-1 Workers Environmental Awareness Program. All interested tribes that requested and participated in formal AB 52 consultation shall be notified by the GSD of the time and location of the WEAP training no later than 72 hours prior to its scheduled occurrence. GSD shall provide all interested consulting tribes access and opportunity to participate in the WEAP training.

MM-TCR-2 Retention of a Native American Monitor. Prior to any ground-disturbance activities, GSD shall contact any interested tribes with notification of the commencement of ground-disturbing activities, including archaeological excavations. The applicant shall make arrangements with the interested tribe(s) to enter into a Native American Monitoring Agreement with the intent of securing a total of one Native American monitor to be present during initial ground disturbance occurring from 1 foot above native soils and below. Initial ground disturbance is defined as initial construction-related earthmoving of sediments from their place of deposition; this includes archaeological investigations. As it pertains to cultural resource (archaeological or Native American) monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by current Project-related construction. The need for cultural resource monitoring (archaeological and Native American) will be determined by a qualified archaeological principal investigator meeting the Secretary of the Interior's Professional Qualification Standards for a Principal Investigator, in consultation with interested tribes who shall oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency), based on the observed potential for construction activities to encounter cultural deposits or material. More than one monitor may be required if multiple areas within the Project site are simultaneously exposed to initial ground disturbance, as previously defined in these mitigation measures, causing monitoring to be hindered by the distance of the simultaneous activities. The need for an additional monitor shall be determined by the qualified archaeological principal investigator meeting the Secretary of the Interior's Professional

Qualification Standards in consultation with interested tribes. The Native American Monitoring Agreement(s) shall include, but not be limited to, outlining provisions and requirements for establishing on-site Native American monitoring for professional tribal monitors during initial ground disturbance, as defined above. If multiple interested tribes request to be present during initial ground-disturbing activities, each interested tribe will be provided access to the Project site when initial ground-disturbing activities are occurring and with a 48-hour notice. However, one interested tribe at a time will be monetarily compensated for monitoring. If more than one interested tribe would like to be retained for monetary compensation, a schedule will be created to equally share the Native American monitoring duties.

MM-TCR-3 Inadvertent Discovery of Tribal Cultural Resources. In the event that TCRs (sites, features, or artifacts) are exposed during ground-disturbing activities for the Project, all construction work occurring within 50 feet of the find should immediately stop until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find, in consultation with interested tribe(s) as appropriate, and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA [14 CCR Section 15064.5(f); California PRC Section 21082], the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted. If the discovery is Native American in nature, consultation with and/or monitoring by a tribal representative may be necessary. If a discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately, as well as the qualified archaeological Principal Investigator and GSD. If the Coroner determines that the remains are Native American, the Coroner shall contact the California NAHC, who will provide the name and contact information for the MLD. Treatment of the discovery shall be decided in consultation with the MLD provided by the NAHC. Additionally, a tribal representative shall be retained to monitor all further subsurface disturbance in the area of the find. In the event of the discovery of human remains, work in the area of discovery may only proceed after GSD grants authorization.

3.5.6 Utilities and Service Systems

MM-UTIL-1 Solid Waste Diversion from Landfill. GSD will ensure that the construction contractor does not dispose of greater than 350 tons of solid waste in any California landfill. The contractor may exceed 350 tons only if they receive written permission from a landfill (for example, if the landfill wants soils for barrier layers), or if they complete a solid waste mitigation plan that is approved by the Santa Barbara County Public Works Department (or another regional agency, if authorized to do so). Since this is a requirement placed on the construction contractor, GSD will enforce this through a contract mechanism or other legally binding requirement.

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APPENDIX A1 – CALEEMOD OUTPUTS

APPENDIX A1.1 – CALEEMOD OUTPUTS FOR PROPOSED PROJECT

GSD- Solids Handling Improvement Project- November 2025 Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	GSD- Solids Handling Improvement Project- November 2025
Construction Start Date	3/2/2026
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.4
Precipitation (days)	24
Location	34.4220519851653, -119.83333096398727
County	Santa Barbara
City	Unincorporated
Air District	Santa Barbara County APCD
Air Basin	South Central Coast
TAZ	3370
EDFZ	8
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.33

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
General Heavy Industry	18	1000sqft	0.40	17,500	0.00	—	—	—

Other Asphalt Surfaces	53	1000sqft	1.2	0.00	0.00	—	—	—
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0.00	—	—	Sludge Hauling
User Defined Linear	0.15	Mile	0.65	0.00	0.00	—	—	Gas line

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	21	34	26	0.11	1.00	6.0	7.0	0.87	2.3	3.1	—	15,128	15,128	0.75	1.8	22	15,657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.6	22	17	0.09	0.58	3.0	3.5	0.53	0.83	1.2	—	13,338	13,338	0.67	1.8	0.57	13,896
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.4	11	8.0	0.04	0.30	1.6	1.9	0.26	0.52	0.77	—	5,718	5,718	0.28	0.70	3.6	5,936
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	2.1	1.5	0.01	0.05	0.29	0.34	0.05	0.09	0.14	—	947	947	0.05	0.12	0.60	983

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.5	34	26	0.11	1.00	6.0	7.0	0.87	2.3	3.1	—	15,128	15,128	0.75	1.8	22	15,657
2027	21	21	12	0.09	0.40	3.0	3.4	0.38	0.83	1.2	—	13,084	13,084	0.67	1.8	20	13,661
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.6	22	17	0.09	0.58	3.0	3.5	0.53	0.83	1.2	—	13,338	13,338	0.67	1.8	0.57	13,896
2027	0.95	21	12	0.09	0.40	3.0	3.4	0.38	0.83	1.2	—	13,085	13,085	0.67	1.8	0.52	13,642
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.70	11	8.0	0.04	0.30	1.6	1.9	0.26	0.52	0.77	—	5,718	5,718	0.28	0.70	3.6	5,936
2027	1.4	4.6	2.8	0.02	0.09	0.61	0.70	0.08	0.17	0.26	—	2,769	2,769	0.14	0.38	1.8	2,887
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	2.1	1.5	0.01	0.05	0.29	0.34	0.05	0.09	0.14	—	947	947	0.05	0.12	0.60	983
2027	0.25	0.84	0.51	< 0.005	0.02	0.11	0.13	0.02	0.03	0.05	—	459	459	0.02	0.06	0.30	478

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.67	3.1	1.8	0.02	0.06	0.69	0.74	0.05	0.18	0.24	20	3,008	3,028	1.4	0.42	8.7	3,195
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.54	3.1	1.1	0.02	0.05	0.69	0.74	0.05	0.18	0.24	20	3,004	3,025	1.4	0.42	4.7	3,187

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.58	0.63	0.70	< 0.005	0.02	0.10	0.12	0.02	0.03	0.05	20	874	894	1.3	0.08	4.8	953
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	0.12	0.13	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	3.4	145	148	0.21	0.01	0.80	158

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	2.9	0.88	0.02	0.04	0.69	0.72	0.04	0.18	0.22	—	2,496	2,496	0.12	0.40	4.1	2,621
Area	0.62	0.01	0.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.1	3.1	< 0.005	< 0.005	—	3.1
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	476	476	0.04	< 0.005	—	478
Water	—	—	—	—	—	—	—	—	—	—	8.6	32	41	0.03	0.02	—	47
Waste	—	—	—	—	—	—	—	—	—	—	12	0.00	12	1.2	0.00	—	41
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.6
Total	0.67	3.1	1.8	0.02	0.06	0.69	0.74	0.05	0.18	0.24	20	3,008	3,028	1.4	0.42	8.7	3,195
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	2.9	0.89	0.02	0.04	0.69	0.72	0.04	0.18	0.22	—	2,496	2,496	0.12	0.40	0.11	2,617
Area	0.49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	476	476	0.04	< 0.005	—	478
Water	—	—	—	—	—	—	—	—	—	—	8.6	32	41	0.03	0.02	—	47
Waste	—	—	—	—	—	—	—	—	—	—	12	0.00	12	1.2	0.00	—	41
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.6
Total	0.54	3.1	1.1	0.02	0.05	0.69	0.74	0.05	0.18	0.24	20	3,004	3,025	1.4	0.42	4.7	3,187

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.43	0.16	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	364	364	0.02	0.06	0.27	381
Area	0.56	< 0.005	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.5	1.5	< 0.005	< 0.005	—	1.5
Energy	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	476	476	0.04	< 0.005	—	478
Water	—	—	—	—	—	—	—	—	—	—	8.6	32	41	0.03	0.02	—	47
Waste	—	—	—	—	—	—	—	—	—	—	12	0.00	12	1.2	0.00	—	41
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.6
Total	0.58	0.63	0.70	< 0.005	0.02	0.10	0.12	0.02	0.03	0.05	20	874	894	1.3	0.08	4.8	953
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	60	60	< 0.005	0.01	0.04	63
Area	0.10	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.26	0.26	< 0.005	< 0.005	—	0.26
Energy	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	79	79	0.01	< 0.005	—	79
Water	—	—	—	—	—	—	—	—	—	—	1.4	5.3	6.7	0.01	< 0.005	—	7.8
Waste	—	—	—	—	—	—	—	—	—	—	1.9	0.00	1.9	0.19	0.00	—	6.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.75	0.75
Total	0.11	0.12	0.13	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	3.4	145	148	0.21	0.01	0.80	158

3. Construction Emissions Details

3.1. Linear (2026) - 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	2.3	21	25	0.04	0.86	—	0.86	0.80	—	0.80	—	4,665	4,665	0.19	0.04	—	4,681

Dust From Material Movement	—	—	—	—	—	2.9	2.9	—	1.5	1.5	—	—	—	—	—	—	—
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	0.08	0.68	0.81	< 0.005	0.03	—	0.03	0.03	—	0.03	—	153	153	0.01	< 0.005	—	154
Dust From Material Movement	—	—	—	—	—	0.09	0.09	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.15	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	25	25	< 0.005	< 0.005	—	25
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.06	0.69	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	123	123	0.01	0.01	0.52	126
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	—	4.0	4.0	< 0.005	< 0.005	0.01	4.0
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	—	0.66	0.66	< 0.005	< 0.005	< 0.005	0.67
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. Demolition (2026) - 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	1.6	15	16	0.03	0.57	—	0.57	0.53	—	0.53	—	2,806	2,806	0.11	0.02	—	2,815
Demolition	—	—	—	—	—	0.37	0.37	—	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.6	15	16	0.03	0.57	—	0.57	0.53	—	0.53	—	2,806	2,806	0.11	0.02	—	2,815

Demolition	—	—	—	—	—	0.37	0.37	—	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	0.09	0.80	0.90	< 0.005	0.03	—	0.03	0.03	—	0.03	—	154	154	0.01	< 0.005	—	154
Demolition	—	—	—	—	—	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	0.02	0.15	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	25	25	< 0.005	< 0.005	—	26
Demolition	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.43	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	77	77	< 0.005	< 0.005	0.32	79
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	0.01	0.66	0.23	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	488	488	0.03	0.08	0.90	512
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.44	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75	75	< 0.005	< 0.005	0.01	77
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	0.01	0.68	0.23	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	488	488	0.03	0.08	0.02	511
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.1	4.1	< 0.005	< 0.005	0.01	4.2
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	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27	27	< 0.005	< 0.005	0.02	28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.69	0.69	< 0.005	< 0.005	< 0.005	0.70
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	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.4	4.4	< 0.005	< 0.005	< 0.005	4.6

3.5. Site Preparation (2026) - 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	2.2	20	21	0.04	0.81	—	0.81	0.75	—	0.75	—	4,726	4,726	0.19	0.04	—	4,743
Dust From Material Movement	—	—	—	—	—	3.3	3.3	—	1.5	1.5	—	—	—	—	—	—	—
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	0.22	2.0	2.1	< 0.005	0.08	—	0.08	0.07	—	0.07	—	466	466	0.02	< 0.005	—	468

Dust From Material Movement	—	—	—	—	—	0.32	0.32	—	0.15	0.15	—	—	—	—	—	—	—
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	0.36	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	77	77	< 0.005	< 0.005	—	77
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.60	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	108	108	0.01	< 0.005	0.45	110
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	105	105	< 0.005	0.01	0.25	109
Hauling	0.21	14	4.7	0.07	0.19	2.6	2.7	0.12	0.72	0.84	—	10,189	10,189	0.54	1.6	19	10,695
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10	10	< 0.005	< 0.005	0.02	11
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10	10	< 0.005	< 0.005	0.01	11
Hauling	0.02	1.4	0.47	0.01	0.02	0.25	0.27	0.01	0.07	0.08	—	1,005	1,005	0.05	0.16	0.80	1,054
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.7	1.7	< 0.005	< 0.005	< 0.005	1.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.7	1.7	< 0.005	< 0.005	< 0.005	1.8
Hauling	< 0.005	0.26	0.09	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	166	166	0.01	0.03	0.13	174

3.7. Building Construction A (2026) - 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	0.75	6.9	7.3	0.02	0.27	—	0.27	0.25	—	0.25	—	1,750	1,750	0.07	0.01	—	1,756
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	0.75	6.9	7.3	0.02	0.27	—	0.27	0.25	—	0.25	—	1,750	1,750	0.07	0.01	—	1,756
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	0.22	2.0	2.1	< 0.005	0.08	—	0.08	0.07	—	0.07	—	510	510	0.02	< 0.005	—	511
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	0.36	0.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	84	84	< 0.005	< 0.005	—	85
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	0.03	0.02	0.25	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	45	45	< 0.005	< 0.005	0.19	46
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	105	105	< 0.005	0.01	0.25	109
Hauling	0.19	15	4.6	0.07	0.21	2.9	3.1	0.14	0.81	0.95	—	11,437	11,437	0.59	1.8	21	12,004
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	44	44	< 0.005	< 0.005	< 0.005	45
Vendor	< 0.005	0.17	0.08	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	105	105	< 0.005	0.01	0.01	109
Hauling	0.19	15	4.7	0.07	0.21	2.9	3.1	0.14	0.81	0.95	—	11,439	11,439	0.59	1.8	0.55	11,985
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13	13	< 0.005	< 0.005	0.02	13
Vendor	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30	30	< 0.005	< 0.005	0.03	32
Hauling	0.06	4.4	1.4	0.02	0.06	0.83	0.89	0.04	0.23	0.27	—	3,331	3,331	0.17	0.52	2.7	3,492
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.1	2.1	< 0.005	< 0.005	< 0.005	2.2
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.0	5.0	< 0.005	< 0.005	0.01	5.3
Hauling	0.01	0.80	0.25	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	551	551	0.03	0.09	0.45	578

3.9. Building Construction A (2027) - 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	0.73	6.6	7.3	0.02	0.25	—	0.25	0.23	—	0.23	—	1,750	1,750	0.07	0.01	—	1,756
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	0.73	6.6	7.3	0.02	0.25	—	0.25	0.23	—	0.23	—	1,750	1,750	0.07	0.01	—	1,756
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	0.15	1.4	1.5	< 0.005	0.05	—	0.05	0.05	—	0.05	—	362	362	0.01	< 0.005	—	363
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	0.25	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	60	60	< 0.005	< 0.005	—	60
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	0.03	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	44	44	< 0.005	< 0.005	0.17	45
Vendor	< 0.005	0.15	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	102	102	< 0.005	0.01	0.23	107
Hauling	0.19	14	4.5	0.07	0.14	2.9	3.0	0.14	0.81	0.95	—	11,187	11,187	0.59	1.8	20	11,752
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	44	44	< 0.005	< 0.005	< 0.005	44
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	103	103	< 0.005	0.01	0.01	107
Hauling	0.19	14	4.5	0.07	0.14	2.9	3.0	0.14	0.81	0.95	—	11,189	11,189	0.59	1.8	0.51	11,735
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.0	9.0	< 0.005	< 0.005	0.02	9.2

Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21	21	< 0.005	< 0.005	0.02	22
Hauling	0.04	3.0	0.93	0.01	0.03	0.59	0.62	0.03	0.17	0.20	—	2,312	2,312	0.12	0.37	1.8	2,427
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.5	1.5	< 0.005	< 0.005	< 0.005	1.5
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.5	3.5	< 0.005	< 0.005	< 0.005	3.7
Hauling	0.01	0.55	0.17	< 0.005	0.01	0.11	0.11	0.01	0.03	0.04	—	383	383	0.02	0.06	0.29	402

3.11. Building Construction B (2027) - 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	0.55	5.3	6.3	0.01	0.21	—	0.21	0.19	—	0.19	—	1,561	1,561	0.06	0.01	—	1,566
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	0.02	0.15	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	43	43	< 0.005	< 0.005	—	43
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	—	7.1	7.1	< 0.005	< 0.005	—	7.1
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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	44	44	< 0.005	< 0.005	0.17	45
Vendor	< 0.005	0.15	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	102	102	< 0.005	0.01	0.23	107
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	—	1.2	1.2	< 0.005	< 0.005	< 0.005	1.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.8	2.8	< 0.005	< 0.005	< 0.005	2.9
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.20
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.49
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. Building Construction C (2027) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	44	44	< 0.005	< 0.005	0.17	45
Vendor	< 0.005	0.15	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	102	102	< 0.005	0.01	0.23	107
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	—	1.2	1.2	< 0.005	< 0.005	< 0.005	1.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.8	2.8	< 0.005	< 0.005	< 0.005	2.9
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.20	0.20	< 0.005	< 0.005	< 0.005	0.20
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.49
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

3.15. Building Construction D (2027) - 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.02	0.24	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	44	44	< 0.005	< 0.005	0.17	45
Vendor	< 0.005	0.15	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	102	102	< 0.005	0.01	0.23	107
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.61
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.4	1.4	< 0.005	< 0.005	< 0.005	1.5
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	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.10
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.23	0.23	< 0.005	< 0.005	< 0.005	0.24

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

3.17. Architectural Coating (2027) - 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	0.17	1.2	1.7	< 0.005	0.03	—	0.03	0.03	—	0.03	—	200	200	0.01	< 0.005	—	201
Architectural Coatings	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11	11	< 0.005	< 0.005	—	11
Architectural Coatings	1.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	1.8	1.8	< 0.005	< 0.005	—	1.8
Architectural Coatings	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	36	36	< 0.005	< 0.005	0.14	36
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	—	1.9	1.9	< 0.005	< 0.005	< 0.005	1.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	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

4.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.01	< 0.005	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	8.6	8.6	< 0.005	< 0.005	0.03	8.7
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
User Defined Industrial	0.03	2.9	0.84	0.02	0.04	0.68	0.72	0.04	0.18	0.22	—	2,488	2,488	0.12	0.39	4.1	2,612
Total	0.04	2.9	0.88	0.02	0.04	0.69	0.72	0.04	0.18	0.22	—	2,496	2,496	0.12	0.40	4.1	2,621
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.01	< 0.005	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	8.4	8.4	< 0.005	< 0.005	< 0.005	8.6
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
User Defined Industrial	0.03	2.9	0.85	0.02	0.04	0.68	0.72	0.04	0.18	0.22	—	2,488	2,488	0.12	0.39	0.11	2,608
Total	0.04	2.9	0.89	0.02	0.04	0.69	0.72	0.04	0.18	0.22	—	2,496	2,496	0.12	0.40	0.11	2,617
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.4	1.4	< 0.005	< 0.005	< 0.005	1.4
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
User Defined Industrial	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	59	59	< 0.005	0.01	0.04	62
Total	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	60	60	< 0.005	0.01	0.04	63

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	237	237	0.01	< 0.005	—	238
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	237	237	0.01	< 0.005	—	238
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	237	237	0.01	< 0.005	—	238
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	237	237	0.01	< 0.005	—	238
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	39	39	< 0.005	< 0.005	—	39
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	39	39	< 0.005	< 0.005	—	39

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	239	239	0.02	< 0.005	—	240
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
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	239	239	0.02	< 0.005	—	240
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	239	239	0.02	< 0.005	—	240

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
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.20	0.17	< 0.005	0.02	—	0.02	0.02	—	0.02	—	239	239	0.02	< 0.005	—	240
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	40	40	< 0.005	< 0.005	—	40
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
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	40	40	< 0.005	< 0.005	—	40

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.13	0.01	0.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.1	3.1	< 0.005	< 0.005	—	3.1
Total	0.62	0.01	0.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.1	3.1	< 0.005	< 0.005	—	3.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.26	0.26	< 0.005	< 0.005	—	0.26
Total	0.10	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.26	0.26	< 0.005	< 0.005	—	0.26

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	8.6	32	41	0.03	0.02	—	47
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	8.6	32	41	0.03	0.02	—	47
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	8.6	32	41	0.03	0.02	—	47
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	8.6	32	41	0.03	0.02	—	47
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	1.4	5.3	6.7	0.01	< 0.005	—	7.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1.4	5.3	6.7	0.01	< 0.005	—	7.8

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	12	0.00	12	1.2	0.00	—	41
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12	0.00	12	1.2	0.00	—	41
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	12	0.00	12	1.2	0.00	—	41
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	12	0.00	12	1.2	0.00	—	41
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Heavy Industry	—	—	—	—	—	—	—	—	—	—	1.9	0.00	1.9	0.19	0.00	—	6.8
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1.9	0.00	1.9	0.19	0.00	—	6.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.6
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.6
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.6	4.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.75	0.75

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.75	0.75

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Linear	Linear, Drainage, Utilities, & Sub-Grade	6/8/2026	6/28/2026	4.0	12	Trenching and installation of gas lines
Demolition	Demolition	3/2/2026	4/5/2026	4.0	20	Demolition of asphalt surfaces
Site Preparation	Site Preparation	4/6/2026	6/7/2026	4.0	36	Site preparation and grading for Thermal Dryer System
Building Construction A	Building Construction	6/29/2026	5/12/2027	4.0	183	Construction of the Thermal Dryer System
Building Construction B	Building Construction	6/1/2027	6/16/2027	4.0	10.0	Paving and Mechanical and electrical work
Building Construction C	Building Construction	6/16/2027	7/4/2027	4.0	10.0	Commissioning
Building Construction D	Building Construction	8/9/2027	8/16/2027	4.0	5.0	Startup and preliminary operations
Architectural Coating	Architectural Coating	7/5/2027	8/8/2027	4.0	20	Painting

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	Bore/Drill Rigs	Diesel	Average	1.00	9.0	83	0.50
Linear	Excavators	Diesel	Average	1.00	9.0	136	0.38
Linear	Rubber Tired Dozers	Diesel	Average	1.00	9.0	367	0.40
Linear	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.0	84	0.37
Linear	Cranes	Diesel	Average	1.00	9.0	367	0.29

Linear	Other General Industrial Equipment	Diesel	Average	1.00	9.0	35	0.34
Linear	Air Compressors	Diesel	Average	1.00	9.0	37	0.48
Linear	Other Construction Equipment	Diesel	Average	1.00	9.0	82	0.42
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	3.0	9.0	84	0.37
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	9.0	367	0.40
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	9.0	33	0.73
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.0	84	0.37
Site Preparation	Excavators	Diesel	Average	1.00	9.0	136	0.38
Site Preparation	Dumpers/Tenders	Diesel	Average	2.0	9.0	16	0.38
Site Preparation	Skid Steer Loaders	Diesel	Average	1.00	9.0	71	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	9.0	367	0.40
Site Preparation	Scrapers	Diesel	Average	1.00	8.0	423	0.48
Building Construction A	Cranes	Diesel	Average	1.00	9.0	367	0.29
Building Construction A	Forklifts	Diesel	Average	1.00	9.0	82	0.20
Building Construction A	Tractors/Loaders/Backhoes	Diesel	Average	1.00	9.0	84	0.37
Building Construction A	Dumpers/Tenders	Diesel	Average	2.0	9.0	16	0.38
Building Construction B	Cranes	Diesel	Average	1.00	9.0	367	0.29
Building Construction B	Forklifts	Diesel	Average	1.00	9.0	82	0.20
Building Construction B	Skid Steer Loaders	Diesel	Average	1.00	9.0	71	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	9.0	37	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear	Worker	20	8.8	LDA,LDT1,LDT2
Linear	Vendor	0.00	5.3	HHDT,MHDT
Linear	Hauling	0.00	20	HHDT
Linear	Onsite truck	—	—	HHDT
Demolition	Worker	13	8.8	LDA,LDT1,LDT2
Demolition	Vendor	—	5.3	HHDT,MHDT
Demolition	Hauling	6.8	20	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	18	8.8	LDA,LDT1,LDT2
Site Preparation	Vendor	6.0	5.3	HHDT,MHDT
Site Preparation	Hauling	141	20	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Building Construction A	Worker	7.3	8.8	LDA,LDT1,LDT2
Building Construction A	Vendor	6.0	5.3	HHDT,MHDT
Building Construction A	Hauling	82	39	HHDT
Building Construction A	Onsite truck	—	—	HHDT
Building Construction B	Worker	7.3	8.8	LDA,LDT1,LDT2
Building Construction B	Vendor	6.0	5.3	HHDT,MHDT
Building Construction B	Hauling	0.00	20	HHDT
Building Construction B	Onsite truck	—	—	HHDT
Building Construction C	Worker	7.3	8.8	LDA,LDT1,LDT2
Building Construction C	Vendor	6.0	5.3	HHDT,MHDT
Building Construction C	Hauling	0.00	20	HHDT
Building Construction C	Onsite truck	—	—	HHDT

Building Construction D	Worker	7.3	8.8	LDA,LDT1,LDT2
Building Construction D	Vendor	6.0	5.3	HHDT,MHDT
Building Construction D	Hauling	0.00	20	HHDT
Building Construction D	Onsite truck	—	—	HHDT
Architectural Coating	Worker	5.9	8.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	5.3	HHDT,MHDT
Architectural Coating	Hauling	0.00	20	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

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	26,250	8,750	3,150

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 (Ton of Debris)	Acres Paved (acres)
Linear	—	—	0.65	0.00	0.00

Demolition	0.00	0.00	0.00	540	0.00
Site Preparation	400	0.00	1.1	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005
2027	0.00	532	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
General Heavy Industry	2.0	2.0	2.0	730	11	11	11	4,042
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Industrial	0.00	4.0	0.00	209	0.00	736	0.00	38,377

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
General Heavy Industry	Wood Fireplaces	0	0
General Heavy Industry	Gas Fireplaces	0	0
General Heavy Industry	Propane Fireplaces	0	0
General Heavy Industry	Electric Fireplaces	0	0
General Heavy Industry	No Fireplaces	0	0
General Heavy Industry	Conventional Wood Stoves	0	0
General Heavy Industry	Catalytic Wood Stoves	0	0
General Heavy Industry	Non-Catalytic Wood Stoves	0	0
General Heavy Industry	Pellet Wood Stoves	0	0
Other Asphalt Surfaces	Wood Fireplaces	0	0
Other Asphalt Surfaces	Gas Fireplaces	0	0
Other Asphalt Surfaces	Propane Fireplaces	0	0
Other Asphalt Surfaces	Electric Fireplaces	0	0
Other Asphalt Surfaces	No Fireplaces	0	0
Other Asphalt Surfaces	Conventional Wood Stoves	0	0
Other Asphalt Surfaces	Catalytic Wood Stoves	0	0
Other Asphalt Surfaces	Non-Catalytic Wood Stoves	0	0
Other Asphalt Surfaces	Pellet Wood Stoves	0	0
User Defined Industrial	Wood Fireplaces	0	0
User Defined Industrial	Gas Fireplaces	0	0
User Defined Industrial	Propane Fireplaces	0	0
User Defined Industrial	Electric Fireplaces	0	0
User Defined Industrial	No Fireplaces	0	0
User Defined Industrial	Conventional Wood Stoves	0	0
User Defined Industrial	Catalytic Wood Stoves	0	0
User Defined Industrial	Non-Catalytic Wood Stoves	0	0

User Defined Industrial	Pellet Wood Stoves	0	0
User Defined Linear	Wood Fireplaces	0	0
User Defined Linear	Gas Fireplaces	0	0
User Defined Linear	Propane Fireplaces	0	0
User Defined Linear	Electric Fireplaces	0	0
User Defined Linear	No Fireplaces	0	0
User Defined Linear	Conventional Wood Stoves	0	0
User Defined Linear	Catalytic Wood Stoves	0	0
User Defined Linear	Non-Catalytic Wood Stoves	0	0
User Defined Linear	Pellet Wood Stoves	0	0

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)
undefined	0.00	0.00	26,250	8,750	3,150

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Heavy Industry	162,731	532	0.0330	0.0040	746,370
Other Asphalt Surfaces	0.00	532	0.0330	0.0040	0.00

User Defined Industrial	0.00	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Heavy Industry	4,046,875	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Heavy Industry	22	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Heavy Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.0	4.0	18

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.0	annual days of extreme heat
Extreme Precipitation	7.0	annual days with precipitation above 20 mm
Sea Level Rise	—	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 (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

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

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

6.3. Adjusted Climate Risk Scores

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

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	21
AQ-PM	14
AQ-DPM	20
Drinking Water	—
Lead Risk Housing	—

Pesticides	18
Toxic Releases	27
Traffic	51
Effect Indicators	—
CleanUp Sites	20
Groundwater	69
Haz Waste Facilities/Generators	36
Impaired Water Bodies	83
Solid Waste	22
Sensitive Population	—
Asthma	26
Cardio-vascular	41
Low Birth Weights	—
Socioeconomic Factor Indicators	—
Education	—
Housing	—
Linguistic	—
Poverty	—
Unemployment	—

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—
Employed	—
Median HI	—
Education	—

Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—
Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	97.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0

Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	99.8
Physically Disabled	99.8
Heart Attack ER Admissions	98.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	12.9
Children	99.4
Elderly	99.8
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	82.5
Traffic Density	0.0

Traffic Access	0.0
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	—
Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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

8.1. Justifications

Screen	Justification
Construction: Construction Phases	4-10 Schedule

Construction: Off-Road Equipment	Project specific
Construction: Dust From Material Movement	Project specific
Construction: Trips and VMT	Project specific
Operations: Vehicle Data	Sludge hauling to Lost Hills: 2 trucks per week ~184 miles each way. In order to be conservative, it was assumed that both trucks visit the facility on a same day (i.e., 4 trips in one day)
Operations: Fleet Mix	sludge hauling done by vacuum trucks. HHDs

APPENDIX A1.2 – CALEEMOD OUTPUTS FOR EXISTING SLUDGE HAULING

GSD- Solids Handling Improvement Project- November 2025 - existing sludge hauling Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	GSD- Solids Handling Improvement Project- November 2025 - existing sludge hauling
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.4
Precipitation (days)	24
Location	34.4220519851653, -119.83333096398727
County	Santa Barbara
City	Unincorporated
Air District	Santa Barbara County APCD
Air Basin	South Central Coast
TAZ	3370
EDFZ	8
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.33

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
General Heavy Industry	18	1000sqft	0.40	17,500	0.00	—	—	—

Other Asphalt Surfaces	53	1000sqft	1.2	0.00	0.00	—	—	—
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0.00	—	—	Sludge Hauling
User Defined Linear	0.15	Mile	0.65	0.00	0.00	—	—	Gas line

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	1.4	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	0.00	1,244	1,244	0.06	0.20	2.1	1,306
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	1.5	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	0.00	1,244	1,244	0.06	0.20	0.05	1,304
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	1.5	0.42	0.01	0.02	0.33	0.35	0.02	0.09	0.11	0.00	1,244	1,244	0.06	0.20	0.89	1,305
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	0.27	0.08	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	0.00	206	206	0.01	0.03	0.15	216

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	1.4	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,244	1,244	0.06	0.20	2.1	1,306
Area	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	1.4	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	0.00	1,244	1,244	0.06	0.20	2.1	1,306
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	1.5	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,244	1,244	0.06	0.20	0.05	1,304
Area	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	1.5	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	0.00	1,244	1,244	0.06	0.20	0.05	1,304
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	1.5	0.42	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,244	1,244	0.06	0.20	0.89	1,305
Area	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.02	1.5	0.42	0.01	0.02	0.33	0.35	0.02	0.09	0.11	0.00	1,244	1,244	0.06	0.20	0.89	1,305
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	< 0.005	0.27	0.08	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	0.01	0.03	0.15	216
Area	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.27	0.08	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	0.00	206	206	0.01	0.03	0.15	216

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.00	0.00	0.00	0.00	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
User Defined Industrial	0.02	1.4	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,244	1,244	0.06	0.20	2.1	1,306
Total	0.02	1.4	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,244	1,244	0.06	0.20	2.1	1,306
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.00	0.00	0.00	0.00	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
User Defined Industrial	0.02	1.5	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,244	1,244	0.06	0.20	0.05	1,304
Total	0.02	1.5	0.42	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,244	1,244	0.06	0.20	0.05	1,304
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.00	0.00	0.00	0.00	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
User Defined Industrial	< 0.005	0.27	0.08	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	0.01	0.03	0.15	216
Total	< 0.005	0.27	0.08	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	0.01	0.03	0.15	216

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.00	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
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.00	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
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	0.00	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
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	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
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	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
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Heavy Industry	—	—	—	—	—	—	—	—	—	—	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
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	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
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Heavy Industry	—	—	—	—	—	—	—	—	—	—	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
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Heavy Industry	—	—	—	—	—	—	—	—	—	—	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
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

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

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

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.9. 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
General Heavy Industry	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
User Defined Industrial	2.0	2.0	2.0	730	368	368	368	134,320

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
General Heavy Industry	Wood Fireplaces	0	0
General Heavy Industry	Gas Fireplaces	0	0
General Heavy Industry	Propane Fireplaces	0	0
General Heavy Industry	Electric Fireplaces	0	0
General Heavy Industry	No Fireplaces	0	0
General Heavy Industry	Conventional Wood Stoves	0	0
General Heavy Industry	Catalytic Wood Stoves	0	0
General Heavy Industry	Non-Catalytic Wood Stoves	0	0
General Heavy Industry	Pellet Wood Stoves	0	0
Other Asphalt Surfaces	Wood Fireplaces	0	0
Other Asphalt Surfaces	Gas Fireplaces	0	0
Other Asphalt Surfaces	Propane Fireplaces	0	0

Other Asphalt Surfaces	Electric Fireplaces	0	0
Other Asphalt Surfaces	No Fireplaces	0	0
Other Asphalt Surfaces	Conventional Wood Stoves	0	0
Other Asphalt Surfaces	Catalytic Wood Stoves	0	0
Other Asphalt Surfaces	Non-Catalytic Wood Stoves	0	0
Other Asphalt Surfaces	Pellet Wood Stoves	0	0
User Defined Industrial	Wood Fireplaces	0	0
User Defined Industrial	Gas Fireplaces	0	0
User Defined Industrial	Propane Fireplaces	0	0
User Defined Industrial	Electric Fireplaces	0	0
User Defined Industrial	No Fireplaces	0	0
User Defined Industrial	Conventional Wood Stoves	0	0
User Defined Industrial	Catalytic Wood Stoves	0	0
User Defined Industrial	Non-Catalytic Wood Stoves	0	0
User Defined Industrial	Pellet Wood Stoves	0	0
User Defined Linear	Wood Fireplaces	0	0
User Defined Linear	Gas Fireplaces	0	0
User Defined Linear	Propane Fireplaces	0	0
User Defined Linear	Electric Fireplaces	0	0
User Defined Linear	No Fireplaces	0	0
User Defined Linear	Conventional Wood Stoves	0	0
User Defined Linear	Catalytic Wood Stoves	0	0
User Defined Linear	Non-Catalytic Wood Stoves	0	0
User Defined Linear	Pellet Wood Stoves	0	0

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)

undefined	0.00	0.00	0.00	0.00	0.00

5.10.3. Landscape Equipment

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

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)
General Heavy Industry	0.00	532	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	532	0.0330	0.0040	0.00
User Defined Industrial	0.00	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Heavy Industry	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)

General Heavy Industry	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
User Defined Industrial	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.0	annual days of extreme heat
Extreme Precipitation	7.0	annual days with precipitation above 20 mm
Sea Level Rise	—	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 (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A

Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

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

6.3. Adjusted Climate Risk Scores

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

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	21
AQ-PM	14
AQ-DPM	20
Drinking Water	—
Lead Risk Housing	—
Pesticides	18
Toxic Releases	27
Traffic	51
Effect Indicators	—
CleanUp Sites	20
Groundwater	69
Haz Waste Facilities/Generators	36
Impaired Water Bodies	83
Solid Waste	22
Sensitive Population	—
Asthma	26
Cardio-vascular	41
Low Birth Weights	—
Socioeconomic Factor Indicators	—
Education	—
Housing	—
Linguistic	—
Poverty	—
Unemployment	—

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—
Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—

Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	97.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	99.8
Physically Disabled	99.8
Heart Attack ER Admissions	98.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	12.9

Children	99.4
Elderly	99.8
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	82.5
Traffic Density	0.0
Traffic Access	0.0
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	—
Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
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

8.1. Justifications

Screen	Justification
Construction: Construction Phases	4-10 Schedule
Construction: Off-Road Equipment	Project specific
Construction: Dust From Material Movement	Project specific
Construction: Trips and VMT	Project specific
Operations: Vehicle Data	Sludge hauling to Lost Hills: 2 trucks per week ~184 miles each way
Operations: Fleet Mix	sludge hauling done by vacuum trucks. HHDs
Operations: Consumer Products	CalEEMod run for existing sludge hauling only
Operations: Architectural Coatings	CalEEMod run for existing sludge hauling only
Operations: Landscape Equipment	CalEEMod run for existing sludge hauling only
Operations: Energy Use	CalEEMod run for existing sludge hauling only
Operations: Water and Waste Water	CalEEMod run for existing sludge hauling only
Operations: Solid Waste	CalEEMod run for existing sludge hauling only
Operations: Refrigerants	CalEEMod run for existing sludge hauling only

APPENDIX A2 – STATIONARY SOURCES EMISSIONS CALCULATIONS

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Table A2-1: Data and Parameters for the Thermal Dryer

Molar Volume	Constant	379	scf/lb-mol
MW SO2	Constant	64	lb/lb-mol
Conversion	Constant	454	gm/lb
Conversion	Constant	1.341	hp/kW
Conversion	Constant	60	min/hr
Conversion	Constant	1,000,000	MMscf/btu to scf/btu
HHV Natural Gas	Per Applicant	1,050	Btu/scf per SBCAPCD Default
Operating Schedule	Per Applicant	24	hrs/day
Operating Schedule	Per Applicant	365	days/year
Operating Schedule	Calculation	8760	hrs/yr
Fluid Heaters Maximum Natural Gas Usage	Equipment Specifications	5340	scf/hr
Fluid Heaters Maximum Natural Gas Usage	Calculated	128,160	scf/day
Fluid Heaters Maximum Natural Gas Usage	Calculated	46.778	MMscf/year
Fluid Heaters Maximum Natural Gas Usage	Calculated	0.0053	MMScf/hr
Fluid Heaters Maximum Natural Gas Usage	Calculated	5.61	MMBtu/hr
Fluid Heaters Maximum Natural Gas Usage	Calculated	135	MMBtu/day
Fluid Heaters Maximum Natural Gas Usage	Calculated	49117	MMBtu/year

Table A2-2: SOx Emission Factor Calculation

Reference	SOx Conc (ppmv)	Emission Factor (lb/mmscf)	Emission Factor (lb/mmBtu)
Uncontrolled[1]	12.6	2.1	0.0020
Controlled (SBCAPCD Rule 311)	12.6	2.1	0.0020

1) Per SoCal Gas Rule 30 total sulfur in pipeline quality natural gas shall not exceed 12.6 ppm https://tariff.socalgas.com/regulatory/tariffs/tm2/pdf/tariffs/GAS_G-RULES_30.pdf

E.F. (SOx) (lb/scf) = (ppm S / 10^6) x (1 / 379 scf/lb-mol) x (1 mol SO2 / 1 mol H2S) x (64 lb SO2/lbmol) x (10^6 scf/MMScf)

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Table A2-3: PPM Emission Factor Calculations

Emissions (lb/hr) = (ppm limit / 10^6) x (20.9/17.9) [Dimensionless O2 Correction] x (F Factor dscf/MMBtu) x (Fuel Consumed MMBtu/hr) x (1 / 379 scf/lb-mol) x (molecular weight lb /lbmol)

Table A2-3a: PPM Emission Factor Calculations for NOx

Concentration (ppm @ 3% O2)	O2 Correction	F factor[1]	Fuel Use rate	Conversion	Conversion		NOx Emissions (lb/hr)	NOx Emissions (lb/MMscf)	NOx Emissions (lb/MMBtu)
9.0 parts NOx	20.9	8,710 dscf exhaust	5.61 MMBtu	1 lbmol NOx	46 lb NOx	=	0.06	11.66	0.01
1,000,000 parts exhaust	17.9	1 MMBtu	1 hour	379 scf	1 lbmol NOx				

Table A2-3b: PPM Emission Factor Calculations for CO

Concentration	O2 Correction	F factor[1]	Fuel Use rate	Conversion	Conversion		CO Emissions (lb/hr)	CO Emission Factor (lb/MMscf)	CO Emissions (lb/MMBtu)
400.0 parts CO	20.9	8,710 dscf exhaust	5.61 MMBtu	1 lbmol CO	28 lb CO	=	1.69	315.56	0.30
1,000,000 parts exhaust	17.9	1 MMBtu	1 hour	379 scf	1 lbmol CO				

1) From EPA Method 19 Table 19-2

Table A2-4: Uncontrolled Criteria Pollutant Emissions for Thermal Dryer Combustion

Pollutant	Emission Factor Source	Emission Factor (lb/MMscf)	Emission Factor (lb/MMBtu)	Hourly (lb/hr)	Daily (lb/day)	Annual (lb/yr)	TPY
NOx	SBCAPCD Rule 342	11.66	0.0111	0.06	1.5	546	0.27
CO	SBCAPCD Rule 342	315.56	0.3005	1.69	40.4	14761	7.38
ROC	AP-42 Table 1.4-1	5.5	0.0052	0.03	0.70	257	0.13
PM/PM10/PM2.5	AP-42 Table 1.4-1	7.6	0.0072	0.04	1.0	356	0.18
SOx	SBCAPCD Rule 311		0.0020	0.01	0.27	100	0.05

lb/MMBtu = [(lb/MMscf) / (Btu/scf)]

Table A2-5: Controlled Criteria Emissions for Thermal Dryer Combustion

Pollutant	Emission Factor Source	Emission Factor (lb/MMscf)	Emission Factor (lb/MMBtu)	Hourly (lb/hr)	Daily (lb/day)	Annual (lb/yr)	TPY
NOx	SBCAPCD Rule 342	11.66	0.0111	0.06	1.5	546	0.27
CO	SBCAPCD Rule 342	315.56	0.3005	1.69	40.4	14761	7.38
ROC	AP-42 Table 1.4-1	5.5	0.0052	0.03	0.7	257	0.13
PM/PM10/PM2.5	AP-42 Table 1.4-1	7.6	0.0072	0.04	1.0	356	0.18
SOx	SBCAPCD Rule 311		0.0020	0.01	0.27	100	0.05

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Table A2-6: Toxic Emissions for Thermal Dryer Combustion

Toxics	CAS No.	SBCAPCD Approved Emission Factors December 2023 (lb/MMcf)	Abatement Factor	Maximum Hourly Controlled (lb/hr)	Annual Controlled Emissions (lb/yr)
Arsenic	7440382	2.00E-04	0%	1.07E-06	9.36E-03
Barium	7440393	4.40E-03	0%	2.35E-05	2.06E-01
Beryllium	7440417	1.20E-05	0%	6.41E-08	5.61E-04
Cadmium	7440439	1.10E-03	0%	5.87E-06	5.15E-02
Chromium 6+	18540299	5.60E-05	0%	2.99E-07	2.62E-03
Chromium (total)	7440473	1.40E-03	0%	7.48E-06	6.55E-02
Cobalt	7440484	8.40E-05	0%	4.49E-07	3.93E-03
Copper	7440508	8.50E-04	0%	4.54E-06	3.98E-02
Lead	7439921	5.00E-04	0%	2.67E-06	2.34E-02
Manganese	7439965	3.80E-04	0%	2.03E-06	1.78E-02
Mercury	7439976	2.60E-04	0%	1.39E-06	1.22E-02
Molybdenum	7439987	1.10E-03	0%	5.87E-06	5.15E-02
Nickel	7440020	2.10E-03	0%	1.12E-05	9.82E-02
Selenium	7782492	2.40E-05	0%	1.28E-07	1.12E-03
Vanadium	7440622	2.30E-03	0%	1.23E-05	1.08E-01
Zinc	7440666	2.90E-02	0%	1.55E-04	1.36E+00
Acetaldehyde	75070	4.30E-03	0%	2.30E-05	2.01E-01
Acrolein	107028	2.70E-03	0%	1.44E-05	1.26E-01
Benzene	71432	8.00E-03	0%	4.27E-05	3.74E-01
Ethyl Benzene	100414	9.50E-03	0%	5.07E-05	4.44E-01
Formaldehyde	50000	1.70E-02	0%	9.08E-05	7.95E-01
n-Hexane	110543	6.30E-03	0%	3.36E-05	2.95E-01
Naphthalene	91203	3.00E-04	0%	1.60E-06	1.40E-02
PAHs (excl. naphthalene)	1150/1151	1.00E-04	0%	5.34E-07	4.68E-03
Propylene	115071	7.31E-01	0%	3.90E-03	3.42E+01
Toluene	108883	3.66E-02	0%	1.95E-04	1.71E+00
Xylenes	1330207	2.72E-02	0%	1.45E-04	1.27E+00

Notes:

Emission Factors are from SBCAPCD Approved Emissions Factors December 2023 document section for Boilers / Heaters - Natural Gas

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Table A2-7: Dryer Operating Schedule

hours per day	24
days per week	7
weeks per year	52

Table A2-8: POC Emissions from Sludge Handling

Equipment	Emission Factor (lb/yr/MGD)[1]	Throughput (MGD)[2]	ROC Emissions (lb/hr)	ROC Emissions (lb/day)	ROC Emissions (lb/yr)
Dryer	32.69	7.64	0.03	0.69	250
		Total	**0.03**	**0.69**	**250**

1. Joint Emissions Inventory Program (JEIP) Table 1-7
2. Current NPDES permitted throughput is 7.64 MDG average dry weather flow

Table A2-9: PM Emissions from Dewatered Sludge Handling

Pollutant	Unabated PM Emission Factor (lb/hr)[2]	Abatement Efficiency	Unabated PM Emissions (lb/day)	Unabated PM Emissions (lb/yr)	Abated PM Emissions (lb/hr)	Abated PM Emissions (lb/day)	Abated PM Emissions (lb/yr)
PM (<10um and >2.5um)	0.44	86.3%	10.56	3843.84	0.06	1.45	526.61
PM2.5	0.21	61.3%	5.04	1834.56	0.08	1.95	709.97
Total PM10	**0.65**		**15.60**	**5678.40**	**0.14**	**3.40**	**1236.58**

1. Each of these operations is assumed to have 1 drop point
2. Emission Factors are from equipment specifications
3. PM2.5 is a subset of PM 10 emissions, and as a result, the PM values are not totaled for unabated, but rather PM 10 represents the total, while PM2.5 represents a portion of the PM10 emissions.
However, the abated calculations require that the abated PM2.5 emissions be calculated, and a differnet calculation be completed to determine the abated PM10 which is not accounted for by the abated PM2.5 calculation, and then these two numbers

Table A2-10: Dryer Toxic Emissions (JEIP + webfire)

CAS	Compound	Emission Speciation Factor[1]	Emission Speciation[1] % of Total ROC which is Listed Toxic	Hourly Emissions[2] (lb/hr)	Annual Emissions (lb/yr)
75070	Acetaldehyde	1.32E+01	99.68%	2.85E-02	2.49E+02
71432	Benzene	2.80E-03	0.02%	6.05E-06	5.28E-02
75092	Dichloromethane	5.70E-03	0.04%	1.23E-05	1.08E-01
50000	Formaldehyde	1.20E-03	0.01%	2.59E-06	2.26E-02
1330207	Xylenes	1.10E-02	0.08%	2.37E-05	2.07E-01
127184	Perchloroethylene	2.70E-03	0.02%	5.83E-06	5.09E-02
108883	Toluene	1.30E-02	0.10%	2.81E-05	2.45E-01
71556	1,1,1-Trichloroethane	5.70E-03	0.04%	1.23E-05	1.08E-01

1. EPA AP-42 (WebFire) "POTW: Sludge Drying Bed". Although the dryer exhaust gas may go to a carbon abatement unit, the organic toxic abatement efficiency is not guaranteed so is not included in the emission calculations.
2. Hourly emissions are assumed to be based on annual throughput and the operating schedule.

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Emission Calculations for Fire Pump Engine Maintenance Usage

Table A2-11: Equipment and Operating Parameters for the Fire Pump

Value		Units	References
Generator Rating	147.0	ekW	[8]
Operating schedule	2	hr/day	N/A
Operating schedule	50	hr/yr	[9]
Engine rating	225	bhp	[8]
Fuel use	81.05	lb/hr	N/A
Fuel use	11.50	gal/hr	[10]

Table A2-12: Constants and Parameters for the Fire Pump

Value		References
0.7457	kW/hp	Constant
453.59	g/lb	Constant
7,000	BTU/hp-hr	[5]
137,000	BTU/gal diesel	[6]
7.05	lb/gal diesel	[6]
64	lb/lb mol SO2	Constant
32	lb/lb mol S	Constant
15	ppmw S in USLD	[7]
2.85	g NOx/hp-hr	[1]
0.15	g NHMC/bhp-hr	[1]
2.60	g CO/bhp-hr	[1]
0.15	g PM/bhp-hr	[1]
24.00	hrs/day	Constant

Table A2-13: Criteria Pollutant Emissions for Fire Pump Engine Maintenance Usage

Pollutant	Emission Factor (g/bhp-hr)	References	(lb/hr)	(lb/day)	(lb/yr)	(tons/yr)
NOx	2.85	[1,2]	1.4	2.83	71	0.035
POC	0.15	[1,2]	0.07	0.15	3.7	0.0019
CO	2.6	[1]	1.29	2.58	64	0.0322
PM10/PM2.5	0.15	[1,3]	0.074	0.15	3.7	0.00186
SOx	0.0049	[4]	0.002	0.00	0.12	0.00006

Table A2-14: Toxic Air Contaminant Emissions for Fire Pump Engine Maintenance Usage

Pollutant	CAS Number	Emission Factor	Units	References	(lb/hr)*	(lb/day)	(lb/year)
Diesel PM	9901	0.15	g/bhp-hr	[1,3]	7.44E-02	0.15	3.72
Arsenic	7440382	0.0016	lb/1000 gal	[11]	1.84E-05	0.00	0.00
Cadmium	7440439	0.0015	lb/1000 gal	[11]	1.72E-05	0.00	0.00
Chromium 6+	18540299	0.0001	lb/1000 gal	[11]	1.15E-06	0.00	0.00
Chromium (total)	7440473	0.0006	lb/1000 gal	[11]	6.90E-06	0.00	0.00
Copper	7440508	0.0041	lb/1000 gal	[11]	4.71E-05	0.00	0.00
Lead	7439921	0.0083	lb/1000 gal	[11]	9.54E-05	0.00	0.00
Manganese	7439965	0.0031	lb/1000 gal	[11]	3.56E-05	0.00	0.00
Mercury	7439976	0.0020	lb/1000 gal	[11]	2.30E-05	0.00	0.00
Nickel	7440020	0.0039	lb/1000 gal	[11]	4.48E-05	0.00	0.00
Selenium	7782492	0.0022	lb/1000 gal	[11]	2.53E-05	0.00	0.00
Zinc	7440666	0.0224	lb/1000 gal	[11]	2.58E-04	0.00	0.00
Acetaldehyde	75070	0.7833	lb/1000 gal	[11]	9.01E-03	0.00	0.00
Acrolein	107028	0.0339	lb/1000 gal	[11]	3.90E-04	0.00	0.00
Ammonia	7664417	2.9000	lb/1000 gal	[11]	3.33E-02	0.00	0.00
Benzene	71432	0.1863	lb/1000 gal	[11]	2.14E-03	0.00	0.00
1,3-Butadiene	106990	0.2174	lb/1000 gal	[11]	2.50E-03	0.00	0.00
Chlorobenzene	108907	0.0002	lb/1000 gal	[11]	2.30E-06	0.00	0.00
Ethyl Benzene	100414	0.0109	lb/1000 gal	[11]	1.25E-04	0.00	0.00
Formaldehyde	50000	1.7261	lb/1000 gal	[11]	1.98E-02	0.00	0.00
n-Hexane	110543	0.0269	lb/1000 gal	[11]	3.09E-04	0.00	0.00
Hydrochloric Acid	7647010	0.1863	lb/1000 gal	[11]	2.14E-03	0.00	0.00
Naphthalene	91203	0.0197	lb/1000 gal	[11]	2.26E-04	0.00	0.00
PAHs (excl. naphthalene)	1151	0.0362	lb/1000 gal	[11]	4.16E-04	0.00	0.00
Propylene	115071	0.4670	lb/1000 gal	[11]	5.37E-03	0.00	0.00
Toluene	108883	0.1054	lb/1000 gal	[11]	1.21E-03	0.00	0.00
Xylenes	1330207	0.0424	lb/1000 gal	[11]	4.87E-04	0.00	0.00

*Speciated TACs are shown for maximum hourly emissions for the purposes of the HR.

References

[1] CARB ATCM Standards / Tier 3 Standards

NOx	CO	PM	NMHC	Units
2.85	2.60	0.15	0.15	g/bhp-hr

[2] 95% of NMHC+NOx as NOx and 5% as NMHC (POC) per 2005 Carl Moyer Guidelines Table B-22 and BAAQMD "Policy: CARB Emission Factors for CI Diesel Engines – Percent HC in Relation to NMHC + NOx" (2004) (NOx and MHC Fraction Default Values for All Engines except TRUs)

[3] Assume 100% diesel PM is <2.5 microns ("80%-95% of the mass of particles in DE is in the size range from 0.05-1.0" per EPA Health Assessment for Diesel Engine Exhaust - May 2002)

[4] SOx EF based on mass balance of 15 ppmw sulfur content in diesel fuel and engine fuel consumption rate

[5] Default Brake-Specific Fuel Capacity (BSFC) per AP-42 Table 3.3-1 (10/96)

[6] Defaults for diesel/distillate fuel oil per AP-42 Appendix A (09/85)

[7] CA diesel limited to 15 ppm sulfur for sale or supply (CCR §2281(a)(2) - Sulfur Content of Diesel Fuel)

[8] Clarke Nameplate Specific Emissions Data

[9] Maximum allowable non-emergency usage per 40 CFR 60.4211(f)

[10] Fuel use (gal/hr) calculated assuming 100% load at manufacturer rated power

[11] SBCAPCD Approved TAC Emission Factors - December 2023

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Table A2-15: Combined Stationary Sources Uncontrolled Criteria Emissions

Pollutant	Hourly (lb/hr)	Daily (lb/day)	Annual (ton/yr)
NOx	1.48	4.32	0.31
CO	2.97	43.02	7.41
ROC	0.13	1.54	0.26
PM10	0.76	16.72	3.02
PM2.5	0.32	6.16	1.10
SOx	0.01	0.28	0.05

Table A2-16: Combined Stationary Sources Controlled Criteria Emissions

Pollutant	Hourly (lb/hr)	Daily (lb/day)	Annual (ton/yr)
NOx	1.48	4.32	0.31
CO	2.97	43.02	7.41
ROC	0.13	1.54	0.26
PM10	0.26	4.52	0.80
PM2.5	0.20	3.07	0.53
SOx	0.01	0.28	0.05

Table A2-17: Combined Stationary Sources Toxic Emissions Summary

TACS	CAS No.	Maximum Hourly Controlled (lb/hr)	Total Annual Emissions (lb/yr)
Arsenic	7440382	1.95E-05	9.36E-03
Barium	7440393	2.35E-05	2.06E-01
Beryllium	7440417	6.41E-08	5.61E-04
Cadmium	7440439	2.31E-05	5.15E-02
Chromium 6+	18540299	1.45E-06	2.62E-03
Chromium (total)	7440473	1.44E-05	6.55E-02
Cobalt	7440484	4.49E-07	3.93E-03
Copper	7440508	5.17E-05	3.98E-02
Lead	7439921	9.81E-05	2.34E-02
Manganese	7439965	3.77E-05	1.78E-02
Mercury	7439976	2.44E-05	1.22E-02
Molybdenum	7439987	5.87E-06	5.15E-02
Nickel	7440020	5.60E-05	9.82E-02
Selenium	7782492	2.54E-05	1.12E-03
Vanadium	7440622	1.23E-05	1.08E-01
Zinc	7440666	4.12E-04	1.36E+00
Acetaldehyde	75070	3.75E-02	2.49E+02
Acrolein	107028	4.04E-04	1.26E-01
Ammonia	7664417	3.33E-02	-
Benzene	71432	2.19E-03	4.27E-01
1,3-Butadiene	106990	2.50E-03	-
Chlorobenzene	108907	2.30E-06	-
Ethyl Benzene	100414	1.76E-04	4.44E-01
Formaldehyde	50000	1.99E-02	8.18E-01
n-Hexane	110543	3.43E-04	2.95E-01
Hydrochloric Acid	7647010	2.14E-03	-
Naphthalene	91203	2.28E-04	1.40E-02
PAHs (excl. naphthalene)	1150/1151	5.34E-07	4.68E-03
Propylene	115071	9.27E-03	3.42E+01
Toluene	108883	1.44E-03	1.96E+00
Xylenes	1330207	6.56E-04	1.48E+00
Dichloromethane	75092	1.23E-05	1.08E-01
Perchloroethylene	127184	5.83E-06	5.09E-02
1,1,1-Trichloroethane	71556	1.23E-05	1.08E-01

Table A2-18: Land Use Operational Emissions from CalEEMod

Criteria Pollutants	Land Use Emissions (lbs/day)	Land Use Emissions (tons/year)
ROC	0.67	0.11
NO_x	3.13	0.12
CO	1.81	0.13
SO_x	0.02	0.00
Total PM_{10}	0.74	0.02
Total $PM_{2.5}$	0.24	0.01

Table A2-19: Proposed Project Operational Emissions (Stationary + Land Use)

Criteria Pollutants	Project Emissions (lbs/day)	Project Emissions (tons/year)	SBCAPCD Guidelines Threshold (lbs/day)	Significant?
ROC	2.21	0.36	240	No
NO_x	7.45	0.42	240	No
CO	44.83	7.54		
SO_x	0.30	0.05	240	No
Total PM_{10}	5.26	0.82	80	No
Total $PM_{2.5}$	4.76	0.81		

Table A2-20: Construction Greenhouse Gas Emissions Summary from CalEEMod

Phase	Greenhouse Gases	Emissions MT
Campus	CO_2	1,405
	CH_4	0.07
	N_2O	0.18
	R	0.90
	CO_2e	1,461
	Amortized CO2e Emissions	49

Source: CalEEMod

Table A2-21: Operational Greenhouse Gas Emissions from CalEEMod

Greenhouse Gases	Emissions MT/yr
CO_2	148
CH_4	0.208
N_2O	0.013
R	0.798
CO_2e	158

Source: CalEEMod

Notes:

Annual operational GHG emissions comprise direct area + direct stationary + direct mobile + indirect energy + indirect waste + indirect water usage; Direct stationary emissions are calculated separately below.

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Table A2-22: Greenhouse Gas Emissions - Stationary Sources

Greenhouse Gases	NG Emission	Natural Gas	Diesel Emission	Diesel Emissions	Total Emissions
	kG/mmBtu	MT/yr	kG/gal	MT/yr	MT/yr
CO_2	53.06	2,606	10.21	6	2,612
CH_4	1.00E-03	0.049	4.14E-04	0.00024	0.049
N_2O	1.00E-04	0.005	8.28E-04	0.00048	0.005
CO_2e		2,609		6	2,615

Sources: 40CFR Part 98 Subpart A and Subpart C

Table A2-23: Greenhouse Gas Emissions - Existing Sludge Hauling

Greenhouse Gases	Existing Emissions [1]	Project Emissions	Net Emissions from VMT
	MT/yr	MT/yr	MT/yr
CO_2	206	59	__
CH_4	0.010	0.003	__
N_2O	0.033	0.009	__
R	0.147	0.042	__
CO_2e	216	62	-154

Sources: from CalEEMod tab 4.1.1

1) for existing sludge hauling (1 truck a day, 7 days a week, 184 miles each way)

2) for proposed Project's sludge hauling (2 truck a week, 184 miles each way)

Table A2-24: Operation Greenhouse Gas Emissions Summary

GHG Emissions (MT/yr)	+CalEEMod "Land Use" Emissions [1]	-Existing Sludge Hauling	+Proposed Sludge Hauling	+Stationary Sources	Project's Operations Total GHG Emissions	Project's Operations Anthropogenic GHG Emissions
CO_2	148	206	59	2,612	2,613	7
CH_4	0.208	0.010	0.003	0.049	0.25	0.20
N_2O	0.013	0.033	0.009	0.005	-0.01	-0.01
R	0.798	0.147	0.042		0.69	0.69
CO_2e	158	216	62	2,615	**2,619**	**10**

Notes:

1 "Land Use" emission comprise Project's direct GHG area, mobile, and energy emissions as well as indirect emissions from waste and water usages, although proposed sludge hauling calculated separately.

Table A2-25: Total Greenhouse Gas Emissions Summary

GHG Emissions (MT/yr)	Amortized	Project	Project Total
CO_2e	49	10	59

Table A2-26: Greenhouse Gas Emissions Significance Evaluation

Greenhouse Gases	Emissions	Threshold	Significant?
	MT/yr	MT/yr	
CO_2e	59	1000/10,000	No

Notes:
1. Construction emissions of 1,461 MT/year have been amortized for 30 years.
2. Project Operation includes the reduction from reduced VMT associated with sludge hauling.
3. Total CO2e emissions comprises construction emissions amortized over 30 years plus annual operational emissions.
4. The significance threshold from the County's Environmental Thresholds and Guidelines Manual (2021) is used, although the 10,000 MT/year CO2e threshold from the SBCAPCD Environmental Review Guidelines (2015) would also apply.
5. Although over the County's threshold, the proposed Project will incorporate design features to reduce GHG emissions "where feasible" as allowed by the County's Manual, as well as being below the SBCAPCD's threshold.

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Table A2-27: Solar Project Greenhouse Gas Emissions Summary

Value Description	Value	Units
Marginal Ouput Emission Rate for California	1055	lb CO2/MWh
Conversion	0.000453597	MT/lb
Efficiency Factor	1.05374078	MWh Delivered/MWh Generated
Conversion	0.001	MWh/kWh
Emission Rate (Calculated)	0.000504262	MT/kWh
Solar System Rating	807	kW
Expected Production (Per Solar Design)	1414000	kWh/year
MT CO2e Reduced from Solar Panels	713	Annual MT CO2e reduced from solar operations
Estimated Amortized Construction Emissions	49	MT CO2e/year
Total GHG emission from Solar Project (MT CO2e/Yea)	-664	MT CO2e reduced from solar Project (MT CO2e/year

https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator-calculations-and-references

Emission Factor

1,405.3 lbs CO_2/MWh × 1 metric ton/2,204.6 lbs × 1/(1-0.051) MWh delivered/MWh generated × 1 MWh/1,000 kWh = 6.72 × 10^{-4} metric tons CO_2/kWh

(eGRID, U.S. national weighted average CO_2 marginal emission rate, year 2022 data)

Note:

Because the construction GHG emissions of the solar panels have not been estimated in CalEEMod to date (that project is recently started), it has been assumed that the construction activities would be at most comparable to the proposed Project and would result in up to 49 MT/year of GHG emissions after amitorization.

APPENDIX A3 – HRA DETAILS

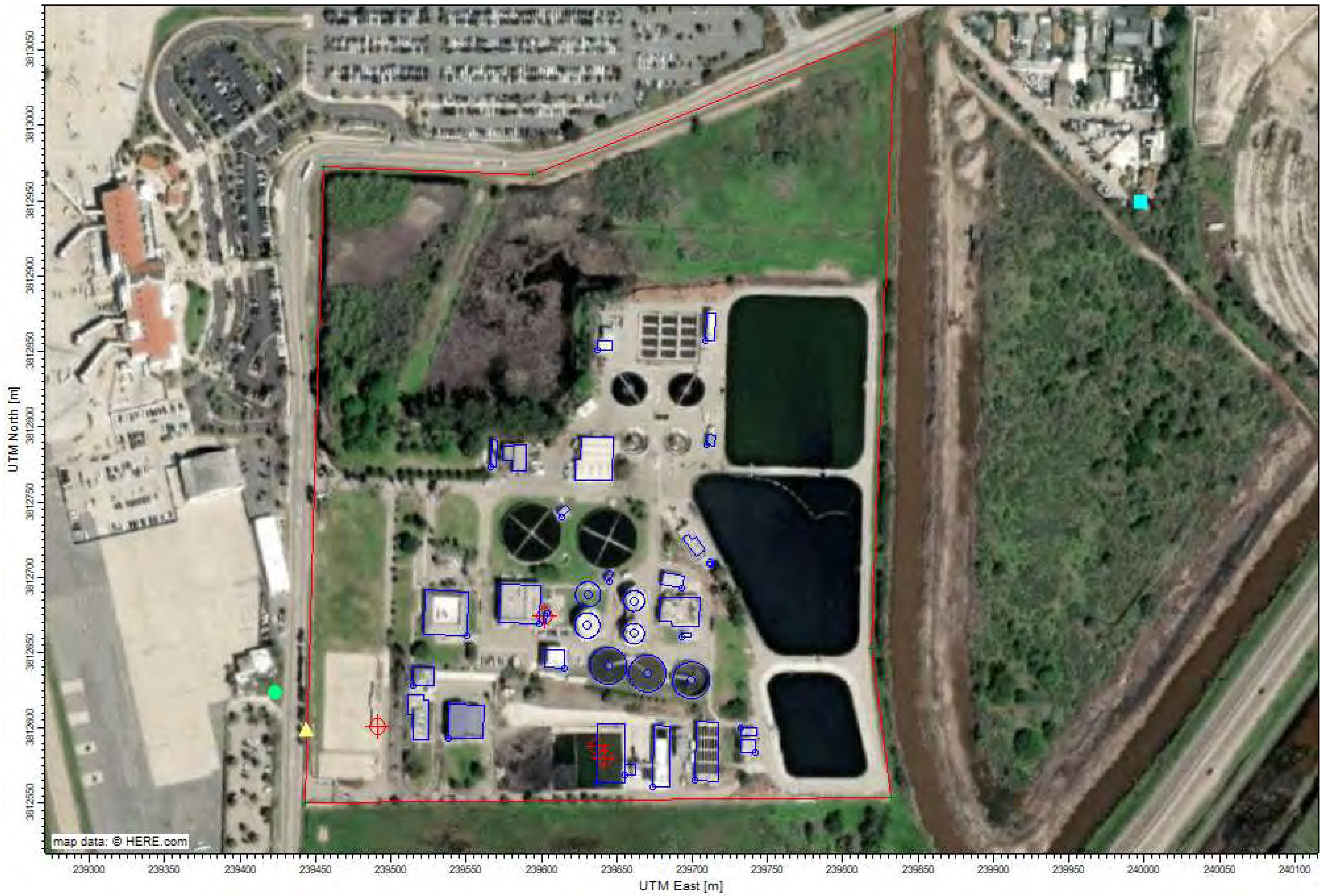
Table 3-1: Source Parameters

Source	Source ID	Source Type	Release Height (ft)	Stack Diameter (ft)	Exhaust Temp. (ºF)	Exhaust Flowrate (acfm)	UTME (m)	UTMN (m)	Stack Configuration	Reference
CHP Engine	CHP	Point	19.7	0.49	356	711	239,602.40	3,812,674.42	Vertical, no cap	ATC 15822
Thermal Fluid Heater	THERM	Point	36.5	1.17	675	2,670	239,641.35	3,812,580.21	Vertical, no cap	Fulton Companies Equipment Spec Sheet
Thermal Sludge Dryer	SLDG	Point	36.5	0.67	110	161	239,637.20	3,812,587.85	Vertical, no cap	Facility provided
Firepump Engine	FIREPUMP	POINT	7.4	0.34	899	2,000	239,490.94	3,812,601.01	Vertical, capped	SBCAPCD DICE Data

Table 3-2: Exposure Assumptions

Parameter	Assumptions				Comments
Multi-Pathway					
Inhalation	R/S	☒	W	☒	
Dermal	R/S	☒	W	☒	"Warm" climate per Section 4.4.3 of the Modeling Guidelines.
Soil	R/S	☒	W	☒	
Homegrown Produce	R/S	☒	W	☐	The assessment will use the defaults for "Households that Garden".
Mother's Milk	R/S	☒	W	☐	
Drinking Water	R/S	☐	W	☐	
Fish	R/S	☐	W	☐	
Beef/Dairy	R/S	☐	W	☐	
Pigs, Chickens, and/or Eggs	R/S	☒	W	☐	Chicken and eggs only. The assessment will use the defaults for "Households that Raise/Hunt" and will assume no drinking water from a contaminated source.
Deposition Velocity	0.05 m/s				Per SBCAPCD Comments
Residential and Sensitive Cancer Risk Assumptions					
Exposure Duration	30 years				
Fraction of Time at Home	3rd Trimester to 16 years: OFF 16 years to 30 years: ON				Per SBCAPCD Comments
Analysis Option	RMP Using the Derived Method				
Worker Cancer Risk Assumptions					
Exposure Duration	25 years				
Analysis Option	Office of Environmental Health Hazard Assessment (OEHHA) Derived Method				
Residential and Worker Non-Cancer Risk Assumptions					
Analysis Option	OEHHA Derived Method				

Figure 3-1: Receptor Locations of Maximum HRA Results Corresponding to Table 4-9



<u>Legend</u>
Light Blue Square ....Cancer Risk, Non-Cancer Chronic Risk; Resident
Green Circle ....Cancer Risk, Non-Cancer Chronic Risk; 8-hour Chronic Non-Cancer Risk; Worker
Yellow Triangle ....Acute Non-Cancer Risk; PMI

APPENDIX B – PLANT AND WILDLIFE COMPENDIUM

Plants

Vascular Species

Eudicots

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

* *Schinus terebinthifolius*—Brazilian peppertree

ASTERACEAE—SUNFLOWER FAMILY

* *Cotula australis*—Australia waterbuttons
* *Erigeron bonariensis*—asthmaweed
Erigeron canadensis—Canadian horseweed
* *Sonchus oleraceus*— common sowthistle

CACTACEAE—CACTUS FAMILY

Opuntia occidentalis —pricklypear

CHENOPODIACEAE—GOOSEFOOT FAMILY

* *Chenopodium macrospermum* —largeseed goosefoot
* *Chenopodium murale* —nettleleaf goosefoot

FABACEAE—LEGUME FAMILY

* *Acacia baileyana*— cootamundra wattle
* *Albizia lophantha*— plume albizia
* *Medicago polymorpha*—burclover

FRANKENIACEAE—FRANKENIA FAMILY

Frankenia salina—alkali heath

JUGLANDACEAE—WALNUT FAMILY

* *Juglans regia*—English walnut

MALVACEAE—MALLOW FAMILY

* *Malva parviflora*—cheeseweed mallow

MORACEAE—MULBERRY FAMILY

* *Ficus microcarpa*—Chinese banyan

MYRTACEAE—MYRTLE FAMILY

* *Eucalyptus globulus*—Tasmanian bluegum
* *Melaleuca viminalis*—weeping bottlebrush

OXALIDACEAE—OXALIS FAMILY

* *Eucalyptus citriodora*—Bermuda buttercup

PLANTAGINACEAE—PLANTAIN FAMILY

* *Plantago lanceolata*—narrowleaf plantain

POLYGONACEAE—BUCKWHEAT FAMILY

* *Polygonum aviculare*—prostrate knotweed

ROSACEAE—ROSE FAMILY

* *Rhaphiolepis indica*—Indian hawthorn

SCROPHULARIACEAE—FIGWORT FAMILY

* *Myoporum laetum*— myoporum

SOLANACEAE—NIGHTSHADE FAMILY

* *Brugmansia versicolor*— angel's trumpet

URTICACEAE—NETTLE FAMILY

Urtica dioica—stinging nettle

Monocots

AGAVACEAE—AGAVE FAMILY

* *Agave americana*—American century plant
* *Yucca elephantipes*—giant yucca

ARACEAE—ARUM FAMILY

* *Zantedeschia aethiopica*—calla lily

ARECACEAE—PALM FAMILY

* *Phoenix canariensis*—Canary Island date palm
* *Washingtonia robusta*—Washington fan palm

ASPHODELACEAE—ASPHODEL FAMILY

* *Aloe maculata*—no common name

POACEAE—GRASS FAMILY

* *Cynodon dactylon*—Bermudagrass
Festuca californica—California fescue
* *Festuca perennis*—perennial rye grass

STRELITZIACEAE—NO COMMON NAME

* *Strelitzia nicolai*—giant bird of paradise

Wildlife

Birds

Finches

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch

Spinus tristis—American goldfinch

Flycatchers

TYRANNIDAE—TYRANT FLYCATCHERS

Sayornis nigricans—black phoebe

Hawks

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Buteo jamaicensis—red-tailed hawk

Hummingbirds

TROCHILIDAE—HUMMINGBIRDS

Calypte anna—Anna’s hummingbird

Selasphorus rufus—rufous hummingbird

Jays, Magpies and Crows

CORVIDAE—CROWS AND JAYS

Aphelocoma californica—California scrub-jay

Corvus brachyrhynchos—American crow

Mockingbirds and Thrashers

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird

New World Vultures

CATHARTIDAE—NEW WORLD VULTURES

Cathartes aura—turkey vulture

Pigeons and Doves

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

* *Streptopelia decaocto*—Eurasian collared-dove

Rails, Gallinules and Coots

RALLIDAE—RAILS, GALLINULES, and **COOTS**

Fulica americana—American coot

Shorebirds

RECURVIROSTRIDAE—STILTS and **AVOCETS**

Himantopus mexicanus—black-necked stilt

CHARADRIIDAE—LAPWINGS AND PLOVERS

Charadrius vociferus—killdeer

Starlings and Allies

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

Terns and Gulls

LARIDAE—GULLS, TERNS, and **SKIMMERS**

Larus occidentalis—western gull

Waterfowl

ANATIDAE—DUCKS, GEESE, and **SWANS**

Anas platyrhynchos—mallard

Branta canadensis—Canada goose

Bucephala albeola—bufflehead

Cygnus columbianus—Tundra swan

Wood Warblers and Allies

PARULIDAE—WOOD-WARBLERS

Setophaga coronata—yellow-rumped warbler

Setophaga townsendi—Townsend's warbler

Leiothlypis celata—orange-crowned warbler

Woodpeckers

PICIDAE—WOODPECKERS AND ALLIES

Melanerpes formicivorus—acorn woodpecker

Wrentits

TIMALIIDAE—BABBLERS

Chamaea fasciata—wrentit

New World Sparrows

PASSERELLIDAE—NEW WORLD SPARROWS

Junco hyemalis—dark-eyed junco

Melospiza melodia—song sparrow

Melozone crissalis—California towhee

Zonotrichia leucophrys—white-crowned sparrow

Mammals

Squirrels

SCIURIDAE—SQUIRRELS

Spermophilus (Otospermophilus) beecheyi—California ground squirrel

* = non-native or introduced species

APPENDIX C (CONFIDENTIAL) – CULTURAL RESOURCES

Pursuant to CCR § 15120(d) the Cultural Resources Appendix is confidential and is only available to eligible individuals.

APPENDIX D – GEOTECHNICAL EVALUATION REPORT (NINYO & MOORE, APRIL 2022)

Geotechnical Evaluation

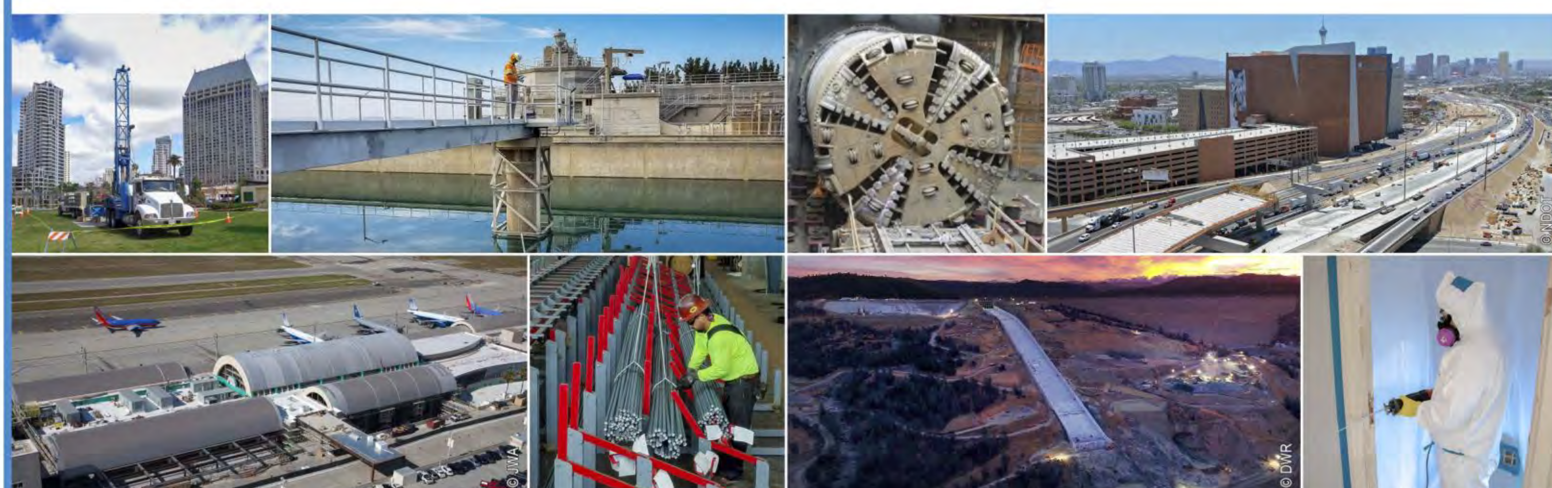
New FOG Receiving Station and Thermal Drying Facility

Goleta Sanitary District
Goleta, California

Hazen and Sawyer

90 New Montgomery Street, Suite 333 | San Francisco, California 94105

April 22, 2022 | Project No. 211573002



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Ninyo & Moore

Geotechnical & Environmental Sciences Consultants

Geotechnical & Environmental Sciences Consultants

Geotechnical Evaluation

New FOG Receiving Station and Thermal Drying Facility

Goleta Sanitary District
Goleta, California

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April 22, 2022 | Project No. 211573002

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1 INTRODUCTION

In accordance with your request and authorization, we have performed a geotechnical evaluation for the New Fats, Oil, and Grease (FOG) Receiving Station and Thermal Drying Facility as part of Phase 2 of the Biosolids and Energy Project at Goleta Sanitary District in Goleta, California (Figure 1). Ninyo & Moore previously submitted a Geotechnical Evaluation Report, dated January 29, 2021, for Phase 1 of the subject project, which addressed the design and construction of Digester 4. The current study intends to evaluate the soil and geologic conditions at the site and provide geotechnical recommendations for the design and construction of the proposed Phase 2 improvements. This report presents the findings from our background review and subsurface exploration, results of our laboratory testing, conclusions regarding the subsurface conditions at the site, and geotechnical recommendations for design and construction of this project.

2 SCOPE OF SERVICES

Our scope of services included the following:

- Project coordination, planning, and scheduling for the subsurface exploration.
- Review of readily available background materials, including published geologic and seismic hazards maps, previous reports, published literature, in-house information, stereoscopic aerial photographs, and reports and plans provided by the client.
- Obtaining a boring permit from the Santa Barbara County Public Health Department.
- A site reconnaissance, performed on March 2, 2022, to observe the general site conditions and locate the boring locations, and coordination with Goleta Sanitary District personnel and Underground Service Alert for utility clearance.
- Subsurface exploration including drilling, sampling, and logging of two small-diameter hollow-stem-auger (HSA) borings to depths of approximately 21.5 and 71 feet. The borings were logged in the field by our representative and relatively undisturbed and bulk samples were collected and returned to our laboratory for evaluation and testing. The borings were backfilled with cement-bentonite grout and excess cuttings were spread on site.
- Laboratory testing on selected soil samples including evaluation of in-situ moisture content and dry density, percent of soil particles finer than the No. 200 sieve, Atterberg limits, Modified Proctor density, direct shear strength, consolidation, and soil corrosivity characteristics (including pH, resistivity, and water soluble sulfates and chlorides).
- Two soil samples were collected to evaluate the possible chemicals present in the surficial sediments at the site. The samples were analyzed for volatile organic compounds (VOCs; EPA Method 8260B), total petroleum hydrocarbons carbon chain (TPHs; EPA Method 8015B), Title 22 Metals (EPA Method 6010B/7471A), polychlorinated biphenyls (PCBs; EPA Method 8082), organochlorine pesticides (EPA Method 8081A), and chlorinated herbicides (EPA Method 8151A).

- Data compilation and engineering analysis of the information from our background review, subsurface exploration, and laboratory testing.

- Preparation of this draft report presenting our findings, conclusions, and recommendations pertaining to the geotechnical aspects of the design and construction of the proposed improvements.

3 SITE DESCRIPTION AND PROPOSED CONSTRUCTION

The subject site is located on the northern portion of Mescalitan Island and to the east of the Goleta Slough within the Goleta Basin in Santa Barbara County. The site is bounded to the north and west by the Santa Barbara Municipal Airport, which is located within the Goleta Slough. San Pedro Creek is located to the east of Goleta Sanitary District (Figure 1). Based on our review of historic topographic maps and aerial imagery (Historic Aerials, 2022), the site was undeveloped prior to the construction of different phases of the sanitary district during 1960s to 1980s. The subject area is relatively flat with elevations of approximately 30 feet above mean sea level (MSL) (United States Geological Survey [USGS], 2018).

The proposed improvements at the site include a new FOG receiving station and a thermal drying facility. The design plans and drawings for the proposed improvements were not available at the time of preparation of this report; however, we understand that two alternative locations, to the north and west of Digester 3, are currently considered for the new FOG receiving station. We understand that the proposed thermal drying facility will be located over an area previously used as a sludge-drying bed immediately to the west of the existing dewatered bio-solids conveyor bridge. This sludge-drying bed is an approximately 2 to 3-foot deep pit and the area is currently paved with a thin layer of asphalt concrete (approximately 2 inches thick).

Numerous above ground and buried pipelines, and other pad mounted equipment associated with the existing digesters and bio-filters are currently present within the proposed construction area. We understand that the proposed facility and equipment will be founded on spread and/or mat foundations. Based on our subsurface exploration, our communications with you, and the recommendations provided in the remainder of this report, we understand that the project will involve relatively shallow grading with excavations on the order of 3 feet prior to construction of the proposed improvements. However, some small equipment for the FOG receiving station might be located as deep as approximately 8 feet below grade.

4 SUBSURFACE EVALUATION AND LABORATORY TESTING

Our geotechnical exploration was performed on March 11, 2022, to evaluate the subsurface conditions for the proposed thermal drying facility. The subsurface conditions within the area proposed for the new FOG receiving station was addressed in our previous study (Ninyo & Moore, 2021a). The current subsurface evaluation consisted of the drilling, logging, and sampling of two HSA borings (i.e., B-1 and B-2). B-1 and B-2 were drilled using a truck-mounted drill rig utilizing 8-inch-diameter augers to depths of approximately 71 and 21.5 feet, respectively. The borings were logged in the field by a representative of Ninyo & Moore. Representative bulk and relatively undisturbed samples were collected from the borings at selected depths for laboratory testing. The approximate locations of the borings drilled as part of the current evaluation and those included in our 2021 study are presented on Figure 2. The logs of the borings are presented in Appendix A.

Geotechnical laboratory testing was performed on representative soil samples collected from the borings. The laboratory testing included evaluation of in-situ moisture content and dry density, percent of soil particles finer than the No. 200 sieve, Atterberg limits, Modified Proctor density, direct shear strength, consolidation, and soil corrosivity characteristics (including pH, resistivity, and water soluble sulfates and chlorides). The results of the in-situ moisture content and dry density tests are presented on the boring logs in Appendix A. The remaining laboratory testing results are presented in Appendix B.

In addition to the geotechnical laboratory testing, analytical testing was performed on two surficial samples collected at approximate depths of 1 and 2 feet below existing grade following industry standard sampling protocols. The soil samples were then transported in an ice-cooled chest, following chain-of-custody protocols to Enthalpy Analytical, a state of California-certified analytical laboratory for analysis. The soil samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260B, Total Petroleum Hydrocarbons (TPH) [gasoline, diesel and motor oil range] using EPA Method 8015M, Organochlorine pesticides using EPA Method 8081A, Chlorinated Herbicides using 8151A, poly-chlorinated biphenyls (PCBs) using EPA Method 8082 and Title 22 Metals using EPA Method 6010B/7471A.

VOCs, organochlorine pesticides, chlorinated herbicides, PCBs, and TPH (GRO-gasoline range organics, and ORO- oil range organics) were not reported exceeding the laboratory limits in either of the samples. Low concentration of TPH (DRO- diesel range organics) was reported at 16 mg/kg in the sample collected at 2 feet from B-1. This concentration does not exceed regulatory screening levels. If the soil represented by this sample is planned for excavation and disposal, it should be characterized as 'non-hazardous petroleum hydrocarbon impacted' waste. Reported metals concentrations were within the ranges of naturally occurring background metals in California soils (Arsenic has a 12 mg/kg screening level for California soils due to naturally occurring arsenic). The results of analytical testing are provided in Appendix C.

5 GEOLOGY AND SUBSURFACE CONDITIONS

5.1 Regional Geology

The project site is situated within the northwestern portion of the Transverse Ranges geomorphic province of southern California (Norris and Webb, 1990). The Transverse Ranges geomorphic province is characterized by generally east to west-trending mountain ranges and fault systems, and is generally underlain by thick sequences of marine sedimentary rock.

The project site is located on the Santa Barbara coastal alluvial plain south of the south flank of the Santa Ynez Mountains. The site vicinity is underlain by alluvium associated with deposition of sediments from Santa Ynez Mountains. Regional geologic mapping indicates that the site is underlain by older Pleistocene siltstone terrace deposits and Miocene-age siliceous deposits of the Monterey formation (USGS, 2006). A regional geologic map is shown in Figure 3.

5.2 Site Geology

The stratigraphy and subsurface conditions for the proposed thermal drying facility were evaluated during the geotechnical exploration performed as part of the current study. For a discussion on the site geology at the area proposed for the new FOG receiving station please refer to our previous study for Phase 1 of the project (Ninyo & Moore, 2021a).

Subsurface materials encountered during our current exploration consisted of asphalt concrete (AC) pavement sections, aggregate base (AB), Portland cement concrete (PCC), fill, and marine terrace deposits. An approximately 2-inch-thick layer of AC was encountered in both borings performed for this study. In boring B-1, the AC was underlain by an AB layer, approximately 6 inches thick, and a PCC layer, approximately 12 inches thick. The AB consisted of moist, medium dense, silty sand with gravel. The AC was underlain by fill materials to approximately 3 feet below ground surface in boring B-2, which comprised of moist, medium dense, silty sand.

The marine terrace deposits were encountered in both borings to the total depth explored (starting at a depth of approximately 2 feet in B-1 and 3 feet in B-2). The marine terrace deposits were composed of moist, very stiff to hard, lean clay to a depth of approximately 10 feet and soft to moderately hard silty claystone thereafter to the total depth explored. More detailed descriptions of the subsurface materials encountered during our subsurface exploration are presented on the boring logs in Appendix A.

5.3 Groundwater

Groundwater was not encountered at the time of drilling our exploratory borings. Groundwater was measured at a property located approximately 1,400 feet northeast of the site, on the east side of San Pedro Creek, at depths as shallow as approximately 3 feet deep, which corresponds to an approximate elevation of 6 feet above MSL. Fluctuations in groundwater levels will occur due to variations in precipitation, ground surface topography, subsurface stratification, irrigation, groundwater pumping, and other factors that may not have been evident at the time of our field evaluation.

6 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. The approximate locations of major faults in the region and their geographic relationship to the project sites are shown on Figure 4. Based on our review of seismic hazard maps, geologic literature, and geologic maps, the site is not located within a State of California Earthquake Fault Zone (formerly known as Alquist-Priolo Special Studies Zone), and no active faults are known to cross the subject site (Hart and Bryant, 2007). The potentially active Mission Ridge and Red Mountain fault zones are located approximately 0.5 and 3.1 miles south of the site, respectively (USGS, 2008). The principal seismic hazards evaluated at the subject site are surface fault rupture, ground motion, liquefaction, dynamic compaction of dry soils, flood and tsunami hazards, and landslides. A brief description of these hazards and the potential for their occurrences on site are discussed in the following sections.

6.1 Surface Fault Rupture

Based on our review of the referenced literature and our site reconnaissance, no faults that are considered active by the State of California are known to cross the project site. However, as described above, the site is located within the zone of More Ranch section of the Mission Ridge fault that is considered active by the County of Santa Barbara. A previous fault rupture study concluded that breaks or offset geologic units suggestive of tectonic faulting were not observed in the vicinity of the proposed improvements. Based on the findings from the prior surface fault rupture study, the probability of damage from surface ground rupture is considered to be low. However, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

6.2 Site-Specific Ground Motion

Considering the proximity of the sites 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) requires the risk-targeted maximum considered earthquake (MCE_R) ground motion response accelerations to evaluate seismic loads for design of buildings and other structures. Based on the information from an available online database

(Wills et al. 2015; Thompson, 2018), the average shear wave velocity for the upper 30 meters of soil layers ($V_{s,30}$) used in the seismic analysis was 293.5 meters per second. Accordingly, the site is classified as Site Class D. Per the 2019 CBC, site-specific ground motion hazard analysis needs to be performed following the guidelines presented in Sections 21.2 and 21.3 of American Society of Civil Engineers (ASCE) Publication 7-16 for soil deposits classified as Site Class D with mapped S_1 (spectral response acceleration at a period of 1 second) greater than or equal to 0.2g. Since the S_1 is 0.831g at the site (per ASCE 7-16, using the 2022 Applied Technology Council [ATC] web-based seismic design tool), site-specific ground motion hazard analysis was performed to evaluate the ground motion characteristics at the site.

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 5-percent-damped acceleration response spectrum (ARS) curves corresponding to the MCE_R. 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, 2022).

The 2014 next generation attenuation (NGA) West-2 relationships were used to evaluate the site-specific ground motions. The NGA relationships used for developing the probabilistic and deterministic response spectra were those 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 (Field et al., 2003) was used for performing the PSHA. The Calculation of Weighted Average 2014 NGA Models spreadsheet developed by the Pacific Earthquake Engineering Research Center was used for performing the DSHA (Seyhan, 2014).

PSHA was performed for earthquake hazards having a 2 percent probability of being exceeded in 50 years adjusted for the risk factors per ASCE 7-16. The maximum rotated components of 5-percent-damped ground motions were considered in PSHA. The DSHA considers accelerations from characteristic earthquakes on active faults within the region using the hazard curves and deaggregation plots at the site using the USGS Unified Hazard Tool application (USGS, 2022). A magnitude 7.4 event on the Red Mountain fault was deemed to be the controlling earthquake. The DSHA was performed for the site using this event and corrections were applied to 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 considered as the lesser of the PSHA and DSHA spectral response acceleration at any period, and the site-specific design 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 and design response spectra as well as the general mapped design response spectra calculated in accordance with Section 11.4 of ASCE 7-16. The site-specific spectral acceleration parameters, obtained from ground motion hazard analysis, are presented in Section 8.3 for evaluation of seismic loads on buildings and other structures. The site-specific MCE_G (maximum considered earthquake geometric mean) peak ground acceleration, PGA_M, was calculated as 1.04g.

6.3 Liquefaction Potential

Liquefaction is the phenomenon in which loosely deposited granular soils 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 the ground surface. Liquefaction is also known to occur in relatively fine-grained soils (i.e., sandy silt and clayey silt) with a plasticity index (PI) of less than 12 and an in-place moisture content more than 85 percent of the liquid limit (LL) and sensitive silts and clays with a PI more than 18. 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.

The Santa Barbara County Comprehensive Plan Seismic Safety & Safety Element (County of anta Barbara, 2010) indicates that the subject site is located in an area with a moderate rating or liquefaction (Figure 6). However, given that the subsurface materials encountered during our exploration predominantly consist of hard, lean clay deposits and silty claystone, liquefaction and liquefaction-related seismic hazards (e.g., dynamic settlement, ground subsidence, and/or lateral spreading) are not a design consideration for the project.

6.4 Dynamic Compaction of Dry Soils

Relatively dry soils (e.g., soils above the groundwater table) with low density or softer consistency tend to undergo a degree of compaction during a seismic event. Earthquake shaking often induces significant cyclic shear strain in a soil mass, which responds to the vibration by undergoing volumetric changes. Volumetric changes in dry soils take place primarily through changes in the void ratio (usually contraction in loose or normally consolidated soft soils, and dilation in dense or overconsolidated stiff soils) and secondarily through particle reorientation. Such volumetric changes are generally non-recoverable. Based on our subsurface exploration, the marine terrace deposits at the site generally consist of hard, lean clay and silty claystone deposits. Accordingly, it is our opinion that dynamic compaction of dry soils is not a design consideration for the project.

6.5 Flood and Tsunami Hazards

Based on our review of the City of Goleta Fire, Flood and Tsunami Hazards map (City of Goleta, 2016), the project site is not located in the 100-year Flood Hazard Zone, but is located within the 500-year flood zone (Figure 7). Tsunamis are long wavelength seismic, sea waves (long compared to ocean depth) generated by the sudden movements of the ocean floor during submarine earthquakes, landslides, or volcanic activity. The project area is not mapped within an area considered susceptible to tsunami inundation. Therefore, damage due to tsunamis is not a design consideration for this project.

6.6 Landslides

Based on our site reconnaissance and review of published geologic maps, and stereoscopic aerial photographs as well as review of the City of Goleta Geologic Hazards Map (City of Goleta, 2009), landslides are not considered to be a potential hazard at the site.

7 CONCLUSIONS

Based on our evaluation, it is our opinion that proposed construction is feasible from a geotechnical perspective, provided the recommendations presented in this report are incorporated into the design and construction of the project. In general, the following additional conclusions were made:

- The exploration performed as part of the current study addressed the subsurface conditions for the proposed thermal drying facility. Based on our study, the proposed thermal drying facility site is underlain by marine terrace deposits beneath the pavement. An approximately 2-inch-thick layer of AC was encountered in both borings. In boring B-1, the AC was underlain by an AB layer, approximately 6 inches thick, and a PCC layer, approximately 12 inches thick. The AB consisted of moist, medium dense, silty sand with gravel. The AC was underlain by fill materials to approximately 3 feet below ground surface in boring B-2, which generally comprised of moist, medium dense, silty sand. The marine terrace deposits were encountered in both borings to the total depth explored. The marine terrace deposits were composed of moist, very stiff to hard, lean clay to a depth of approximately 10 feet and soft to moderately hard silty claystone thereafter to the total depth explored.

- The subsurface conditions at the area proposed for the new FOG receiving station was evaluated in our 2021 study as part of Phase 1 of the subject project. Based on the referenced study, the FOG receiving station will be underlain by fill soils consisting of silty sand marine terrace deposits consisting of unconsolidated sand, silty sandstone and silty claystone, and siltstone bedrock materials of the Monterey Formation.

- Excavations for the construction of both FOG receiving station and thermal drying facility should be feasible with heavy duty equipment in good working condition.

- The on-site soils encountered in our borings for the proposed thermal drying facility (beneath the existing sludge-drying beds) may be subject to compression and are not considered suitable to support the proposed thermal drying facility foundations. In order to improve the bearing conditions, supporting the proposed foundations on 3 feet or more of granular materials is appropriate. The granular materials that will be generated during excavation of the FOG and the proposed new digester are anticipated to be suitable to support the new thermal drying facility foundations. However, the clayey soils may be used for general fill material beyond the limits of the new structures and for utility trench backfill, but should not be used as structure backfill for structures such as buried vaults. Placement of fill will involve moisture conditions to reach near-optimum moisture conditions.

- Although not encountered in our recent borings, the contractor should anticipate handling oversize materials during grading and construction. The limits of the buried concrete encountered beneath the sludge drying beds is unknown. Depending on the amount present, some of the concrete and asphalt concrete at the bottom of the sludge drying bed may be incorporated into the compacted fill, provided that the material is broken down to 4 inches in diameter or less and kept to a depth of 2 feet below the bottom of the foundations or finish ground surface.

- Groundwater was not encountered during our current subsurface exploration. Groundwater is not anticipated to be a design consideration for the project. Fluctuations in groundwater levels may occur due to variations in precipitation, ground surface topography, subsurface stratification, irrigation, groundwater pumping, and other factors which may not have been evident at the time of our field evaluation.

- Reported concentrations of chemicals did not exceed regulatory screening levels indicating contamination from external sources.

- The site soils are not subject to dynamic settlement due to earthquake-induced liquefaction or dynamic compaction of dry soils.

- The subject site is not located within a State of California Earthquake Fault Zone. However, the site is located near the More Ranch Fault, which is considered active by the County of Santa Barbara.

- Our limited laboratory corrosivity testing indicates that the on-site materials can be classified as corrosive based on the California Department of Transportation (Caltrans, 2021) corrosion guidelines.

8 RECOMMENDATIONS

The recommendations presented in the following sections provide geotechnical criteria regarding the design and construction of the proposed site improvements. The recommendations are based on the results of our subsurface evaluation, geotechnical analysis, and our project understanding. Detailed construction drawings and foundation loading information were not available at the time this report was prepared. We recommend that the final construction drawings be submitted to Ninyo & Moore for review to evaluate conformance to the geotechnical recommendations provided in this report. Additional or revised recommendations may be appropriate. The proposed work should be performed in conformance with the recommendations presented in this report, project specifications, and appropriate agency standards.

8.1 Earthwork

Based on our understanding of the project, earthwork at the site is anticipated to consist of site clearing, remedial grading to prepare the ground surface for the new structures, trenching and backfilling associated with underground utility installation, and finished grading for establishment of site drainage. It is our understanding that the approximately 2 to 3-foot deep sludge drying bed will be filled to the approximate surrounding grade. Earthwork operations at the site should be performed in accordance with the recommendations provided in the following sections of this report and applicable governing agencies.

8.1.1 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 attend to discuss the work plan, project schedule, and earthwork requirements.

8.1.2 Demolition, Clearing, and Grubbing

Prior to performing excavations or other earthwork, the area should be cleared of existing structures, water piping under and above the ground, AC and PCC pavements, rubble and debris, abandoned utilities, surface obstructions, and other deleterious materials. Existing utilities within the project limits should be re-routed or protected from damage by construction activities. Materials generated from the clearing operations should be removed from the project site and disposed of at a legal dumpsite.

8.1.3 Excavation Characteristics

Based on our field exploration, we anticipate that excavations at the site may be accomplished with conventional earthmoving equipment in good working condition. Excavations are not anticipated to encounter hard claystone and sandstone terrace deposit materials that would involve additional excavating effort. Contractors should make their own independent evaluation of the excavatability of the on-site materials prior to submitting their bids.

8.1.4 Temporary Excavations and Shoring

We recommend that excavations be designed and constructed in accordance with Occupational Safety and Health Administration (OSHA) regulations. These regulations provide shoring design parameters for excavations and trenches up to 20 feet deep based on the soil types encountered. Trenches over 20 feet deep should be designed by the contractor's engineer based on site-specific geotechnical analyses. For planning purposes, we recommend that alluvium be considered as OSHA Type C soil. For trench or other excavations, OSHA requirements regarding personnel safety should be met by using appropriate shoring or by laying back the slopes no steeper than 1½:1 (horizontal to vertical) in the alluvium. Temporary excavations that encounter seepage may need shoring or may be mitigated by placing sandbags or gravel along the base of the seepage zone. Excavations encountering seepage should be evaluated on a case-by-case basis.

Where slopes cannot be laid back, shoring may be appropriate. If shoring systems are used for site excavations, they should be designed for the anticipated soil conditions using the lateral earth pressure values presented on Figures 8 and 9 for cantilevered and braced shoring systems, 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.

We anticipate that settlement of the ground surface will occur behind the shored excavations. The amount of settlement depends heavily on the type of shoring system, the contractor's workmanship, and soil conditions. To reduce the potential for distress to adjacent improvements, we recommend that the shoring system be designed to limit the ground settlement behind the shoring system to ½ inch or less. Possible causes of settlement that should be addressed include settlement during installation of the shoring elements, excavation for structure construction, construction vibrations, and removal of the support system. We recommend that shoring installation be evaluated carefully by the contractor prior to construction and that ground vibration and settlement monitoring be performed during construction.

8.1.5 Subgrade Preparation

After the site has been cleared of surface improvements and obstructions, remedial grading operations can be performed to support the construction of the proposed improvements. We understand that both FOG receiving station and thermal drying facility (after filling of the 2 to 3-foot deep sludge drying bed) will be constructed at grade. In order to provide suitable support and reduce the potential settlement, we recommend that remedial grading is performed to remove the existing fill materials beneath the pavements in the sludge drying bed to expose competent native terrace deposits prior to placing fill to reach the foundation subgrade elevation. In order to provide suitable foundation support, we recommend that the upper approximately 3 feet of fill below the bottom of the foundations consist of granular soil, as further described in the following section. The limits of the excavation should extend laterally so that the bottom of the excavation is approximately 3 feet beyond the edge of the foundations.

We understand that some equipment will be installed as deep as 8 feet below the existing grade. Additional overexcavation is not needed for these deeper features, provided that they are founded on exposed competent terrace deposits.

Prior to placing newly compacted fill or placing the below-grade equipment on the deeper competent materials, the exposed bottom should be scarified, moisture-conditioned, and recompacted to a depth of approximately 8 inches. The excavation bottoms should be evaluated by our representative during the excavation work. Additional overexcavation of loose, soft, and/or wet areas may be appropriate, depending on our observations during construction.

8.1.6 Fill Material

Given that clayey materials were consistently encountered during our subsurface exploration for the thermal drying facility, the on-site soils are not suitable for use below the thermal drying facility foundations or as structure backfill for buried vaults. However, the clayey soils may be re-use as general fill beyond the structures and for trench backfill. Import materials should consist of clean, non-expansive, granular material, which conforms to the latest edition of "Greenbook" Standard Specifications for Public Works Construction for structure backfill in accordance with ASTM D 4829 (CBC, 2019). "Non-expansive" can be defined as soil having an EI of 20 or less in accordance with ASTM International (ASTM) D 4829 (CBC, 2019). Soil should also be tested for corrosive properties prior to importing. We recommend that the imported materials comply with the Caltrans (2018) criteria for non-corrosive soils (i.e., soils having a chloride concentration of 500 parts per million (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, and a resistivity of 1,100 ohm-centimeters [ohm-cm] or more). Materials for use as fill should be evaluated by the geotechnical consultant prior to importing. The contractor should be responsible for the uniformity of import material brought to the site.

8.1.7 Fill Placement and Compaction

Fill placed for support of the proposed structures or other site improvements such as new vaults and trench backfill should be compacted in horizontal lifts to a relative compaction of 90 percent or more as evaluated by ASTM D 1557. Fill soils should be placed at slightly above the optimum moisture content as evaluated by ASTM D 1557. The optimum lift thickness of fill will depend on the type of compaction equipment used but generally should not exceed 8 inches in loose thickness. Placement and compaction of the fill soils should be in general accordance with appropriate governing agency grading ordinances and good construction practice.

8.2 Underground Utilities

We anticipate that utility pipelines will be installed as a part of the subject project that will be supported on fill and, depending on the depths, on terrace deposits. The depths of the pipelines are not known; however, we anticipate that the pipe invert depths will not exceed 10 feet. Trenches should not be excavated adjacent to footing foundations of existing structures or earthen berms. If needed, trenches can be excavated adjacent to a continuous footing or berms provided that the bottom of the trench is located above a 1:1 plane projected downward from the bottom of the adjacent footing or toe of the berm. Utility lines that cross beneath footings or berms should be encased in concrete below the footing/berm.

8.2.1 Pipe Bedding

We recommend that pipelines be supported on 6 inches or more of granular bedding material such as sand with a sand equivalent value of 30 or more. Bedding material should be placed and compacted around the pipe, and 12 inches or more above the top of the pipe in accordance with the current “Greenbook” Standard Specifications for Public Works. 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.

Where soft, wet soil conditions are encountered, the trench excavation should be excavated approximately 1 to 2 feet or more below the pipe invert and should be backfilled with gravel wrapped in filter fabric. 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 along both sides of the pipe concurrently and be compacted to 90 percent or more relative compaction as evaluated by ASTM D 1557.

8.2.2 Modulus of Soil Reaction

The modulus of soil reaction is used to characterize the stiffness of soil backfill placed on the sides of buried flexible pipelines for the purpose of evaluating lateral 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 relatively granular bedding material is placed adjacent to the pipe, as recommended in this report.

8.3 Site-Specific Seismic Design Considerations

Seismic design of the proposed improvements should be performed in accordance with the requirements of the governing jurisdictions and applicable building codes. Table 1 presents the site-specific spectral response acceleration parameters in accordance with the CBC (2019) guidelines.

Table 1 – 2019 California Building Code Seismic Design Criteria

Site-Specific Spectral Response Acceleration Parameters	Value
Site Class	D
Mapped Spectral Response Acceleration at 0.2-second Period, S_s	2.370g
Mapped Spectral Response Acceleration at 1.0-second Period, S_1	0.831g
Site-Modified Spectral Response Acceleration at 0.2-second Period, S_{MS}	2.373g
Site-Modified Spectral Response Acceleration at 1.0-second Period, S_{M1}	2.224g
Design Spectral Response Acceleration at 0.2-second Period, S_{DS}	1.582g
Design Spectral Response Acceleration at 1.0-second Period, S_{D1}	1.483g
Maximum Considered Earthquake Geometric Mean (MCE_G) Peak Ground Acceleration, PGA_M	1.040g

8.4 Foundations

The proposed structures may be supported on shallow foundations including square and continuous footings and mat foundations. Foundations should be designed in accordance with structural considerations and the following recommendations. When construction drawings and foundation loading information are available, they should be forwarded to our office for review. Additional or revised recommendations may be appropriate. In addition, requirements of the appropriate governing jurisdictions and applicable building codes should be considered in the design of the structures.

8.4.1 Square and Continuous Foundations

Square and continuous footings should be at least 24 inches wide and extend 24 inches or more below the adjacent finished grade. Spread footings should be reinforced with a minimum of two No. 4 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. Given that the subsurface conditions encountered at the location of proposed thermal facility is different than that encountered for the FOG receiving station, the bearing capacity recommendation is also different for each structure.

For the proposed thermal facility, footings may be designed using an allowable bearing capacity of 2,500 pounds per square foot (psf). The allowable bearing capacity may be increased by one-third when considering loads of short duration such as wind or seismic forces. Please note that the allowable bearing capacity cannot be increased for footings of different size and/or embedment depth.

The footings for the FOG receiving station may be designed using an allowable bearing capacity of 3,000 pounds per square foot (psf). The allowable bearing capacity may be increase by 400 and 800 psf for each additional foot of width and depth, respectively, to a value of 5,000 psf. The allowable bearing capacity may be increased by one-third when considering loads of short duration such as wind or seismic forces.

Total and differential settlements for footings designed and constructed in accordance with the above recommendations are estimated to be less than approximately 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. Footings may be designed using a passive resistance of 350 psf per foot of depth for level ground condition 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 passive resistance may be increased by one-third when considering loads of short duration such as wind or seismic forces.

8.4.2 Mat Foundations

We understand that the proposed thermal drying facility might be supported on a mat foundation. Mat foundations should be founded approximately 2 feet below the adjacent finish grade and designed using a net allowable bearing capacity of 2,500 psf and a coefficient of friction for sliding resistance of 0.35. Under the static loading condition, the total and differential settlement corresponding to this allowable bearing load are estimated to be less than approximately 1 inch and ½ inch over a horizontal span of 30 feet, respectively.

Mat foundations typically experience some deflection due to loads placed on the mat and the reaction of the soils directly underlying the mat. A design modulus of subgrade reaction (K) of 30 kips per cubic foot (kcf) may be used for the subgrade soils in evaluating such deflections.

8.5 Slabs-On-Grade

Floor slabs subjected to dead and live loads should be designed by the project structural engineer based on the anticipated loading conditions. Floor slabs should be underlain by compacted soil prepared with the recommendations presented in this report. We recommend that slabs be 6 inches thick and reinforced with No. 4 steel reinforcing bars placed 24 inches on-center (each way) 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 foundation should be tied together by extending the slab reinforcements into the foundation.

The slab should be underlain by a 4-inch-thick, or more, layer of sand or gravel with a particle size of approximately 3/8-inch or smaller. Soils underlying the slab 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.

8.6 Corrosivity

Laboratory testing was performed on one representative soil sample to evaluate pH, electrical resistivity, water-soluble chloride content, and water-soluble sulfate content. The soil pH and electrical resistivity tests were performed in general accordance with California Test Method (CT) 643. Chloride content test was performed in general accordance with CT 422. Sulfate testing was performed in general accordance with CT 417. The laboratory test results are presented in Appendix B.

The results of the corrosivity testing indicated a soil pH of 7.2. The electrical resistivity was 683 ohm-cm; the chloride content was 240 ppm; the sulfate content was 0.036 percent (i.e., 360 ppm). Based on the laboratory test results and Caltrans (2021) criteria, the soils at the project site can be classified as corrosive, which is defined as having earth materials with more than 500 ppm chlorides, more than 1,500 ppm sulfates, a pH of 5.5 or less and an electrical resistivity of 1,500 om-cm or less. Due to the close proximity to the ocean, we recommend that the proposed concrete members be designed in accordance with American Concrete Institute Standard Guidelines ACI 318-19 (ACI, 2019).

8.7 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. The soil sample tested for this evaluation, using Caltrans Test Method 417, indicates a water-soluble sulfate content of 0.036 percent by weight (i.e., 360 ppm). Accordingly, the on-site soils are considered to have a negligible potential for sulfate attack. However, due to the potential variability of the soils on site, consideration should be given to using Type II/V cement for the project.

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.

8.8 Drainage

Proper surface drainage is imperative for performance of site improvements. Positive drainage should be provided and maintained to transport surface water away from foundations and other site improvements. Positive drainage incorporates a slope of 2 percent or more over a distance of 5 feet or more away from structures, pavements, and top of slopes. Surface water should not be allowed to flow over slope faces or pond adjacent to footings.

9 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 observed in our exploratory borings. It is imperative that the geotechnical consultant checks the subsurface conditions during construction.

During construction, we recommend that the duties of the geotechnical consultant include, but not be limited to:

- Observing clearing, grubbing, and removals.

- Observing remedial grading excavation bottoms, and placement and compaction of fill, including trench backfill.
- Evaluating on-site soil for suitability as use as engineered fill/structural backfill prior to placement.
- Evaluating imported materials prior to their use as fill, if used.
- 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 are based on the assumption that Ninyo & Moore will provide geotechnical observation and testing services during construction. In the event that the services of Ninyo & Moore are not utilized during construction, we request that the selected consultant provide the owner with a letter (with a copy to Ninyo & Moore) indicating that they fully understand Ninyo & Moore's recommendations, and that they are in full agreement with the design parameters and recommendations contained in this report.

10 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.

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

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE: USGS, 2018.

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FIGURE 1

SITE LOCATION

NEW FOG RECEIVING STATION AND THERMAL DRYING FACILITY
GOLETA, CALIFORNIA

211573002 I 4/22

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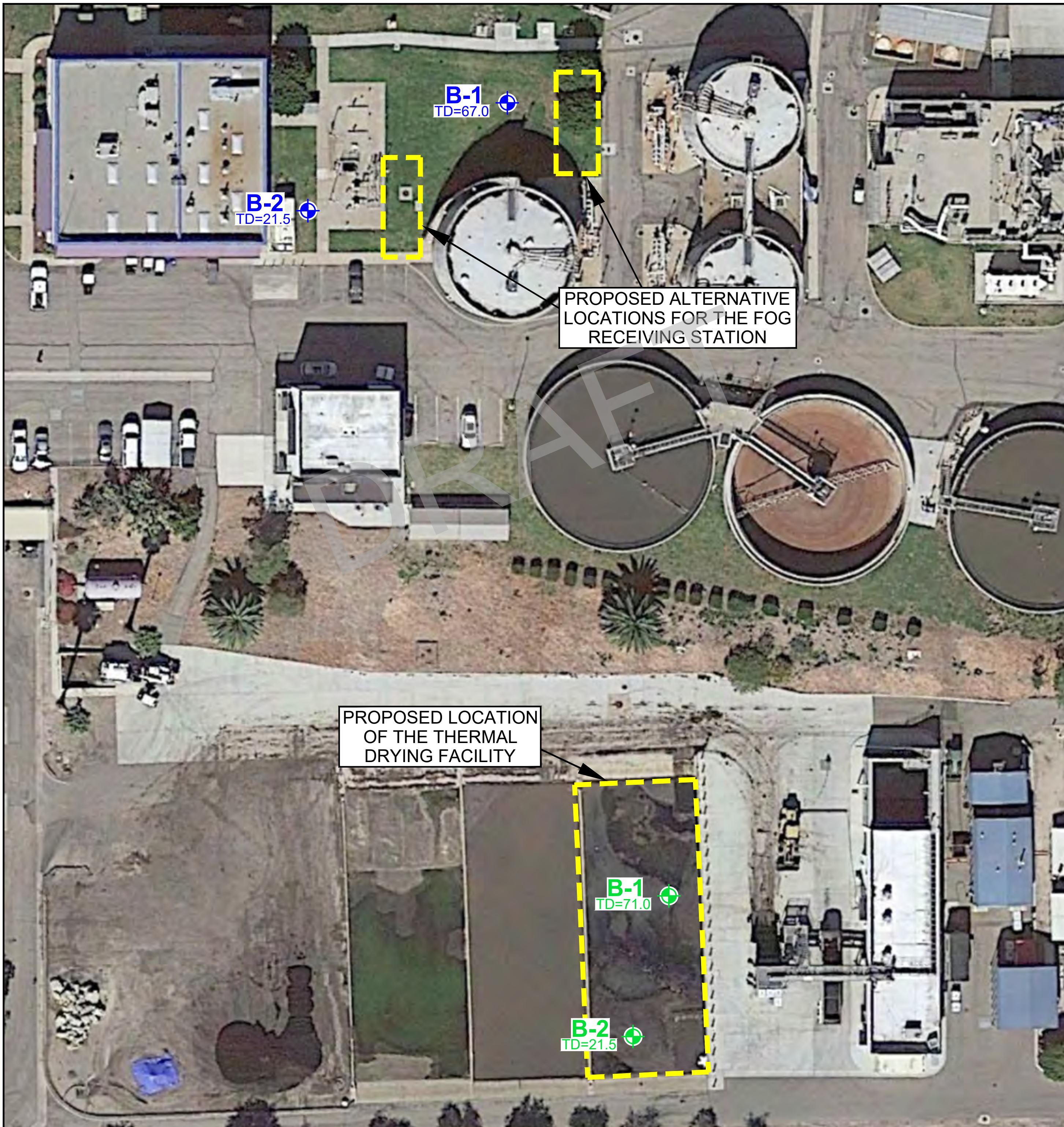

LEGEND

B-1 TD=21.5 — BORING (2022); TD=TOTAL DEPTH IN FEET

B-1 TD=21.5 — BORING (2020); TD=TOTAL DEPTH IN FEET

N

FEET 0 60 120

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE: GOOGLE EARTH, 2022.

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FIGURE 2

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BORING LOCATIONS

NEW FOG RECEIVING STATION AND THERMAL DRYING FACILITY
GOLETA, CALIFORNIA

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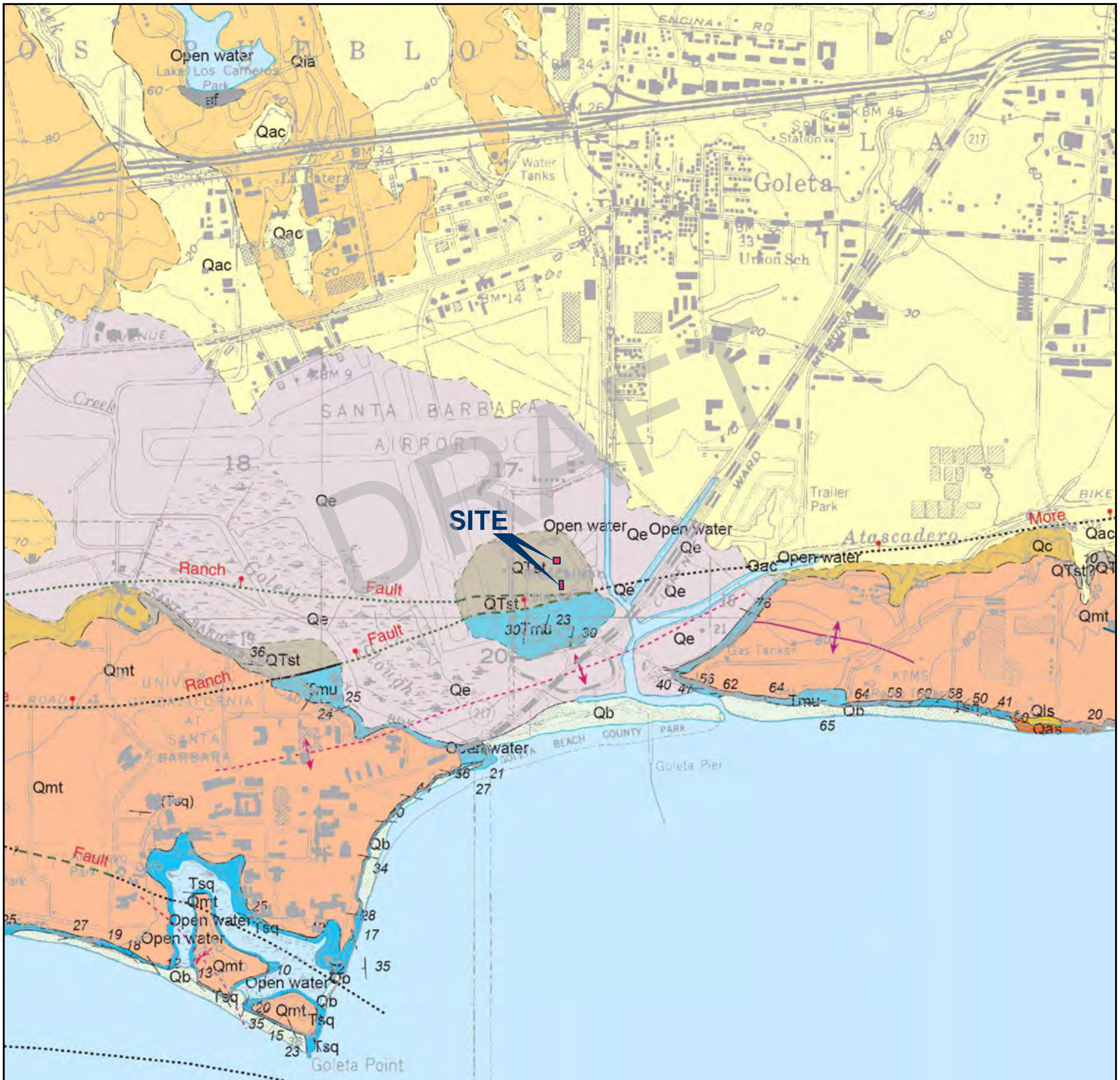

LEGEND

Qb	BEACH DEPOSITS
Qe	ESTUARINE DEPOSITS
Qmt	MARINE TERRACE DEPOSITS
QTst	SILTSTONE UNIT
Tmu	MONTEREY FORMATION, UPPER SILICEOUS UNIT
— — ·····	FAULT (DASHED WHERE INFERRED, DOTTED WHERE CONCEALED)
~	GEOLOGIC CONTACT

N

FEET
0 2,000 4,000

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE: SCOTT A. MINOR, ET AL., 2006.

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FIGURE 3

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REGIONAL GEOLOGY

NEW FOG RECEIVING STATION AND THERMAL DRYING FACILITY
GOLETA, CALIFORNIA

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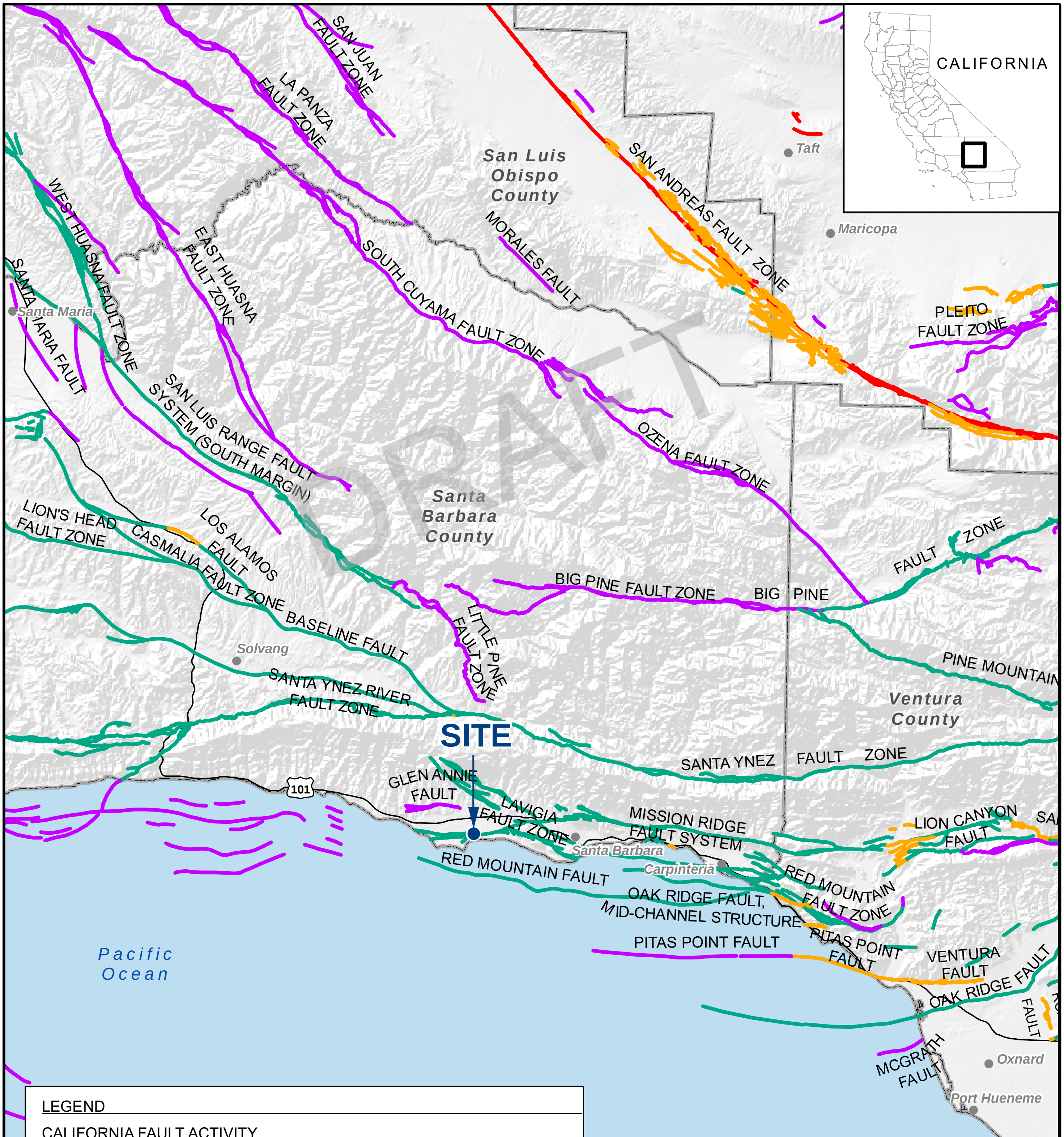

LEGEND

CALIFORNIA FAULT ACTIVITY

- HISTORICALLY ACTIVE
- HOLOCENE ACTIVE
- LATE QUATERNARY (POTENTIALLY ACTIVE)
- QUATERNARY (POTENTIALLY ACTIVE)
- QUATERNARY (INACTIVE)
- STATE/COUNTY BOUNDARY

SOURCES: CALIFORNIA DIVISION OF MINES AND GEOLOGY, 1976, ENVIRONMENTAL GEOLOGY OF ORANGE COUNTY, CALIFORNIA, OPEN FILE REPORT 79-8.; JENNINGS, C.W., AND BRYANT, 2010, FAULT ACTIVITY MAP OF CALIFORNIA; ESRI SHADED RELIEF, 2017

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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FIGURE 4

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FAULT LOCATIONS

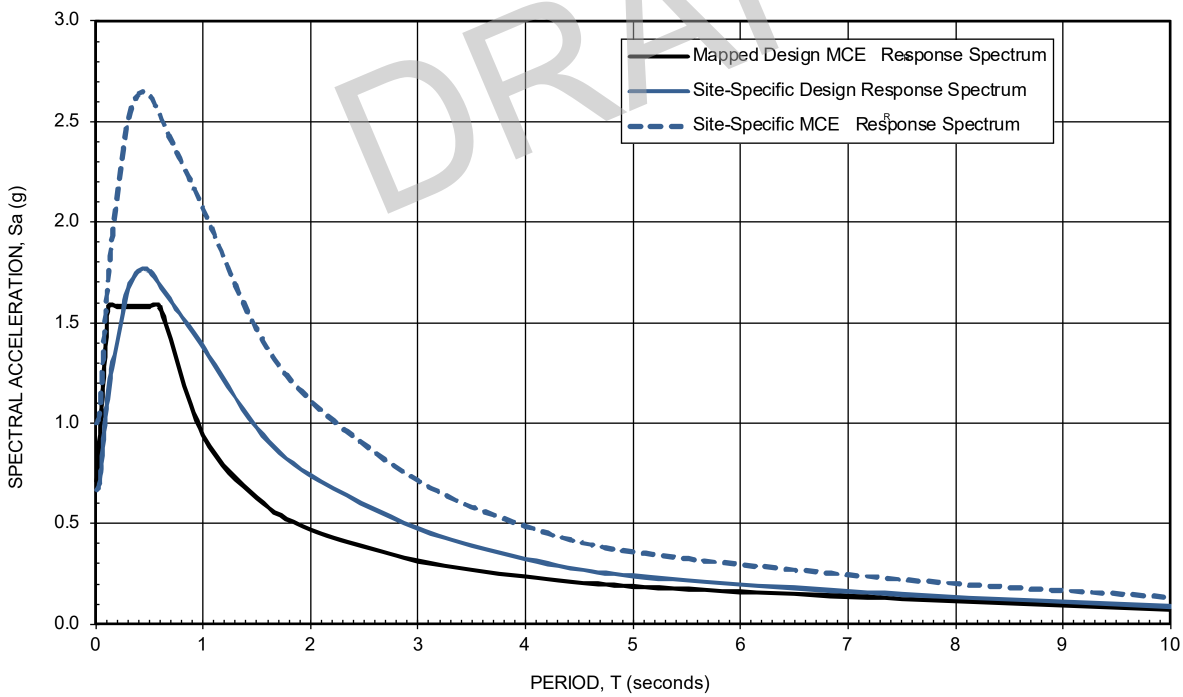
NEW FOG RECEIVING STATION AND THERMAL DRYING FACILITY
GOLETA, CALIFORNIA

211573002 | 4/22

PERIOD (seconds)	SITE-SPECIFIC MCE_R RESPONSE SPECTRUM Sa (g)	SITE-SPECIFIC DESIGN RESPONSE SPECTRUM Sa (g)
0.010	1.001	0.667
0.020	1.007	0.672
0.030	1.026	0.684
0.050	1.142	0.761
0.075	1.380	0.920
0.100	1.602	1.068
0.150	1.901	1.267
0.200	2.112	1.408
0.250	2.313	1.542
0.300	2.505	1.670
0.400	2.637	1.758

PERIOD (seconds)	SITE-SPECIFIC MCE_R RESPONSE SPECTRUM Sa (g)	SITE-SPECIFIC DESIGN RESPONSE SPECTRUM Sa (g)
0.500	2.636	1.758
0.750	2.353	1.569
1.000	2.069	1.379
1.500	1.466	0.977
2.000	1.112	0.741
3.000	0.713	0.475
4.000	0.487	0.325
5.000	0.359	0.239
7.500	0.222	0.148
10.000	0.133	0.089

S_{DS} =	1.582 g	S_{D1} =	1.483 g	S_{MS} =	2.373 g	S_{M1} =	2.224 g	PGA_M =	1.040 g



NOTES:

1 The probabilistic ground motion spectral response accelerations are based on the risk-targeted Maximum Considered Earthquake (MCE_R) having a 2% exceedance in 50 years in the maximum direction using the Chiou & Youngs (2014), Campbell & Bozorgnia (2014), Boore et al. (2014), and Abrahamson et al. (201 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 e on the Red Mountain Fault fault zone located 4.1 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_R Response 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

NEW FOG RECEVING STATION AND THERMAL DRYING FACILITY
GOLETA, CALIFORNIA

211573002 I 4/22

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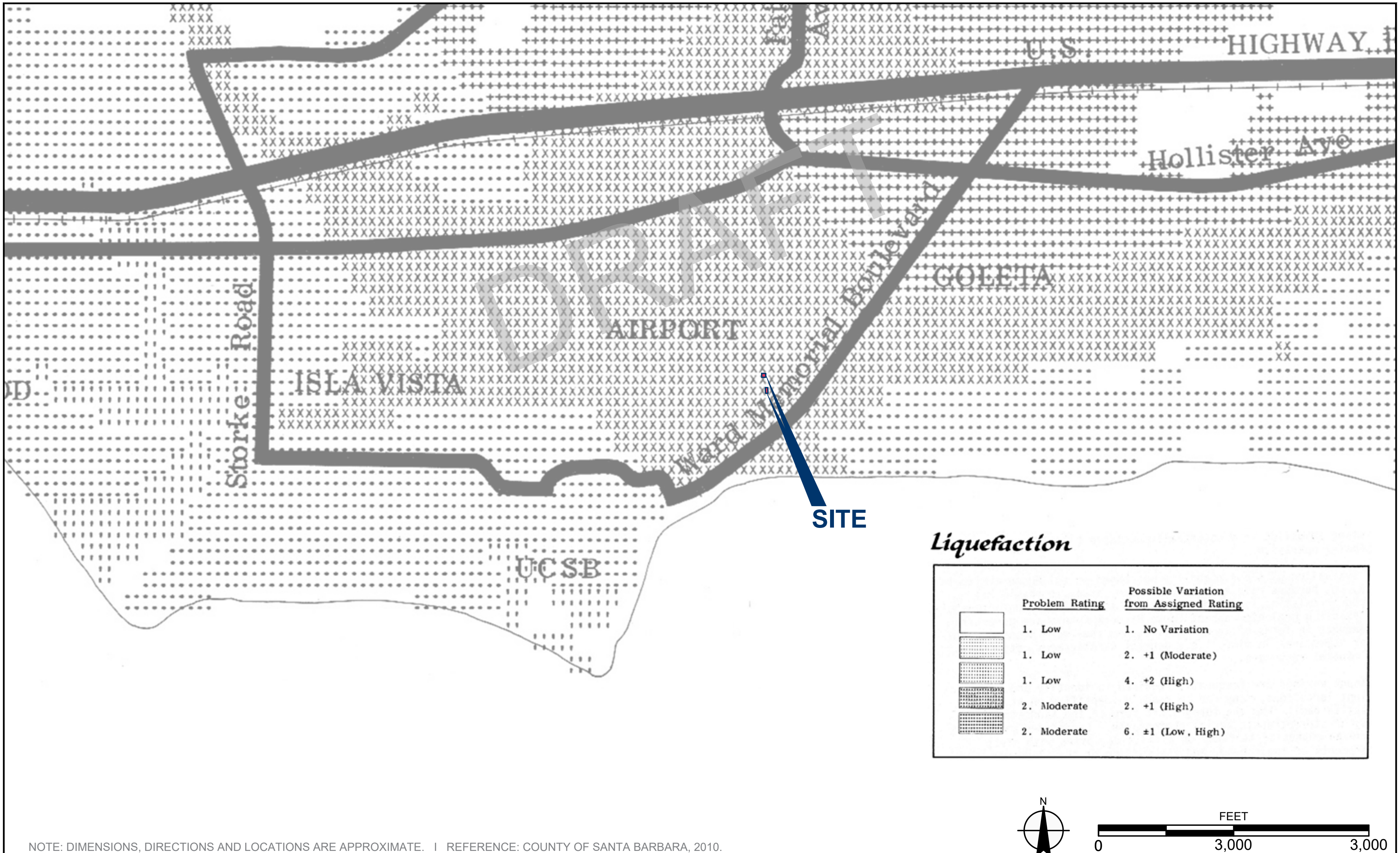

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE: COUNTY OF SANTA BARBARA, 2010.

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FIGURE 6

LIQUEFACTION HAZARD ZONES

NEW FOG RECEIVING STATION AND THERMAL DRYING FACILITY
GOLETA, CALIFORNIA

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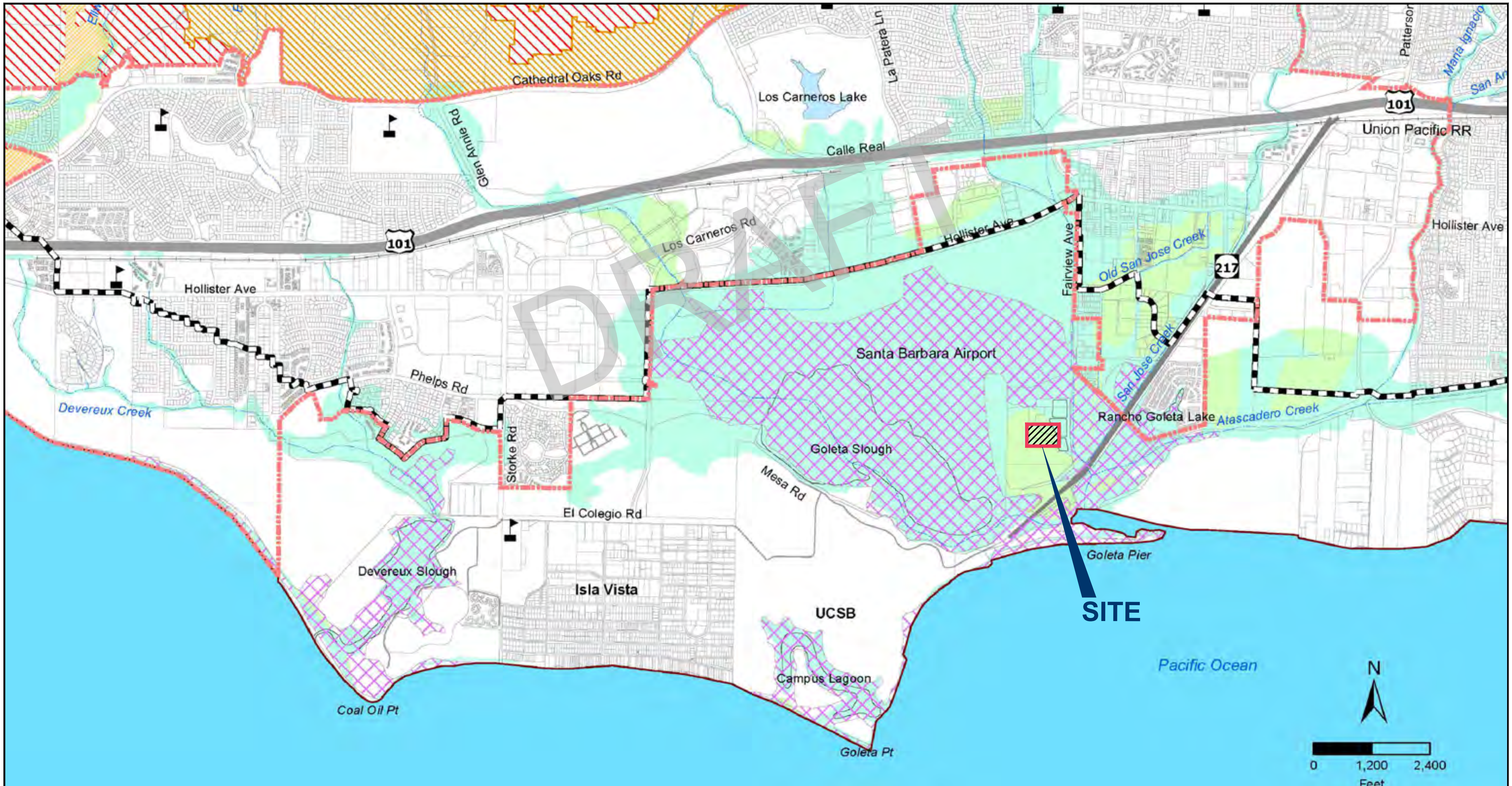

LEGEND

Flood Hazard
- 500 Year Flood Zone
- 100 Year Flood Zone

Fire Hazard Severity Zones

State Responsibility Area
- Moderate
- High
- Very High

Tsunami Hazard
- Tsunami Inundation Area

Other Features
- Goleta City Boundary
- Coastal Zone
- Creeks
- Schools

Source:
The fire hazard severity zones were obtained from the California Department of Forestry and Fire Protection Fire Hazard Severity Zones map dated 11/07/07. The 100 and 500 year flood zone was mapped by the Federal Emergency Management Agency (FEMA), per Flood Insurance Rate Map (FIRM) dated September 30, 2005. The tsunami inundation area was modeled by the University of Southern California, funded through the California Emergency Management Agency by the National Tsunami Hazard Mitigation Program, and depicted on the Tsunami Map for Emergency Planning, Dos Pueblos Canyon and Goleta Quadrangles, dated 01/31/09.

N

FEET

0 3,000 6,000

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE:

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FIGURE 7

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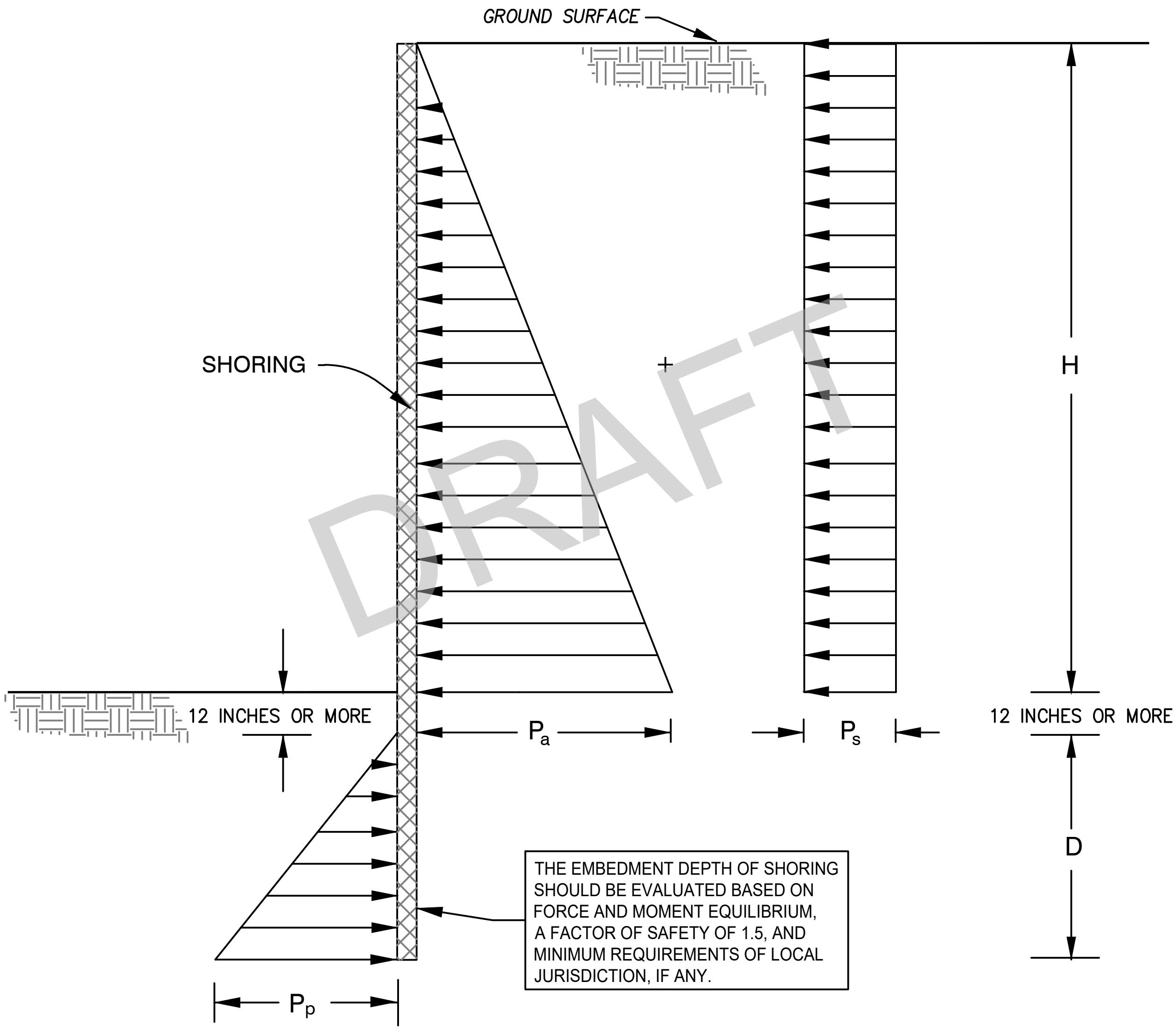
FLOOD AND TSUNAMI HAZARD

NEW FOG RECEIVING STATION AND THERMAL DRYING FACILITY
GOLETA, CALIFORNIA

211573002 I 4/22



NOTES:

1. ACTIVE LATERAL EARTH PRESSURE, P_a
   P_a = 33H psf
2. CONSTRUCTION TRAFFIC INDUCED SURCHARGE PRESSURE, P_s
   P_s = 72 psf
3. PASSIVE LATERAL EARTH PRESSURE, P_p
   P_p = 350D psf
4. ASSUMES GROUNDWATER IS NOT PRESENT
5. H AND D ARE IN FEET

NOT TO SCALE

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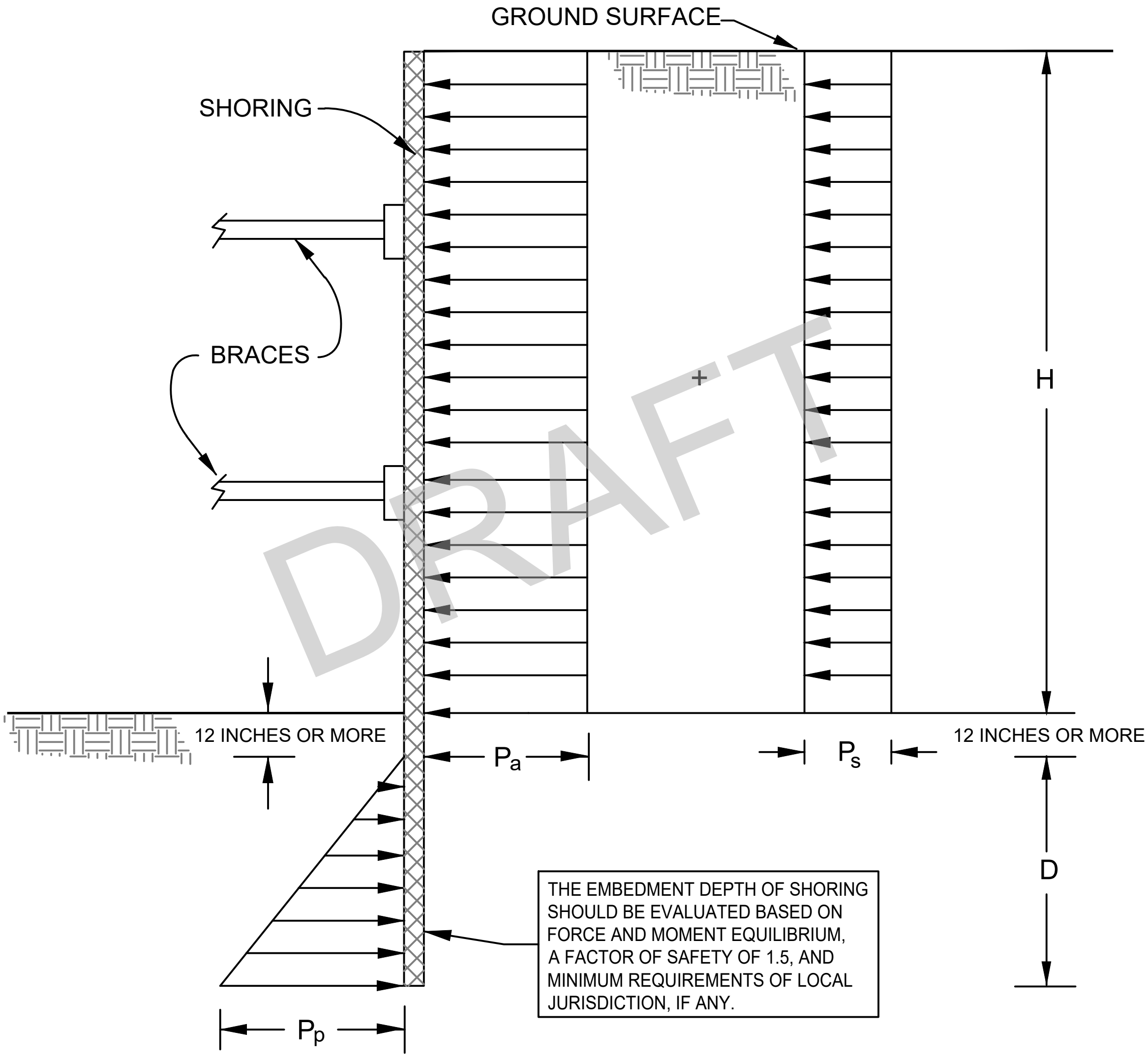
FIGURE 8

LATERAL EARTH PRESSURES FOR TEMPORARY CANTILEVERED SHORING

NEW FOG RECEIVING STATION AND THERMAL DRYING FACILITY
GOLETA, CALIFORNIA

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants



NOTES:

1. APPARENT LATERAL EARTH PRESSURE, P_a
   P_a = 22H psf
2. CONSTRUCTION TRAFFIC INDUCED SURCHARGE PRESSURE, P_s
   P_s = 120 psf
3. PASSIVE LATERAL EARTH PRESSURE, P_p
   P_p = 350D psf
4. ASSUMES GROUNDWATER IS NOT PRESENT
5. SURCHARGES FROM EXCAVATED SOIL OR CONSTRUCTION MATERIALS ARE NOT INCLUDED
6. H AND D ARE IN FEET

NOT TO SCALE

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FIGURE 9

LATERAL EARTH PRESSURES FOR BRACED EXCAVATION

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Geotechnical & Environmental Sciences Consultants

NEW FOG RECEIVING STATION AND THERMAL DRYING FACILITY
GOLETA, CALIFORNIA

211573002 I 4/22

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 method.

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 logs 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.

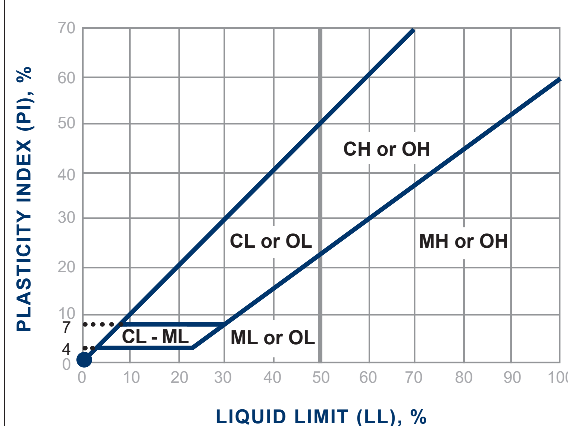
Soil Classification Chart Per ASTM D 2488

Primary Divisions			Secondary Divisions: Group Symbol	Secondary Divisions: 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: SPT (blows/foot)	Spooling Cable or Cathead: Modified Split Barrel (blows/foot)	Automatic Trip Hammer: SPT (blows/foot)	Automatic Trip Hammer: 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

Consistency	Spooling Cable or Cathead: SPT (blows/foot)	Spooling Cable or Cathead: Modified Split Barrel (blows/foot)	Automatic Trip Hammer: SPT (blows/foot)	Automatic Trip Hammer: 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

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	
0								Bulk sample.
								Modified split-barrel drive sampler.
								No recovery with modified split-barrel drive sampler.
								Sample retained by others.
								Standard Penetration Test (SPT).
5								No recovery with a SPT.
			XX/XX					Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.
								No recovery with Shelby tube sampler.
								Continuous Push Sample.
								Seepage.
10								Groundwater encountered during drilling.
								Groundwater measured after drilling.
							SM	MAJOR MATERIAL TYPE (SOIL): Solid line denotes unit change.
							CL	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
15								
								The total depth line is a solid line that is drawn at the bottom of the boring.
20								

DATE DRILLED 3/11/22 BORING NO. B-1

GROUND ELEVATION 29' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 8" Hollow-Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"

SAMPLED BY GM LOGGED BY GM REVIEWED BY MRM/MLP

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 2 inches thick. BASE: Gray, moist, medium dense, silty SAND with gravel; approximately 6 inches thick. PORTLAND CEMENT CONCRETE: Approximately 12 inches thick.
							CL	MARINE TERRACE DEPOSITS: Dark grayish brown, moist, hard, lean CLAY with sand; trace to few sea shells.
			22					
10			43	24.8	98.4			Olive gray, moist, soft, silty CLAYSTONE; some reddish to yellowish brown iron oxidation.
			27					
20			37					
			28					
30			60	20.6	105.8			
			32					
40								

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GOLETA, CALIFORNIA

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DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40			71				CL	MARINE TERRACE DEPOSITS: (Continued) Olive gray, moist, soft, silty CLAYSTONE; some reddish to yellowish brown iron oxidation.
			36					
50			93/10"					Soft to moderately hard.
			42					
60			50/5"					
			39					
70			50/6"					
								Total Depth = 71 feet. Groundwater not encountered during drilling. Backfilled with cement-bentonite grout on 3/11/22. 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.
80								

DATE DRILLED 3/11/22 BORING NO. B-1

GROUND ELEVATION 29' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 8" Hollow-Stem Auger (Baja Exploration)

DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"

SAMPLED BY GM LOGGED BY GM REVIEWED BY MRM/MLP

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	ASPHALT CONCRETE: Approximately 2 inches thick.
								FILL: White, moist, medium dense, silty SAND.
							CL	MARINE TERRACE DEPOSITS: Olive brown, moist, very stiff, lean CLAY; yellowish brown mottled; trace to few sea shells.
			21	32.4	88.9			
10			50					Olive gray, moist, soft, silty CLAYSTONE; some reddish to yellowish brown iron oxidation.
			47					
20			67					
								Total Depth = 21.5 feet. Groundwater not encountered during drilling. Backfilled with cement-bentonite grout on 3/11/22.
30								
40								

DATE DRILLED 3/11/22 BORING NO. B-2

GROUND ELEVATION 29' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Hollow-Stem Auger (Baja Exploration)

DRIVE WEIGHT See Notes DROP 30"

SAMPLED BY GM LOGGED BY GM REVIEWED BY MRM/MLP

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.

Previous Boring Logs, 2021

DATE DRILLED	12/23/20
BORING NO.	B-1
GROUND ELEVATION	29' ± (MSL)
SHEET	1 OF 2
METHOD OF DRILLING	8" Hollow-Stem Auger (S/G Drilling)
DRIVE WEIGHT	40 lbs. (Auto. Trip Hammer)
DROP	30"
SAMPLED BY	BAA
LOGGED BY	BAA
REVIEWED BY	MLP

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	X						SM	FILL: Brown, moist, medium dense, silty SAND.
		X	8					Loose.
							SP-SM	TERRACE DEPOSITS: Pale yellow, moist, medium dense, poorly graded SAND with silt.
10		X	37	8.3	92.6			
								Orange brown, moist, soft, weakly indurated, silty CLAYSTONE; pale yellow silty sand lenses (1 to 2 inches thick).
		X	17					
20		X	14	35.6	98.9			@ 20': Gray-brown with iron oxide staining.
		X	14					
								Orange to pale yellow, moist, moderately hard, weakly cemented, silty SANDSTONE.
30		X	90/11"					
		X	50/5"					
40								

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
								DATE DRILLED 12/23/20 BORING NO. B-1
								GROUND ELEVATION 29' ± (MSL) SHEET 2 OF 2
								METHOD OF DRILLING 8" Hollow-Stem Auger (S/G Drilling)
								DRIVE WEIGHT 40 lbs. (Auto. Trip Hammer) DROP 30"
								SAMPLED BY BAA LOGGED BY BAA REVIEWED BY MLP
40			69					TERRACE DEPOSITS: (Continued) Orange to pale yellow, moist, moderately hard, weakly cemented, silty SANDSTONE.
			50/5"					
50			57					
			50/4"					@ 55': Pale yellow to white, moist, moderately hard, weakly indurated, SANDSTONE lens (approximately 2 to 4 inches thick).
60			50/5"					
			81/9"					MONTEREY FORMATION: Gray to dark gray, wet, moderately hard, weakly to moderately indurated, clayey SILTSTONE. @ 67': Difficult drilling; siliceous sandstone.
								Auger Refusal at 67 feet. Backfilled with cement-grout upon completion. Groundwater encountered at approximately 57 feet during drilling. 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.
70								
80								

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, silty SAND.
		■	5	9.8	95.4			Very loose.
							SM	TERRACE DEPOSITS: Pale yellow, moist, medium dense, silty SAND.
10		■	29	9.6	91.8			
								Pale yellow to gray brown with iron staining, moist, soft, friable, silty SANDSTONE; trace clay; mottling.
		■	38	11.3	94.3			
20		■	45	22.1	102.0			Increase in silt and clay content.
								Total Depth = 21.5 feet. Groundwater not encountered during drilling. Backfilled with cement-grout upon completion. 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.
30								
40								

DATE DRILLED 12/23/20 BORING NO. B-2

GROUND ELEVATION 29' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Hollow-Stem Auger (S/G Drilling)

DRIVE WEIGHT 40 lbs. (Auto. Trip Hammer) DROP 30"

SAMPLED BY BAA LOGGED BY BAA REVIEWED BY MLP

APPENDIX B

Laboratory Testing

APPENDIX B

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.

Percent Finer than No. 200 Sieve

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 Figure B-1.

Atterberg Limits

Tests were performed on a selected representative fine-grained soil sample to evaluate the liquid limit, plastic limit, and plasticity index in general accordance with ASTM D 4318. These test results were utilized to evaluate the soil classification in accordance with the USCS. The test results and soil classification are shown on Figure B-2.

Maximum Dry Density Tests

The maximum dry density and optimum moisture content of a representative soil sample were evaluated in general accordance with the Modified Proctor method (ASTM D 1557). The results of this test are summarized on Figure B-3.

Direct Shear Test

Direct shear tests were performed on relatively undisturbed and remolded 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 Figure B-4 and B-5.

Consolidation Test

A consolidation test was performed on a relatively undisturbed soil sample in general accordance with ASTM D 2435. The sample was 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 this test are summarized on Figure B-6.

Soil Corrosivity Tests

Soil pH and resistivity tests were performed on a representative sample in general accordance with California Test (CT) 643. The soluble sulfate and chloride content of the selected sample were evaluated in general accordance with CT 417 and CT 422, respectively. The test results are presented on Figure B-7.

SAMPLE LOCATION	SAMPLE DEPTH (ft)	DESCRIPTION	PERCENT PASSING NO. 4	PERCENT PASSING NO. 200	USCS[2]
B-1	2.0-5.0	Lean CLAY with Sand	99	83	CL
B-1	10.0-11.5	Silty CLAYSTONE	100	93	CL
B-1	25.0-26.5	Silty CLAYSTONE	100	96	CL
B-1	40.0-41.5	Silty CLAYSTONE	100	96	CL
B-2	5.0-6.5	Lean CLAY	100	99	CL

[1] PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 1140
[2] USCS EQUIVALENT FOR BEDROCK SAMPLES

FIGURE B-1

NO. 200 SIEVE ANALYSIS TEST RESULTS

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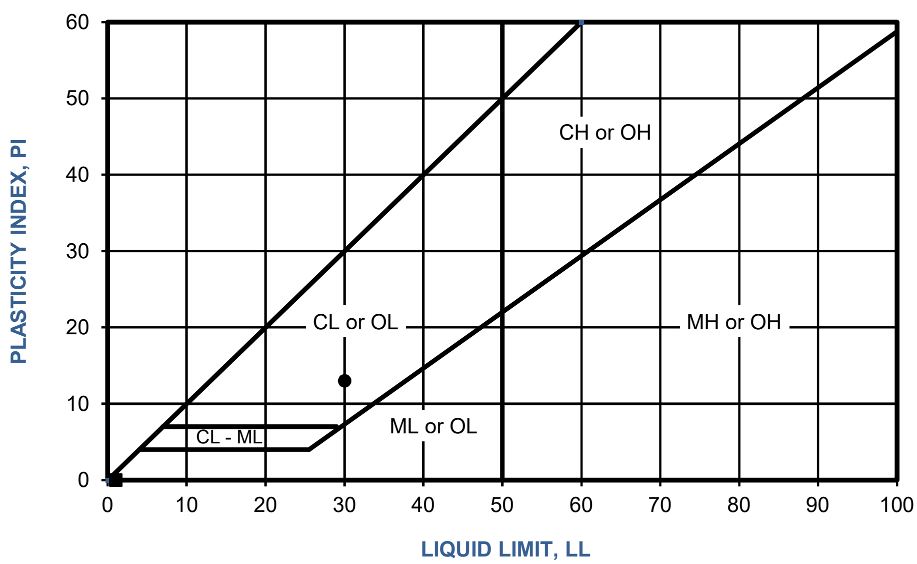
SYMBOL	LOCATION	DEPTH (ft)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	USCS CLASSIFICATION (Fraction Finer Than No. 40 Sieve)	USCS
●	B-1	2.0-5.0	30	17	13	CL	CL

NP - INDICATES NON-PLASTIC



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

FIGURE B-2

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ATTERBERG LIMITS TEST RESULTS

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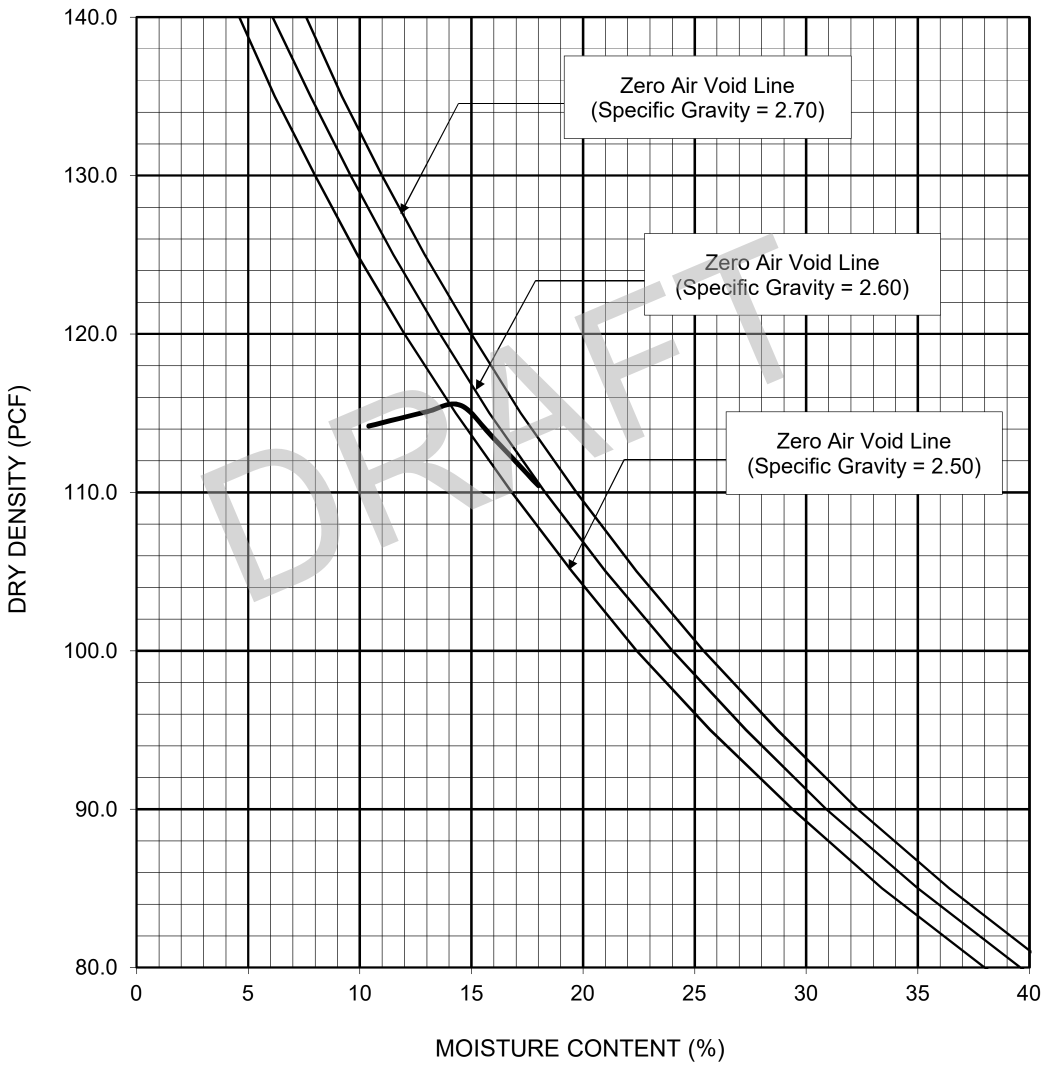

Sample Location	Depth (ft)	Soil Description	Maximum Dry Density (pcf)	Optimum Moisture Content (percent)
B-1	2.0-5.0	DARK GRAYISH BROWN LEAN CLAY WITH SAND	115.5	14.5
Dry Density and Moisture Content Values Corrected for Oversize (ASTM D 4718)			N/A	N/A

PERFORMED IN GENERAL ACCORDANCE WITH ☑ ASTM D 1557 ☐ ASTM D 698 METHOD ☐ A ☑ B ☐ C

FIGURE B-3

PROCTOR DENSITY TEST RESULTS

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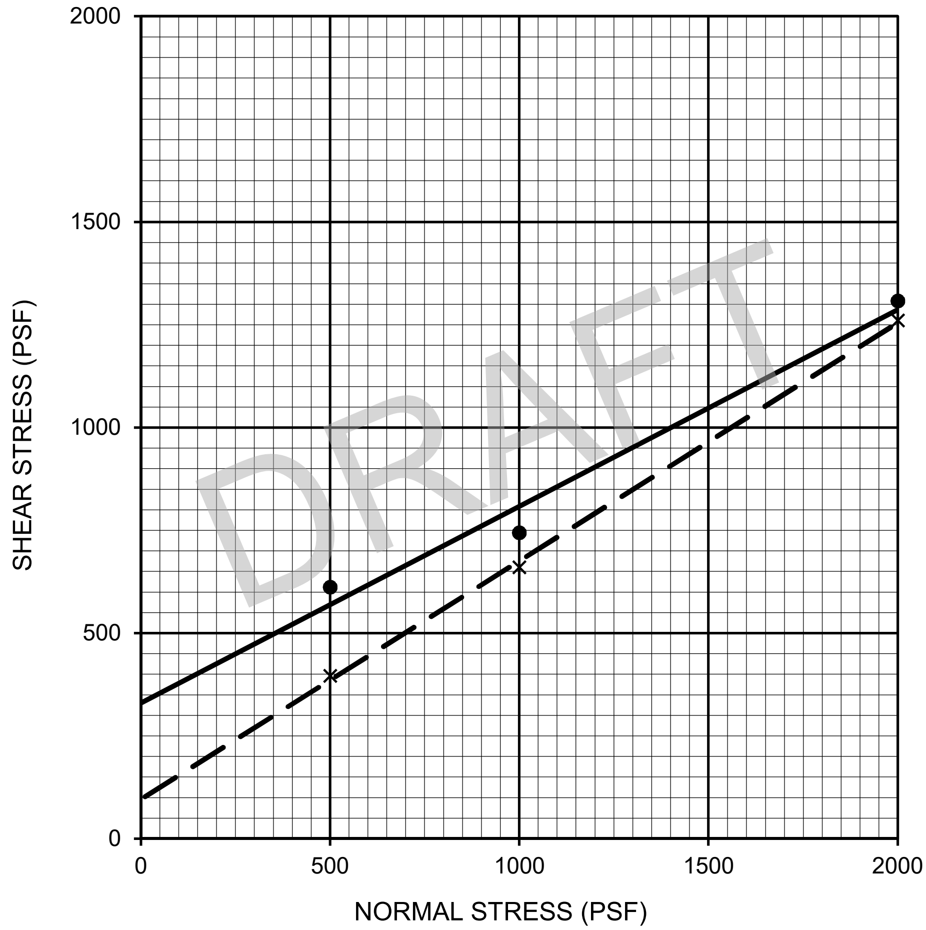

Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion (psf)	Friction Angle (degrees)	Soil Type
LEAN CLAY WITH SAND	——●——	B-1	2.0-5.0	Peak	330	26	CL
LEAN CLAY WITH SAND	– – X – –	B-1	2.0-5.0	Ultimate	96	30	CL

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080 ON A SAMPLE REMOLDED TO 90% RELATIVE COMPACTION.

FIGURE B-4

DIRECT SHEAR TEST RESULTS

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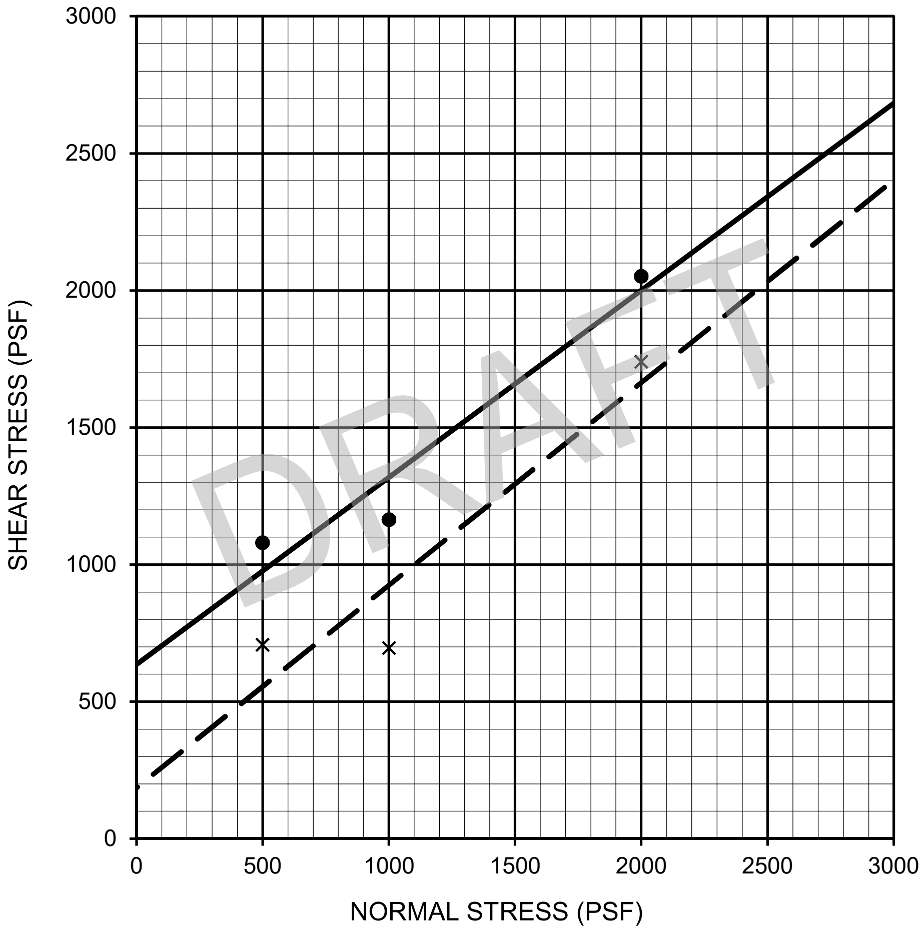

Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion (psf)	Friction Angle (degrees)	Soil Type
LEAN CLAY	——●——	B-2	5.0-6.5	Peak	636	34	CL
LEAN CLAY	– – X – –	B-2	5.0-6.5	Ultimate	186	36	CL

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080

FIGURE B-5

DIRECT SHEAR TEST RESULTS

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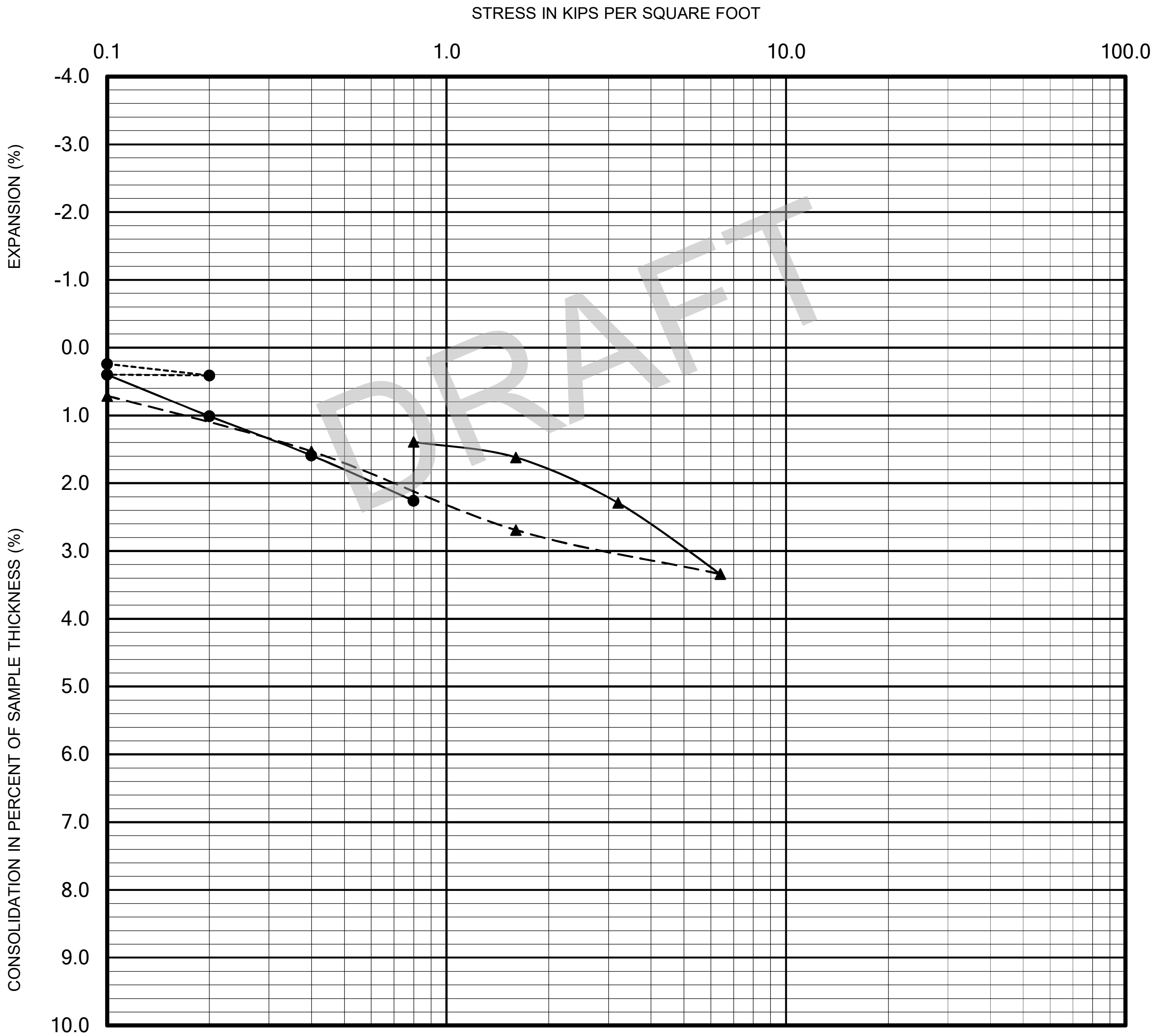

Seating Cycle
Loading Prior to Inundation
Loading After Inundation
Rebound Cycle

Sample Location	B-1
Depth (ft)	10.0-11.5
Soil Type	CL

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 2435

FIGURE B-6

CONSOLIDATION TEST RESULTS

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SAMPLE LOCATION	SAMPLE DEPTH (ft)	pH [1]	RESISTIVITY [1] (ohm-cm)	SULFATE CONTENT [2]		CHLORIDE CONTENT [3] (ppm)
				(ppm)	(%)	
B-1	2.0-5.0	7.2	683	360	0.036	240

[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 B-7

CORROSIVITY TEST RESULTS

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APPENDIX C

Results of Analytical Testing

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 459721
Report Level: II
Report Date: 03/25/2022

DRAFT

Analytical Report *prepared for:*

Morteza Mirshikari
Ninyo & Moore
475 Goddard
Suite 200
Irvine, CA 92618

Project: GOLETA SANITARY DIST - 1 William Moffett Pl., Goleta, CA 93117

Authorized for release by:

Ranjit K Clarke, Client Services Manager
(714) 771-9906
Ranjit.Clarke@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Morteza Mirshikari		Lab Job #:	459721
Ninyo & Moore		Project No:	GOLETA SANITARY DIST
475 Goddard		Location:	1 William Moffett Pl., Goleta, CA 93117
Suite 200		Date Received:	03/15/22
Irvine, CA 92618			

Sample ID	Lab ID	Collected	Matrix
B-1@2'	459721-001	03/11/22 07:50	Soil
B-2@1.0'	459721-002	03/11/22 11:40	Soil

Case Narrative

Ninyo & Moore	Lab Job Number:	459721
475 Goddard	Project No:	GOLETA SANITARY DIST
Suite 200	Location:	1 William Moffett Pl., Goleta, CA 93117
Irvine, CA 92618	Date Received:	03/15/22
Morteza Mirshikari		

This data package contains sample and QC results for two soil samples, requested for the above referenced project on 03/15/22. The samples were received cold and intact.

TPH-Extractables by GC (EPA 8015M):
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

Pesticides (EPA 8081A):
No analytical problems were encountered.

PCBs (EPA 8082):
No analytical problems were encountered.

Metals (EPA 6010B and EPA 7471A):

- High response was observed for mercury in the ICV analyzed 03/21/22 13:52; affected data was qualified with "b".
- High response was observed for mercury in the CCV analyzed 03/21/22 14:19; affected data was qualified with "b".
- High response was observed for mercury in the CCV analyzed 03/21/22 14:44; affected data was qualified with "b".
- High response was observed for mercury in the CCV analyzed 03/21/22 15:09; affected data was qualified with "b".
- Low recoveries were observed for barium and antimony in the MS/MSD for batch 285755; the parent sample was not a project sample, the LCS was within limits, and the associated RPDs were within limits.
- High recoveries were observed for mercury in the MS/MSD for batch 285868; the parent sample was not a project sample, the LCS was within limits, the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples.
- No other analytical problems were encountered.

8151A Chlorinated Herbicides (EPA 8151A):
McCampbell Analytical, Inc. in Pittsburg, CA performed the analysis (NELAP certified). Please see the McCampbell Analytical, Inc. case narrative.

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<<< Select a Laboratory >>>

#N/A

#N/A

Chain of Custody Record

Lab No: 459721

Page: of

Matrix: A = Air S = Soil/Solid W = Water DW = Drinking Wate SD = Sediment PP = Pure Product SEA = Sea Water SW = Swab T = Tissue WP = Wipe O = Other

Turn Around Time (rush by advanced notice only)

Standard:	✓	5 Day:		3 Day:	
2 Day:		1 Day:		Custom TAT:	

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

Sample Receipt Temp:

(lab use only)

CUSTOMER INFORMATION	
Company:	Ninyo & Moore
Report To:	Morteza Mirshekari
Email:	mmirshekari@ninyoandmoore.com
Address:	475 Goddard, Suite 200
	Irvine, CA 92618
Phone:	(949) 753-7070
Fax:	(949) 753-7071

PROJECT INFORMATION	
Name:	Goleta Sanitary District
Number:	211573002
P.O. #:	N/A
Address:	1 William Moffett Pl
	Goleta, CA 93117
Global ID:	N/A
Sampled By:	Garrett Mottle (GM)

Analysis Request

Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	VOCs (EPA 8260B)	TPHs (EPA 8015B)	22 Metals (EPA 6010B/7471A)	PCBs (EPA 8082)	Organochlorine Pesticides (EPA Method 8081A)	Chlorinated Herbicides (EPA Method 8151A)
B-1 @ 2'	3/11/2022	7:50 AM	SOIL	1/6" sleeve	Ice	/	/	/	/	/	/
B-2 @ 1.0'	3/11/2022	11:40 AM	SOIL	1/6" sleeve	Ice	/	/	/	/	/	/

Test Instructions / Comments

Please also send results to Garrett. gmottle@ninyoandmoore.com

	Signature	Print Name	Company / Title	Date / Time
Relinquished By:	[signature]	Emily Homan	Ninyo & Moore	3/15/22 10:03
Received By:	[signature]	[illegible]	E.A	3-15-22 10:05
Relinquished By:	[signature]	[illegible]	E.A	3-15-22 15:05
Received By:	[signature]	Elizabeth Ramar	EA	3-15-22 15:05
Relinquished By:				
Received By:				

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SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Ninyo & Moore Project: Goleta Sanitary District

Date Received: 03/15/22 Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2) Sample Temp (°C) (No Cooler): ____

Sample Temp (°C), One from each cooler: #1: 8.4 #2: ____ #3: ____ #4: ____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: ____

DRAFT

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other ____

Cooler Temp (°C): #1: 4.2 #2: ____ #3: ____ #4: ____

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?	✔		
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✔
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?			✔
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✔
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: ____ Date/Time ____

☐ Email (email sent to/on): ____ / ____

Project Manager's response:

Completed By: ____ Date: 03/15/22

Enthalpy Analytical, a subsidiary of Montrose Environmental Group ,Inc.
931 W. Barkley Ave, Orange, CA 92868 • T: (714) 771-6900 • F: (714) 538-1209
www.enthalpy.com/socal

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Analysis Results for 459721

Morteza Mirshikari
Ninyo & Moore
475 Goddard
Suite 200
Irvine, CA 92618

Lab Job #: 459721
Project No: GOLETA SANITARY DIST
Location: 1 William Moffett Pl., Goleta, CA 93117
Date Received: 03/15/22

Sample ID: B-1@2' **Lab ID: 459721-001** **Collected: 03/11/22 07:50**
Matrix: Soil

DRAFT

459721-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Antimony	ND		mg/Kg	2.6	0.88	285755	03/17/22	03/17/22	KLN
Arsenic	**2.5**		mg/Kg	0.88	0.88	285755	03/17/22	03/17/22	KLN
Barium	**140**		mg/Kg	0.88	0.88	285755	03/17/22	03/17/22	KLN
Beryllium	ND		mg/Kg	0.44	0.88	285755	03/17/22	03/17/22	KLN
Cadmium	ND		mg/Kg	0.44	0.88	285755	03/17/22	03/17/22	KLN
Chromium	**38**		mg/Kg	0.88	0.88	285755	03/17/22	03/17/22	KLN
Cobalt	**5.7**		mg/Kg	0.44	0.88	285755	03/17/22	03/17/22	KLN
Copper	**16**		mg/Kg	0.88	0.88	285755	03/17/22	03/17/22	KLN
Lead	**7.4**		mg/Kg	0.88	0.88	285755	03/17/22	03/17/22	KLN
Molybdenum	ND		mg/Kg	0.88	0.88	285755	03/17/22	03/17/22	KLN
Nickel	**31**		mg/Kg	0.88	0.88	285755	03/17/22	03/17/22	KLN
Selenium	ND		mg/Kg	2.6	0.88	285755	03/17/22	03/17/22	KLN
Silver	ND		mg/Kg	0.44	0.88	285755	03/17/22	03/17/22	KLN
Thallium	ND		mg/Kg	2.6	0.88	285755	03/17/22	03/17/22	KLN
Vanadium	**36**		mg/Kg	0.88	0.88	285755	03/17/22	03/17/22	KLN
Zinc	**48**		mg/Kg	4.4	0.88	285755	03/17/22	03/17/22	KLN
Method: EPA 7471A Prep Method: METHOD									
Mercury	ND		mg/Kg	0.16	1.1	285868	03/18/22	03/21/22	SBW
Method: EPA 8015M Prep Method: EPA 3580									
GRO C6-C10	ND		mg/Kg	10	1	286017	03/22/22	03/24/22	MES
DRO C10-C28	**16**		mg/Kg	10	1	286017	03/22/22	03/24/22	MES
ORO C28-C44	ND		mg/Kg	20	1	286017	03/22/22	03/24/22	MES
Surrogates				**Limits**					
n-Triacontane	89%		%REC	70-130	1	286017	03/22/22	03/24/22	MES
Method: EPA 8081A Prep Method: EPA 3546									
alpha-BHC	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
beta-BHC	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
gamma-BHC	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
delta-BHC	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Heptachlor	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Aldrin	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN

Results for any subcontracted analyses are not included in this section.

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Analysis Results for 459721

459721-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Heptachlor epoxide	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Endosulfan I	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Dieldrin	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
4,4'-DDE	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Endrin	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Endosulfan II	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Endosulfan sulfate	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
4,4'-DDD	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Endrin aldehyde	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Endrin ketone	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
4,4'-DDT	ND		ug/Kg	5.0	1	285738	03/17/22	03/19/22	TRN
Methoxychlor	ND		ug/Kg	10	1	285738	03/17/22	03/19/22	TRN
Toxaphene	ND		ug/Kg	100	1	285738	03/17/22	03/19/22	TRN
Chlordane (Technical)	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Surrogates				**Limits**					
TCMX	93%		%REC	23-120	1	285738	03/17/22	03/19/22	TRN
Decachlorobiphenyl	94%		%REC	24-120	1	285738	03/17/22	03/19/22	TRN

Method: EPA 8082
Prep Method: EPA 3546

Aroclor-1016	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1221	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1232	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1242	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1248	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1254	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1260	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1262	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1268	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Surrogates				**Limits**					
Decachlorobiphenyl (PCB)	84%		%REC	19-121	1	285738	03/17/22	03/19/22	TRN

Method: EPA 8260B
Prep Method: EPA 5030B

3-Chloropropene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
cis-1,4-Dichloro-2-butene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
trans-1,4-Dichloro-2-butene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Isopropyl Ether (DIPE)	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Ethyl tert-Butyl Ether (ETBE)	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Methyl tert-Amyl Ether (TAME)	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
tert-Butyl Alcohol (TBA)	ND		ug/Kg	10	1	285634	03/16/22	03/16/22	LXR
Freon 12	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Chloromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Vinyl Chloride	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromomethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Chloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Trichlorofluoromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Acetone	ND		ug/Kg	100	1	285634	03/16/22	03/16/22	LXR

Results for any subcontracted analyses are not included in this section.

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Analysis Results for 459721

459721-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Freon 113	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1-Dichloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Methylene Chloride	ND		ug/Kg	15	1	285634	03/16/22	03/16/22	LXR
MTBE	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
trans-1,2-Dichloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1-Dichloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
2-Butanone	ND		ug/Kg	100	1	285634	03/16/22	03/16/22	LXR
cis-1,2-Dichloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
2,2-Dichloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Chloroform	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromochloromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1,1-Trichloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1-Dichloropropene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Carbon Tetrachloride	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2-Dichloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Benzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Trichloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2-Dichloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromodichloromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Dibromomethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
4-Methyl-2-Pentanone	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
cis-1,3-Dichloropropene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Toluene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
trans-1,3-Dichloropropene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1,2-Trichloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,3-Dichloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Tetrachloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Dibromochloromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2-Dibromoethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Chlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1,1,2-Tetrachloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Ethylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
m,p-Xylenes	ND		ug/Kg	10	1	285634	03/16/22	03/16/22	LXR
o-Xylene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Styrene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromoform	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Isopropylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1,2,2-Tetrachloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2,3-Trichloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Propylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,3,5-Trimethylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
2-Chlorotoluene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
4-Chlorotoluene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
tert-Butylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2,4-Trimethylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR

Results for any subcontracted analyses are not included in this section.

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Analysis Results for 459721

459721-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
sec-Butylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
para-Isopropyl Toluene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,3-Dichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,4-Dichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
n-Butylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2-Dichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2-Dibromo-3-Chloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2,4-Trichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Hexachlorobutadiene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Naphthalene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2,3-Trichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Xylene (total)	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Surrogates				**Limits**					
Dibromofluoromethane	96%		%REC	70-145	1	285634	03/16/22	03/16/22	LXR
1,2-Dichloroethane-d4	97%		%REC	70-145	1	285634	03/16/22	03/16/22	LXR
Toluene-d8	107%		%REC	70-145	1	285634	03/16/22	03/16/22	LXR
Bromofluorobenzene	96%		%REC	70-145	1	285634	03/16/22	03/16/22	LXR

Results for any subcontracted analyses are not included in this section.

Analysis Results for 459721

Sample ID: B-2@1.0'	Lab ID: 459721-002	Collected: 03/11/22 11:40
	Matrix: Soil	

459721-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Antimony	ND		mg/Kg	2.6	0.86	285755	03/17/22	03/17/22	KLN
Arsenic	**1.2**		mg/Kg	0.86	0.86	285755	03/17/22	03/17/22	KLN
Barium	**50**		mg/Kg	0.86	0.86	285755	03/17/22	03/17/22	KLN
Beryllium	ND		mg/Kg	0.43	0.86	285755	03/17/22	03/17/22	KLN
Cadmium	ND		mg/Kg	0.43	0.86	285755	03/17/22	03/17/22	KLN
Chromium	**27**		mg/Kg	0.86	0.86	285755	03/17/22	03/17/22	KLN
Cobalt	**3.2**		mg/Kg	0.43	0.86	285755	03/17/22	03/17/22	KLN
Copper	**6.5**		mg/Kg	0.86	0.86	285755	03/17/22	03/17/22	KLN
Lead	**2.4**		mg/Kg	0.86	0.86	285755	03/17/22	03/17/22	KLN
Molybdenum	ND		mg/Kg	0.86	0.86	285755	03/17/22	03/17/22	KLN
Nickel	**23**		mg/Kg	0.86	0.86	285755	03/17/22	03/17/22	KLN
Selenium	ND		mg/Kg	2.6	0.86	285755	03/17/22	03/17/22	KLN
Silver	ND		mg/Kg	0.43	0.86	285755	03/17/22	03/17/22	KLN
Thallium	ND		mg/Kg	2.6	0.86	285755	03/17/22	03/17/22	KLN
Vanadium	**17**		mg/Kg	0.86	0.86	285755	03/17/22	03/17/22	KLN
Zinc	**16**		mg/Kg	4.3	0.86	285755	03/17/22	03/17/22	KLN
Method: EPA 7471A Prep Method: METHOD									
Mercury	ND		mg/Kg	0.15	1.1	285868	03/18/22	03/21/22	SBW
Method: EPA 8015M Prep Method: EPA 3580									
GRO C6-C10	ND		mg/Kg	10	1	286017	03/22/22	03/24/22	MES
DRO C10-C28	ND		mg/Kg	10	1	286017	03/22/22	03/24/22	MES
ORO C28-C44	ND		mg/Kg	20	1	286017	03/22/22	03/24/22	MES
Surrogates				**Limits**					
n-Triacontane	84%		%REC	70-130	1	286017	03/22/22	03/24/22	MES
Method: EPA 8081A Prep Method: EPA 3546									
alpha-BHC	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
beta-BHC	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
gamma-BHC	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
delta-BHC	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Heptachlor	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Aldrin	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Heptachlor epoxide	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Endosulfan I	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Dieldrin	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
4,4'-DDE	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Endrin	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Endosulfan II	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN

Results for any subcontracted analyses are not included in this section.

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Analysis Results for 459721

459721-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Endosulfan sulfate	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
4,4'-DDD	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Endrin aldehyde	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Endrin ketone	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
4,4'-DDT	ND		ug/Kg	5.0	1	285738	03/17/22	03/21/22	TRN
Methoxychlor	ND		ug/Kg	10	1	285738	03/17/22	03/21/22	TRN
Toxaphene	ND		ug/Kg	100	1	285738	03/17/22	03/21/22	TRN
Chlordane (Technical)	ND		ug/Kg	50	1	285738	03/17/22	03/21/22	TRN
Surrogates				**Limits**					
TCMX	75%		%REC	23-120	1	285738	03/17/22	03/21/22	TRN
Decachlorobiphenyl	61%		%REC	24-120	1	285738	03/17/22	03/21/22	TRN

DRAFT

Method: EPA 8082
Prep Method: EPA 3546

Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Aroclor-1016	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1221	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1232	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1242	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1248	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1254	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1260	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1262	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Aroclor-1268	ND		ug/Kg	50	1	285738	03/17/22	03/19/22	TRN
Surrogates				**Limits**					
Decachlorobiphenyl (PCB)	58%		%REC	19-121	1	285738	03/17/22	03/19/22	TRN

Method: EPA 8260B
Prep Method: EPA 5030B

Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
3-Chloropropene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
cis-1,4-Dichloro-2-butene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
trans-1,4-Dichloro-2-butene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Isopropyl Ether (DIPE)	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Ethyl tert-Butyl Ether (ETBE)	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Methyl tert-Amyl Ether (TAME)	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
tert-Butyl Alcohol (TBA)	ND		ug/Kg	10	1	285634	03/16/22	03/16/22	LXR
Freon 12	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Chloromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Vinyl Chloride	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromomethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Chloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Trichlorofluoromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Acetone	ND		ug/Kg	100	1	285634	03/16/22	03/16/22	LXR
Freon 113	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1-Dichloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Methylene Chloride	ND		ug/Kg	15	1	285634	03/16/22	03/16/22	LXR
MTBE	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
trans-1,2-Dichloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1-Dichloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR

Results for any subcontracted analyses are not included in this section.

Analysis Results for 459721

459721-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
2-Butanone	ND		ug/Kg	100	1	285634	03/16/22	03/16/22	LXR
cis-1,2-Dichloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
2,2-Dichloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Chloroform	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromochloromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1,1-Trichloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1-Dichloropropene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Carbon Tetrachloride	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2-Dichloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Benzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Trichloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2-Dichloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromodichloromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Dibromomethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
4-Methyl-2-Pentanone	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
cis-1,3-Dichloropropene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Toluene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
trans-1,3-Dichloropropene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1,2-Trichloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,3-Dichloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Tetrachloroethene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Dibromochloromethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2-Dibromoethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Chlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1,1,2-Tetrachloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Ethylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
m,p-Xylenes	ND		ug/Kg	10	1	285634	03/16/22	03/16/22	LXR
o-Xylene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Styrene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromoform	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Isopropylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,1,2,2-Tetrachloroethane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2,3-Trichloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Propylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Bromobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,3,5-Trimethylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
2-Chlorotoluene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
4-Chlorotoluene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
tert-Butylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2,4-Trimethylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
sec-Butylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
para-Isopropyl Toluene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,3-Dichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,4-Dichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
n-Butylbenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2-Dichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR

Results for any subcontracted analyses are not included in this section.

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Analysis Results for 459721

459721-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
1,2-Dibromo-3-Chloropropane	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2,4-Trichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Hexachlorobutadiene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Naphthalene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
1,2,3-Trichlorobenzene	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Xylene (total)	ND		ug/Kg	5.0	1	285634	03/16/22	03/16/22	LXR
Surrogates				**Limits**					
Dibromofluoromethane	96%		%REC	70-145	1	285634	03/16/22	03/16/22	LXR
1,2-Dichloroethane-d4	96%		%REC	70-145	1	285634	03/16/22	03/16/22	LXR
Toluene-d8	107%		%REC	70-145	1	285634	03/16/22	03/16/22	LXR
Bromofluorobenzene	96%		%REC	70-145	1	285634	03/16/22	03/16/22	LXR

ND Not Detected

Results for any subcontracted analyses are not included in this section.

Batch QC

Type: Blank	Lab ID: QC978117	Batch: 285755
Matrix: Soil	Method: EPA 6010B	Prep Method: EPA 3050B

QC978117 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Antimony	ND		mg/Kg	3.0	03/17/22	03/17/22
Arsenic	ND		mg/Kg	1.0	03/17/22	03/17/22
Barium	ND		mg/Kg	1.0	03/17/22	03/17/22
Beryllium	ND		mg/Kg	0.50	03/17/22	03/17/22
Cadmium	ND		mg/Kg	0.50	03/17/22	03/17/22
Chromium	ND		mg/Kg	1.0	03/17/22	03/17/22
Cobalt	ND		mg/Kg	0.50	03/17/22	03/17/22
Copper	ND		mg/Kg	1.0	03/17/22	03/17/22
Lead	ND		mg/Kg	1.0	03/17/22	03/17/22
Molybdenum	ND		mg/Kg	1.0	03/17/22	03/17/22
Nickel	ND		mg/Kg	1.0	03/17/22	03/17/22
Selenium	ND		mg/Kg	3.0	03/17/22	03/17/22
Silver	ND		mg/Kg	0.50	03/17/22	03/17/22
Thallium	ND		mg/Kg	3.0	03/17/22	03/17/22
Vanadium	ND		mg/Kg	1.0	03/17/22	03/17/22
Zinc	ND		mg/Kg	5.0	03/17/22	03/17/22

Type: Lab Control Sample	Lab ID: QC978118	Batch: 285755
Matrix: Soil	Method: EPA 6010B	Prep Method: EPA 3050B

QC978118 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Antimony	83.03	100.0	mg/Kg	83%		80-120
Arsenic	85.17	100.0	mg/Kg	85%		80-120
Barium	90.50	100.0	mg/Kg	91%		80-120
Beryllium	91.72	100.0	mg/Kg	92%		80-120
Cadmium	87.77	100.0	mg/Kg	88%		80-120
Chromium	87.11	100.0	mg/Kg	87%		80-120
Cobalt	92.27	100.0	mg/Kg	92%		80-120
Copper	84.19	100.0	mg/Kg	84%		80-120
Lead	91.52	100.0	mg/Kg	92%		80-120
Molybdenum	89.93	100.0	mg/Kg	90%		80-120
Nickel	91.22	100.0	mg/Kg	91%		80-120
Selenium	80.72	100.0	mg/Kg	81%		80-120
Silver	41.64	50.00	mg/Kg	83%		80-120
Thallium	92.02	100.0	mg/Kg	92%		80-120
Vanadium	86.73	100.0	mg/Kg	87%		80-120
Zinc	90.63	100.0	mg/Kg	91%		80-120

Batch QC

Type:	Matrix Spike	Lab ID:	QC978119	Batch:	285755
Matrix (Source ID):	Soil (459830-008)	Method:	EPA 6010B	Prep Method:	EPA 3050B

QC978119 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Antimony	18.72	ND	97.09	mg/Kg	19%	*	75-125	0.97
Arsenic	97.24	5.669	97.09	mg/Kg	94%		75-125	0.97
Barium	315.1	242.7	97.09	mg/Kg	75%		75-125	0.97
Beryllium	95.78	ND	97.09	mg/Kg	99%		75-125	0.97
Cadmium	93.67	ND	97.09	mg/Kg	96%		75-125	0.97
Chromium	118.3	29.45	97.09	mg/Kg	91%		75-125	0.97
Cobalt	107.0	15.69	97.09	mg/Kg	94%		75-125	0.97
Copper	125.4	33.82	97.09	mg/Kg	94%		75-125	0.97
Lead	95.58	5.962	97.09	mg/Kg	92%		75-125	0.97
Molybdenum	93.13	0.8461	97.09	mg/Kg	95%		75-125	0.97
Nickel	112.1	23.40	97.09	mg/Kg	91%		75-125	0.97
Selenium	78.92	ND	97.09	mg/Kg	81%		75-125	0.97
Silver	44.68	ND	48.54	mg/Kg	92%		75-125	0.97
Thallium	91.02	0.5721	97.09	mg/Kg	93%		75-125	0.97
Vanadium	157.1	62.78	97.09	mg/Kg	97%		75-125	0.97
Zinc	181.9	90.22	97.09	mg/Kg	94%		75-125	0.97

Type:	Matrix Spike Duplicate	Lab ID:	QC978120	Batch:	285755
Matrix (Source ID):	Soil (459830-008)	Method:	EPA 6010B	Prep Method:	EPA 3050B

QC978120 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Antimony	16.06	ND	87.72	mg/Kg	18%	*	75-125	5	41	0.88
Arsenic	84.42	5.669	87.72	mg/Kg	90%		75-125	5	35	0.88
Barium	296.2	242.7	87.72	mg/Kg	61%	*	75-125	3	20	0.88
Beryllium	82.92	ND	87.72	mg/Kg	95%		75-125	4	20	0.88
Cadmium	81.13	ND	87.72	mg/Kg	92%		75-125	4	20	0.88
Chromium	105.6	29.45	87.72	mg/Kg	87%		75-125	4	20	0.88
Cobalt	93.79	15.69	87.72	mg/Kg	89%		75-125	5	20	0.88
Copper	112.8	33.82	87.72	mg/Kg	90%		75-125	3	20	0.88
Lead	83.50	5.962	87.72	mg/Kg	88%		75-125	4	20	0.88
Molybdenum	80.30	0.8461	87.72	mg/Kg	91%		75-125	5	20	0.88
Nickel	99.10	23.40	87.72	mg/Kg	86%		75-125	4	20	0.88
Selenium	68.22	ND	87.72	mg/Kg	78%		75-125	4	20	0.88
Silver	38.77	ND	43.86	mg/Kg	88%		75-125	4	20	0.88
Thallium	79.49	0.5721	87.72	mg/Kg	90%		75-125	3	20	0.88
Vanadium	142.4	62.78	87.72	mg/Kg	91%		75-125	4	20	0.88
Zinc	167.4	90.22	87.72	mg/Kg	88%		75-125	3	20	0.88

Batch QC

Type: Blank	Lab ID: QC978404	Batch: 285868
Matrix: Soil	Method: EPA 7471A	Prep Method: METHOD

QC978404 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Mercury	ND		mg/Kg	0.14	03/18/22	03/21/22

Type: Lab Control Sample	Lab ID: QC978405	Batch: 285868
Matrix: Soil	Method: EPA 7471A	Prep Method: METHOD

QC978405 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Mercury	0.9893	0.8333	mg/Kg	119%	b	80-120

Type: Matrix Spike	Lab ID: QC978406	Batch: 285868
Matrix (Source ID): Soil (459830-008)	Method: EPA 7471A	Prep Method: METHOD

QC978406 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Mercury	1.273	0.09016	0.8333	mg/Kg	142%	b,*	75-125	1

Type: Matrix Spike Duplicate	Lab ID: QC978407	Batch: 285868
Matrix (Source ID): Soil (459830-008)	Method: EPA 7471A	Prep Method: METHOD

QC978407 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Mercury	1.388	0.09016	1.000	mg/Kg	130%	b,*	75-125	8	20	1.2

Type: Blank	Lab ID: QC978893	Batch: 286017
Matrix: Soil	Method: EPA 8015M	Prep Method: EPA 3580

QC978893 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
GRO C6-C10	ND		mg/Kg	10	03/22/22	03/23/22
DRO C10-C28	ND		mg/Kg	10	03/22/22	03/23/22
ORO C28-C44	ND		mg/Kg	20	03/22/22	03/23/22
Surrogates				**Limits**		
n-Triacontane	84%		%REC	70-130	03/22/22	03/23/22

Type: Lab Control Sample	Lab ID: QC978894	Batch: 286017
Matrix: Soil	Method: EPA 8015M	Prep Method: EPA 3580

QC978894 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Diesel C10-C28	236.7	250.0	mg/Kg	95%		76-122
Surrogates						
n-Triacontane	10.06	10.00	mg/Kg	101%		70-130

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Batch QC

Type:	Matrix Spike	Lab ID:	QC978895	Batch:	286017
Matrix (Source ID):	Soil (460023-001)	Method:	EPA 8015M	Prep Method:	EPA 3580

QC978895 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Diesel C10-C28	225.6	1.798	250.0	mg/Kg	90%		62-126	1
Surrogates								
n-Triacontane	10.10		10.00	mg/Kg	101%		70-130	1

Type:	Matrix Spike Duplicate	Lab ID:	QC978896	Batch:	286017
Matrix (Source ID):	Soil (460023-001)	Method:	EPA 8015M	Prep Method:	EPA 3580

QC978896 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Diesel C10-C28	231.4	1.798	250.0	mg/Kg	92%		62-126	3	35	1
Surrogates										
n-Triacontane	10.02		10.00	mg/Kg	100%		70-130			1

ENTHALPY ANALYTICAL

Batch QC

Type: Blank	Lab ID: QC978044	Batch: 285738
Matrix: Soil		

QC978044 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Method: EPA 8081A Prep Method: EPA 3546						
alpha-BHC	ND		ug/Kg	5.0	03/17/22	03/19/22
beta-BHC	ND		ug/Kg	5.0	03/17/22	03/19/22
gamma-BHC	ND		ug/Kg	5.0	03/17/22	03/19/22
delta-BHC	ND		ug/Kg	5.0	03/17/22	03/19/22
Heptachlor	ND		ug/Kg	5.0	03/17/22	03/19/22
Aldrin	ND		ug/Kg	5.0	03/17/22	03/19/22
Heptachlor epoxide	ND		ug/Kg	5.0	03/17/22	03/19/22
Endosulfan I	ND		ug/Kg	5.0	03/17/22	03/19/22
Dieldrin	ND		ug/Kg	5.0	03/17/22	03/19/22
4,4'-DDE	ND		ug/Kg	5.0	03/17/22	03/19/22
Endrin	ND		ug/Kg	5.0	03/17/22	03/19/22
Endosulfan II	ND		ug/Kg	5.0	03/17/22	03/19/22
Endosulfan sulfate	ND		ug/Kg	5.0	03/17/22	03/19/22
4,4'-DDD	ND		ug/Kg	5.0	03/17/22	03/19/22
Endrin aldehyde	ND		ug/Kg	5.0	03/17/22	03/19/22
Endrin ketone	ND		ug/Kg	5.0	03/17/22	03/19/22
4,4'-DDT	ND		ug/Kg	5.0	03/17/22	03/19/22
Methoxychlor	ND		ug/Kg	10	03/17/22	03/19/22
Toxaphene	ND		ug/Kg	100	03/17/22	03/19/22
Chlordane (Technical)	ND		ug/Kg	50	03/17/22	03/19/22
Surrogates				**Limits**		
TCMX	96%		%REC	23-120	03/17/22	03/19/22
Decachlorobiphenyl	102%		%REC	24-120	03/17/22	03/19/22
Method: EPA 8082 Prep Method: EPA 3546						
Aroclor-1016	ND		ug/Kg	50	03/17/22	03/19/22
Aroclor-1221	ND		ug/Kg	50	03/17/22	03/19/22
Aroclor-1232	ND		ug/Kg	50	03/17/22	03/19/22
Aroclor-1242	ND		ug/Kg	50	03/17/22	03/19/22
Aroclor-1248	ND		ug/Kg	50	03/17/22	03/19/22
Aroclor-1254	ND		ug/Kg	50	03/17/22	03/19/22
Aroclor-1260	ND		ug/Kg	50	03/17/22	03/19/22
Aroclor-1262	ND		ug/Kg	50	03/17/22	03/19/22
Aroclor-1268	ND		ug/Kg	50	03/17/22	03/19/22
Surrogates				**Limits**		
Decachlorobiphenyl (PCB)	91%		%REC	19-121	03/17/22	03/19/22

Batch QC

Type:	Lab Control Sample	Lab ID:	QC978045	Batch:	285738
Matrix:	Soil	Method:	EPA 8081A	Prep Method:	EPA 3546

QC978045 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
alpha-BHC	52.57	50.00	ug/Kg	105%		22-129
beta-BHC	52.02	50.00	ug/Kg	104%		28-125
gamma-BHC	51.70	50.00	ug/Kg	103%		22-128
delta-BHC	51.51	50.00	ug/Kg	103%		24-131
Heptachlor	52.26	50.00	ug/Kg	105%		18-124
Aldrin	45.84	50.00	ug/Kg	92%		23-120
Heptachlor epoxide	50.03	50.00	ug/Kg	100%		26-120
Endosulfan I	57.25	50.00	ug/Kg	115%		25-126
Dieldrin	53.41	50.00	ug/Kg	107%		23-124
4,4'-DDE	54.95	50.00	ug/Kg	110%		28-121
Endrin	58.11	50.00	ug/Kg	116%		25-127
Endosulfan II	56.29	50.00	ug/Kg	113%		29-121
Endosulfan sulfate	55.36	50.00	ug/Kg	111%		30-121
4,4'-DDD	53.27	50.00	ug/Kg	107%		26-120
Endrin aldehyde	41.59	50.00	ug/Kg	83%		10-120
Endrin ketone	57.89	50.00	ug/Kg	116%		28-125
4,4'-DDT	58.72	50.00	ug/Kg	117%		22-125
Methoxychlor	56.92	50.00	ug/Kg	114%		28-130
Surrogates						
TCMX	47.16	50.00	ug/Kg	94%		23-120
Decachlorobiphenyl	51.37	50.00	ug/Kg	103%		24-120

ENTHALPY ANALYTICAL

Batch QC

Type:	**Matrix Spike**	**Lab ID:**	**QC978046**	**Batch:**	**285738**
Matrix (Source ID):	**Soil (459778-021)**	**Method:**	**EPA 8081A**	**Prep Method:**	**EPA 3546**

QC978046 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
alpha-BHC	41.71	ND	50.00	ug/Kg	83%		46-120	1
beta-BHC	44.45	ND	50.00	ug/Kg	89%		41-120	1
gamma-BHC	41.34	ND	50.00	ug/Kg	83%		41-120	1
delta-BHC	41.64	ND	50.00	ug/Kg	83%		38-123	1
Heptachlor	41.84	ND	50.00	ug/Kg	84%		39-120	1
Aldrin	38.01	ND	50.00	ug/Kg	76%		34-120	1
Heptachlor epoxide	40.06	ND	50.00	ug/Kg	80%		43-120	1
Endosulfan I	45.89	ND	50.00	ug/Kg	92%		45-120	1
Dieldrin	43.11	ND	50.00	ug/Kg	86%		45-120	1
4,4'-DDE	43.61	ND	50.00	ug/Kg	87%		34-120	1
Endrin	45.12	ND	50.00	ug/Kg	90%		40-120	1
Endosulfan II	44.72	ND	50.00	ug/Kg	89%		41-120	1
Endosulfan sulfate	43.56	ND	50.00	ug/Kg	87%		42-120	1
4,4'-DDD	40.84	ND	50.00	ug/Kg	82%		41-120	1
Endrin aldehyde	33.37	ND	50.00	ug/Kg	67%		30-120	1
Endrin ketone	41.88	ND	50.00	ug/Kg	84%		45-120	1
4,4'-DDT	47.80	ND	50.00	ug/Kg	96%		35-127	1
Methoxychlor	45.77	ND	50.00	ug/Kg	92%		42-136	1
Surrogates								
TCMX	37.82		50.00	ug/Kg	76%		23-120	1
Decachlorobiphenyl	40.72		50.00	ug/Kg	81%		24-120	1

Batch QC

Type:	Matrix Spike Duplicate	Lab ID:	QC978047	Batch:	285738
Matrix (Source ID):	Soil (459778-021)	Method:	EPA 8081A	Prep Method:	EPA 3546

QC978047 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
alpha-BHC	48.27	ND	50.00	ug/Kg	97%		46-120	15	30	1
beta-BHC	49.28	ND	50.00	ug/Kg	99%		41-120	10	30	1
gamma-BHC	47.48	ND	50.00	ug/Kg	95%		41-120	14	30	1
delta-BHC	46.45	ND	50.00	ug/Kg	93%		38-123	11	30	1
Heptachlor	47.32	ND	50.00	ug/Kg	95%		39-120	12	30	1
Aldrin	43.09	ND	50.00	ug/Kg	86%		34-120	13	30	1
Heptachlor epoxide	44.61	ND	50.00	ug/Kg	89%		43-120	11	30	1
Endosulfan I	50.73	ND	50.00	ug/Kg	101%		45-120	10	30	1
Dieldrin	47.53	ND	50.00	ug/Kg	95%		45-120	10	30	1
4,4'-DDE	50.23	ND	50.00	ug/Kg	100%		34-120	14	30	1
Endrin	50.58	ND	50.00	ug/Kg	101%		40-120	11	30	1
Endosulfan II	49.48	ND	50.00	ug/Kg	99%		41-120	10	30	1
Endosulfan sulfate	47.13	ND	50.00	ug/Kg	94%		42-120	8	30	1
4,4'-DDD	45.23	ND	50.00	ug/Kg	90%		41-120	10	30	1
Endrin aldehyde	35.36	ND	50.00	ug/Kg	71%		30-120	6	30	1
Endrin ketone	45.60	ND	50.00	ug/Kg	91%		45-120	9	30	1
4,4'-DDT	53.56	ND	50.00	ug/Kg	107%		35-127	11	30	1
Methoxychlor	48.23	ND	50.00	ug/Kg	96%		42-136	5	30	1
Surrogates										
TCMX	42.73		50.00	ug/Kg	85%		23-120			1
Decachlorobiphenyl	43.08		50.00	ug/Kg	86%		24-120			1

Type:	Lab Control Sample	Lab ID:	QC978048	Batch:	285738
Matrix:	Soil	Method:	EPA 8082	Prep Method:	EPA 3546

QC978048 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Aroclor-1016	468.4	500.0	ug/Kg	94%		14-150
Aroclor-1260	485.5	500.0	ug/Kg	97%		10-150
Surrogates						
Decachlorobiphenyl (PCB)	38.73	50.00	ug/Kg	77%		19-121

Batch QC

Type: Matrix Spike	**Lab ID:** QC978049	**Batch:** 285738	
Matrix (Source ID): Soil (459778-021)	**Method:** EPA 8082	**Prep Method:** EPA 3546	

QC978049 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Aroclor-1016	410.3	ND	500.0	ug/Kg	82%		42-127	1
Aroclor-1260	433.0	ND	500.0	ug/Kg	87%		38-130	1
Surrogates								
Decachlorobiphenyl (PCB)	34.09		50.00	ug/Kg	68%		19-121	1

Type: Matrix Spike Duplicate	**Lab ID:** QC978050	**Batch:** 285738
Matrix (Source ID): Soil (459778-021)	**Method:** EPA 8082	**Prep Method:** EPA 3546

QC978050 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Aroclor-1016	448.3	ND	500.0	ug/Kg	90%		42-127	9	30	1
Aroclor-1260	455.7	ND	500.0	ug/Kg	91%		38-130	5	30	1
Surrogates										
Decachlorobiphenyl (PCB)	36.46		50.00	ug/Kg	73%		19-121			1

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Batch QC

Type:	Blank	Lab ID:	QC977759	Batch:	285634
Matrix:	Soil	Method:	EPA 8260B	Prep Method:	EPA 5030B

DRAFT

QC977759 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
3-Chloropropene	ND		ug/Kg	5.0	03/16/22	03/16/22
cis-1,4-Dichloro-2-butene	ND		ug/Kg	5.0	03/16/22	03/16/22
trans-1,4-Dichloro-2-butene	ND		ug/Kg	5.0	03/16/22	03/16/22
Isopropyl Ether (DIPE)	ND		ug/Kg	5.0	03/16/22	03/16/22
Ethyl tert-Butyl Ether (ETBE)	ND		ug/Kg	5.0	03/16/22	03/16/22
Methyl tert-Amyl Ether (TAME)	ND		ug/Kg	5.0	03/16/22	03/16/22
tert-Butyl Alcohol (TBA)	ND		ug/Kg	10	03/16/22	03/16/22
Freon 12	ND		ug/Kg	5.0	03/16/22	03/16/22
Chloromethane	ND		ug/Kg	5.0	03/16/22	03/16/22
Vinyl Chloride	ND		ug/Kg	5.0	03/16/22	03/16/22
Bromomethane	ND		ug/Kg	5.0	03/16/22	03/16/22
Chloroethane	ND		ug/Kg	5.0	03/16/22	03/16/22
Trichlorofluoromethane	ND		ug/Kg	5.0	03/16/22	03/16/22
Acetone	ND		ug/Kg	100	03/16/22	03/16/22
Freon 113	ND		ug/Kg	5.0	03/16/22	03/16/22
1,1-Dichloroethene	ND		ug/Kg	5.0	03/16/22	03/16/22
Methylene Chloride	ND		ug/Kg	15	03/16/22	03/16/22
MTBE	ND		ug/Kg	5.0	03/16/22	03/16/22
trans-1,2-Dichloroethene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,1-Dichloroethane	ND		ug/Kg	5.0	03/16/22	03/16/22
2-Butanone	ND		ug/Kg	100	03/16/22	03/16/22
cis-1,2-Dichloroethene	ND		ug/Kg	5.0	03/16/22	03/16/22
2,2-Dichloropropane	ND		ug/Kg	5.0	03/16/22	03/16/22
Chloroform	ND		ug/Kg	5.0	03/16/22	03/16/22
Bromochloromethane	ND		ug/Kg	5.0	03/16/22	03/16/22
1,1,1-Trichloroethane	ND		ug/Kg	5.0	03/16/22	03/16/22
1,1-Dichloropropene	ND		ug/Kg	5.0	03/16/22	03/16/22
Carbon Tetrachloride	ND		ug/Kg	5.0	03/16/22	03/16/22
1,2-Dichloroethane	ND		ug/Kg	5.0	03/16/22	03/16/22
Benzene	ND		ug/Kg	5.0	03/16/22	03/16/22
Trichloroethene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,2-Dichloropropane	ND		ug/Kg	5.0	03/16/22	03/16/22
Bromodichloromethane	ND		ug/Kg	5.0	03/16/22	03/16/22
Dibromomethane	ND		ug/Kg	5.0	03/16/22	03/16/22
4-Methyl-2-Pentanone	ND		ug/Kg	5.0	03/16/22	03/16/22
cis-1,3-Dichloropropene	ND		ug/Kg	5.0	03/16/22	03/16/22
Toluene	ND		ug/Kg	5.0	03/16/22	03/16/22
trans-1,3-Dichloropropene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,1,2-Trichloroethane	ND		ug/Kg	5.0	03/16/22	03/16/22
1,3-Dichloropropane	ND		ug/Kg	5.0	03/16/22	03/16/22
Tetrachloroethene	ND		ug/Kg	5.0	03/16/22	03/16/22
Dibromochloromethane	ND		ug/Kg	5.0	03/16/22	03/16/22

Batch QC

QC977759 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
1,2-Dibromoethane	ND		ug/Kg	5.0	03/16/22	03/16/22
Chlorobenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,1,1,2-Tetrachloroethane	ND		ug/Kg	5.0	03/16/22	03/16/22
Ethylbenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
m,p-Xylenes	ND		ug/Kg	10	03/16/22	03/16/22
o-Xylene	ND		ug/Kg	5.0	03/16/22	03/16/22
Styrene	ND		ug/Kg	5.0	03/16/22	03/16/22
Bromoform	ND		ug/Kg	5.0	03/16/22	03/16/22
Isopropylbenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,1,2,2-Tetrachloroethane	ND		ug/Kg	5.0	03/16/22	03/16/22
1,2,3-Trichloropropane	ND		ug/Kg	5.0	03/16/22	03/16/22
Propylbenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
Bromobenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,3,5-Trimethylbenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
2-Chlorotoluene	ND		ug/Kg	5.0	03/16/22	03/16/22
4-Chlorotoluene	ND		ug/Kg	5.0	03/16/22	03/16/22
tert-Butylbenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,2,4-Trimethylbenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
sec-Butylbenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
para-Isopropyl Toluene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,3-Dichlorobenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,4-Dichlorobenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
n-Butylbenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,2-Dichlorobenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,2-Dibromo-3-Chloropropane	ND		ug/Kg	5.0	03/16/22	03/16/22
1,2,4-Trichlorobenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
Hexachlorobutadiene	ND		ug/Kg	5.0	03/16/22	03/16/22
Naphthalene	ND		ug/Kg	5.0	03/16/22	03/16/22
1,2,3-Trichlorobenzene	ND		ug/Kg	5.0	03/16/22	03/16/22
Xylene (total)	ND		ug/Kg	5.0	03/16/22	03/16/22
Surrogates				**Limits**		
Dibromofluoromethane	94%		%REC	70-130	03/16/22	03/16/22
1,2-Dichloroethane-d4	97%		%REC	70-145	03/16/22	03/16/22
Toluene-d8	106%		%REC	70-145	03/16/22	03/16/22
Bromofluorobenzene	98%		%REC	70-145	03/16/22	03/16/22

ENTHALPY ANALYTICAL

Batch QC

Type:	**Lab Control Sample**	**Lab ID:**	**QC977760**	**Batch:**	**285634**
Matrix:	**Soil**	**Method:**	**EPA 8260B**	**Prep Method:**	**EPA 5030B**

QC977760 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
1,1-Dichloroethene	39.09	50.00	ug/Kg	78%		70-131
MTBE	43.02	50.00	ug/Kg	86%		69-130
Benzene	47.47	50.00	ug/Kg	95%		70-130
Trichloroethene	50.88	50.00	ug/Kg	102%		70-130
Toluene	49.01	50.00	ug/Kg	98%		70-130
Chlorobenzene	48.83	50.00	ug/Kg	98%		70-130
Surrogates						
Dibromofluoromethane	49.31	50.00	ug/Kg	99%		70-130
1,2-Dichloroethane-d4	46.86	50.00	ug/Kg	94%		70-145
Toluene-d8	53.15	50.00	ug/Kg	106%		70-145
Bromofluorobenzene	50.23	50.00	ug/Kg	100%		70-145

Type:	**Lab Control Sample Duplicate**	**Lab ID:**	**QC977761**	**Batch:**	**285634**
Matrix:	**Soil**	**Method:**	**EPA 8260B**	**Prep Method:**	**EPA 5030B**

QC977761 Analyte	Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim
1,1-Dichloroethene	40.32	50.00	ug/Kg	81%		70-131	3	33
MTBE	45.42	50.00	ug/Kg	91%		69-130	5	30
Benzene	51.51	50.00	ug/Kg	103%		70-130	8	30
Trichloroethene	56.04	50.00	ug/Kg	112%		70-130	10	30
Toluene	53.85	50.00	ug/Kg	108%		70-130	9	30
Chlorobenzene	54.52	50.00	ug/Kg	109%		70-130	11	30
Surrogates								
Dibromofluoromethane	49.40	50.00	ug/Kg	99%		70-130		
1,2-Dichloroethane-d4	47.44	50.00	ug/Kg	95%		70-145		
Toluene-d8	53.56	50.00	ug/Kg	107%		70-145		
Bromofluorobenzene	50.36	50.00	ug/Kg	101%		70-145		

Batch QC

Type: Lab Control Sample	Lab ID: QC977880	Batch: 285634
Matrix: Soil	Method: EPA 8260B	Prep Method: EPA 5030B

QC977880 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
1,1-Dichloroethene	42.94	50.00	ug/Kg	86%		70-131
MTBE	35.87	50.00	ug/Kg	72%		69-130
Benzene	42.95	50.00	ug/Kg	86%		70-130
Trichloroethene	49.02	50.00	ug/Kg	98%		70-130
Toluene	46.42	50.00	ug/Kg	93%		70-130
Chlorobenzene	45.96	50.00	ug/Kg	92%		70-130
Surrogates						
Dibromofluoromethane	48.35	50.00	ug/Kg	97%		70-130
1,2-Dichloroethane-d4	47.21	50.00	ug/Kg	94%		70-145
Toluene-d8	54.75	50.00	ug/Kg	109%		70-145
Bromofluorobenzene	50.32	50.00	ug/Kg	101%		70-145

* Value is outside QC limits
ND Not Detected
b See narrative

Laboratory Job Number 459721

Subcontracted Products

McCampbell Analytical, Inc.

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder:	2203996
Report Created for:	Enthalpy Analytical
	1108 West Barkley Avenue Orange, CA 92868
Project Contact:	Ranjit Clarke
Project P.O.:	024757
Project:	EO-459721
Project Received:	03/16/2022

Analytical Report reviewed & approved for release on 03/23/2022 by:

Yen Cao

Yen Cao
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in a case narrative.

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CA ELAP 1644 ♦ NELAP 4033 ORELAP

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Glossary of Terms & Qualifier Definitions

Client: Enthalpy Analytical **WorkOrder:** 2203996
Project: EO-459721

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: Enthalpy Analytical **WorkOrder:** 2203996
Project: EO-459721

Analytical Qualifiers

a3	Sample diluted due to high organic content interfering with quantitative/or qualitative analysis.

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Analytical Report

Client:	Enthalpy Analytical	**WorkOrder:**	2203996
Date Received:	03/16/2022 12:05	**Extraction Method:**	SW8151A
Date Prepared:	03/17/2022	**Analytical Method:**	SW8151A
Project:	EO-459721	**Unit:**	mg/kg

Chlorinated Herbicides by GC-ECD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-1@2'	**2203996-001A**	**Soil**	**03/11/2022 07:50**	**GC15A 03172225.D**	**241453**

Analytes	Result	RL	DF	Date Analyzed
Acifluorfen	ND	0.050	5	03/17/2022 23:51
Bentazon	ND	0.050	5	03/17/2022 23:51
Chloramben	ND	0.050	5	03/17/2022 23:51
2,4-D (Dichlorophenoxyacetic acid)	ND	0.050	5	03/17/2022 23:51
2,4-DB	ND	0.050	5	03/17/2022 23:51
Dalapon	ND	0.050	5	03/17/2022 23:51
DCPA (mono & diacid)	ND	0.050	5	03/17/2022 23:51
Dicamba	ND	0.050	5	03/17/2022 23:51
3,5-Dichlorobenzoic Acid	ND	0.050	5	03/17/2022 23:51
Dichloroprop	ND	0.050	5	03/17/2022 23:51
Dinoseb (DNBP)	ND	0.050	5	03/17/2022 23:51
MCPA	ND	5.0	5	03/17/2022 23:51
MCPP	ND	5.0	5	03/17/2022 23:51
4-Nitrophenol	ND	0.050	5	03/17/2022 23:51
Pentachlorophenol (PCP)	ND	0.050	5	03/17/2022 23:51
Picloram	ND	0.050	5	03/17/2022 23:51
2,4,5-T (Trichlorophenoxy acetic acid)	ND	0.050	5	03/17/2022 23:51
2,4,5-TP (Silvex)	ND	0.050	5	03/17/2022 23:51

Surrogates	REC (%)	Limits	Date Analyzed
DCAA	83	60-140	03/17/2022 23:51

Analyst(s): DP

Analytical Comments: a3

(Cont.)

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Analytical Report

Client:	Enthalpy Analytical	**WorkOrder:**	2203996
Date Received:	03/16/2022 12:05	**Extraction Method:**	SW8151A
Date Prepared:	03/17/2022	**Analytical Method:**	SW8151A
Project:	EO-459721	**Unit:**	mg/kg

Chlorinated Herbicides by GC-ECD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-2@1.0'	2203996-002A	Soil	03/11/2022 11:40	GC15A 03172226.D	241453

Analytes	Result	RL	DF	Date Analyzed
Acifluorfen	ND	0.050	5	03/18/2022 00:15
Bentazon	ND	0.050	5	03/18/2022 00:15
Chloramben	ND	0.050	5	03/18/2022 00:15
2,4-D (Dichlorophenoxyacetic acid)	ND	0.050	5	03/18/2022 00:15
2,4-DB	ND	0.050	5	03/18/2022 00:15
Dalapon	ND	0.050	5	03/18/2022 00:15
DCPA (mono & diacid)	ND	0.050	5	03/18/2022 00:15
Dicamba	ND	0.050	5	03/18/2022 00:15
3,5-Dichlorobenzoic Acid	ND	0.050	5	03/18/2022 00:15
Dichloroprop	ND	0.050	5	03/18/2022 00:15
Dinoseb (DNBP)	ND	0.050	5	03/18/2022 00:15
MCPA	ND	5.0	5	03/18/2022 00:15
MCPP	ND	5.0	5	03/18/2022 00:15
4-Nitrophenol	ND	0.050	5	03/18/2022 00:15
Pentachlorophenol (PCP)	ND	0.050	5	03/18/2022 00:15
Picloram	ND	0.050	5	03/18/2022 00:15
2,4,5-T (Trichlorophenoxy acetic acid)	ND	0.050	5	03/18/2022 00:15
2,4,5-TP (Silvex)	ND	0.050	5	03/18/2022 00:15

Surrogates	REC (%)	Limits	Date Analyzed
DCAA	91	60-140	03/18/2022 00:15

Analyst(s): DP

Analytical Comments: a3

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Quality Control Report

Client:	Enthalpy Analytical	**WorkOrder:**	2203996
Date Prepared:	03/17/2022	**BatchID:**	241453
Date Analyzed:	03/17/2022	**Extraction Method:**	SW8151A
Instrument:	GC15A	**Analytical Method:**	SW8151A
Matrix:	Soil	**Unit:**	mg/kg
Project:	EO-459721	**Sample ID:**	MB/LCS/LCSD-241453

QC Summary Report for SW8151A

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Acifluorfen	ND	0.0042	0.010	-	-	-
Bentazon	ND	0.0026	0.010	-	-	-
Chloramben	ND	0.0053	0.010	-	-	-
2,4-D (Dichlorophenoxyacetic acid)	ND	0.0038	0.010	-	-	-
2,4-DB	ND	0.0046	0.010	-	-	-
Dalapon	ND	0.0063	0.010	-	-	-
DCPA (mono & diacid)	ND	0.0042	0.010	-	-	-
Dicamba	ND	0.0025	0.010	-	-	-
3,5-Dichlorobenzoic Acid	ND	0.0034	0.010	-	-	-
Dichloroprop	ND	0.0028	0.010	-	-	-
Dinoseb (DNBP)	ND	0.0026	0.010	-	-	-
MCPA	ND	0.42	1.0	-	-	-
MCPP	ND	0.33	1.0	-	-	-
4-Nitrophenol	ND	0.0073	0.010	-	-	-
Pentachlorophenol (PCP)	ND	0.0019	0.010	-	-	-
Picloram	ND	0.0037	0.010	-	-	-
2,4,5-T (Trichlorophenoxy acetic acid)	ND	0.0026	0.010	-	-	-
2,4,5-TP (Silvex)	ND	0.0020	0.010	-	-	-
Surrogate Recovery						
DCAA	0.11			0.1	113	63-129

(Cont.)

Quality Control Report

Client:	Enthalpy Analytical	**WorkOrder:**	2203996
Date Prepared:	03/17/2022	**BatchID:**	241453
Date Analyzed:	03/17/2022	**Extraction Method:**	SW8151A
Instrument:	GC15A	**Analytical Method:**	SW8151A
Matrix:	Soil	**Unit:**	mg/kg
Project:	EO-459721	**Sample ID:**	MB/LCS/LCSD-241453

QC Summary Report for SW8151A

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acifluorfen	0.10	0.10	0.10	101	100	60-140	0.816	30
Bentazon	0.10	0.10	0.10	101	103	60-140	2.03	30
Chloramben	0.10	0.11	0.10	104	107	60-140	2.01	30
2,4-D (Dichlorophenoxyacetic acid)	0.10	0.11	0.10	103	106	67-147	3.11	30
2,4-DB	0.11	0.11	0.10	105	108	61-152	2.17	30
Dalapon	0.10	0.10	0.10	101	102	54-153	0.641	30
DCPA (mono & diacid)	0.085	0.086	0.10	85	86	60-140	1.15	30
Dicamba	0.098	0.10	0.10	98	100	60-146	2.77	30
3,5-Dichlorobenzoic Acid	0.098	0.10	0.10	98	101	60-140	2.60	30
Dichloroprop	0.10	0.10	0.10	100	104	60-140	3.57	30
Dinoseb (DNBP)	0.091	0.092	0.10	91	92	60-140	1.47	30
MCPA	9.7	10	10	97	100	60-140	2.83	30
MCPP	9.7	10	10	97	100	60-140	2.58	30
4-Nitrophenol	0.12	0.12	0.10	122	124	60-140	1.99	30
Pentachlorophenol (PCP)	0.092	0.094	0.10	92	94	60-140	2.25	30
Picloram	0.094	0.094	0.10	94	94	60-140	0.686	30
2,4,5-T (Trichlorophenoxy acetic acid)	0.10	0.10	0.10	102	104	60-140	2.39	30
2,4,5-TP (Silvex)	0.098	0.10	0.10	98	101	63-145	2.45	30
Surrogate Recovery								
DCAA	0.12	0.12	0.10	119	122	63-129	2.90	30

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(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2203996 **ClientCode: ENO**

- [ ] WaterTrax
- [ ] CLIP
- [ ] EDF
- [ ] EQuIS
- [ ] Dry-Weight
- [x] Email
- [ ] HardCopy
- [ ] ThirdParty
- [x] J-flag
- [ ] Detection Summary
- [x] Excel [A1_w/QC_noMDL (Hist)]

Report to:
Ranjit Clarke
Enthalpy Analytical
1108 West Barkley Avenue
Orange, CA 92868
(714) 771-6900 FAX:

Email: Ranjit.Clarke@enthalpy.com; incomingrepo
cc/3rd Party:
PO: 024757
Project: EO-459721

Bill to:
Accounts Payable/Enthalpy SoCal
Montrose Environmental Group
PO Box 842165
Boston, MA 02284-2165
003EL_ap@montrose-env.com

Requested TAT: **5 days;**

Date Received: **03/16/2022**
Date Logged: **03/16/2022**

					Requested Tests (See legend below)											
Lab ID	**Client ID**	**Matrix**	**Collection Date**	**Hold**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
2203996-001	B-1@2'	Soil	3/11/2022 07:50	☐	A	A										
2203996-002	B-2@1.0'	Soil	3/11/2022 11:40	☐	A	A										

Test Legend:

1	**8151_S**	**2**	**PRDisposal Fee**	**3**		**4**	
5		**6**		**7**		**8**	
9		**10**		**11**		**12**	

Prepared by: Tina Perez

Comments:

NOTE: Soil samples are discarded 60 days after receipt unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: ENTHALPY ANALYTICAL
Project: EO-459721
Work Order: 2203996

Client Contact: Ranjit Clarke
QC Level: LEVEL 2

Contact's Email: Ranjit.Clarke@enthalpy.com; incomingreports@enthalpy.com
Comments:
Date Logged: 3/16/2022

☐ WaterTrax ☐ WriteOn ☐ EDF ☑ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☑ J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	B-1@2'	Soil	SW8151A (Chlorinated Herbicides)	1	4OZ GJ, Unpres	☐	☐	☐	3/11/2022 7:50	5 days	3/23/2022		☐	☐
002A	B-2@1.0'	Soil	SW8151A (Chlorinated Herbicides)	1	4OZ GJ, Unpres	☐	☐	☐	3/11/2022 11:40	5 days	3/23/2022		☐	☐

NOTES: * STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

U = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.**

2203996

ENTHALPY ANALYTICAL

Enthalpy Analytical - Orange
Orange, CA 92868
(714) 771-6900 / Fax: (510) 486-0532

<u>Subcontract Laboratory:</u>
McCampbell Analytical, Inc.
1534 Willow Pass Rd.
Pittsburg, CA 94565
ATTN: Angela Rydelius
PO #: Required, to be sent via email

<u>Enthalpy Order: EO-459721</u>
PM: Ranjit K Clarke
Email: Ranjit.Clarke@enthalpy.com
CC: incomingreports@enthalpy.com
Phone: (714) 771-9906

Results Due: Standard TAT
Report Level: II
Report To: RL
EDDs: Standard Excel EDD

DRAFT

Notes:

Sample ID	Collected	Lab ID	# Cont.	Matrix	Analysis Requested	Comment
B-1@2'	11-MAR-2022 07:50	459721-001	1	Soil	EPA 8151A Chlorinated Herbicides	
B-2@1.0'	11-MAR-2022 11:40	459721-002	1	Soil	EPA 8151A Chlorinated Herbicides	

Notes:	Relinquished By:	Received By:
	Date: 3/15/22 1830	Date: 3/16/22 @ 1205
	Date:	Date:
	Date:	Date:

2.2°C wet

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Sample Receipt Checklist

Client Name:	**Enthalpy Analytical**	Date and Time Received:	**3/16/2022 12:05**
Project:	**EO-459721**	Date Logged:	**3/16/2022**
		Received by:	Tina Perez
WorkOrder №:	**2203996** Matrix: Soil	Logged by:	Tina Perez
Carrier:	Golden State Overnight		

Chain of Custody (COC) Information

	Yes	No	NA
Chain of custody present?	☑	☐	
Chain of custody signed when relinquished and received?	☑	☐	
Chain of custody agrees with sample labels?	☑	☐	
Sample IDs noted by Client on COC?	☑	☐	
Date and Time of collection noted by Client on COC?	☑	☐	
Sampler's name noted on COC?	☐	☑	
COC agrees with Quote?	☐	☐	☑

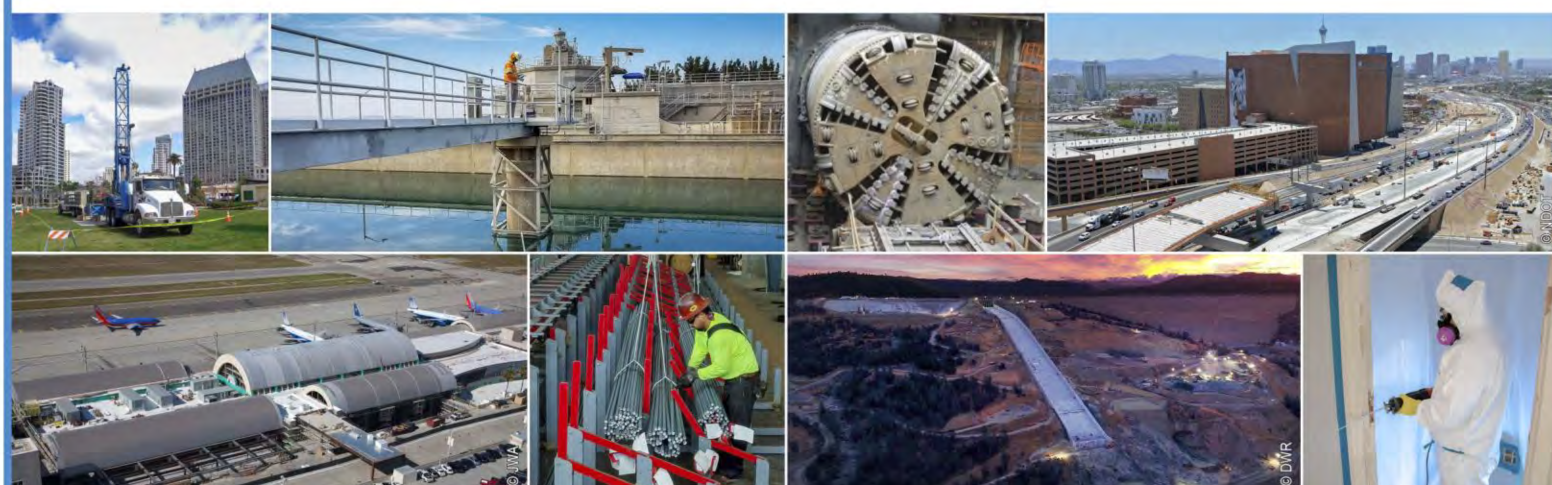
Sample Receipt Information

	Yes	No	NA
Custody seals intact on shipping container/cooler?	☑	☐	☐
Custody seals intact on sample bottles?	☑	☐	☐
Shipping container/cooler in good condition?	☑	☐	
Samples in proper containers/bottles?	☑	☐	
Sample containers intact?	☑	☐	
Sufficient sample volume for indicated test?	☑	☐	

Sample Preservation and Hold Time (HT) Information

	Yes	No	NA
All samples received within holding time?	☑	☐	☐
Samples Received on Ice? (Ice Type: WET ICE)	☑	☐	
Sample/Temp Blank temperature	Temp: 2.2°C		☐
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	☐	☐	☑
Sample labels checked for correct preservation?	☑	☐	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	☐	☐	☑
UCMR Samples:			
pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)?	☐	☐	☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]?	☐	☐	☑

Comments:



475 Goddard, Suite 200 | Irvine, California 92618 | p. 949.753.7070

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Geotechnical & Environmental Sciences Consultants

APPENDIX E – PALEONTOLOGICAL RECORDS SEARCH THROUGH THE NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

April 14, 2021

Dudek

Attn: Michael Williams

re: Paleontological resources for the Goleta Sanitary District Project (PN: 12642)

Dear Michael:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Goleta Sanitary District project area as outlined on the portion of the Goleta USGS topographic quadrangle map that you sent to me via e-mail on April 8, 2021. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County.

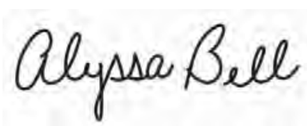
Locality Number	Location	Formation	Taxa	Depth
LACM VP 5018; LACM IP 36, 416, 6913, 6919	Seacliff about 1.5 miles long; south of Isla Vista between Goleta Point & Coal Oil Point	Unknown formation (Pleistocene; conglomerate & sandstone; locally coquinoid)	Fish (Osteichthyes); Invertebrates (*Alia, Axinopsida, Barbarofusus, Caesia, Callianax, Callithaca, Calyptraea, Cancer, Cellaria, Crepidula,* Cystiscidae, Decaopoda, *Glans, Hima, Leukoma, Lirobittium, Lottia, Lucinisca, Mactromeris, Macoma, Miodontiscus, Mitrella, Mytilidaae, Nutricola, Ostrea, Paciocinebrina, Penitella, Platyodon, Saxidomas, Solen, Strongylocentrotus, Tellina, Tresus, Urosalpirix*)	Unknown
LACM VP 7954	El Capitan State Beach	Monterey Formation	Sperm whale (Physeteridae)	Surface
LACM IP 8057	Coast about 1/4 mile east of Goleta Landing	Pleistocene terrace	Invertebrate (*Cryptonatica*)	Unknown

LACM IP 8056	Coast about 1 mile east of Goleta Landing	Unknown formation (Pleistocene conglomerate)	Invertebrates (unspecified)	Unknown
LACM VP 1013	Victoria St. Sand Pit. Packard's Hill*	Unknown formation (Miocene)	Cormorant (*Phalacrocorax)*	Unknown
LACM VP 5610, 65174	Gaviota Beach	Monterey Formation	Flounder(*Paralichthys*), bony fish (Eclipes, Thyrsocle), herring (Xyne grex); plants	Unknown

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface
**Published in Howard, 1931; Condor; 33(1):30-31*

This records search covers only the records of the Natural History Museum of Los Angeles County ("NHMLA"). It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice

APPENDIX F (CONFIDENTIAL) – NATIVE AMERICAN CULTURAL RESOURCES

Pursuant to Public Resources Code § 21080.3. I (a) and Government Code § 65352.4, the Tribal Cultural Resources Appendix is confidential and is only available to eligible individuals.

APPENDIX G – MITIGATION MONITORING AND REPORTING PROGRAM

Section 21081.6 of the PRC requires public agencies to adopt a Mitigation Monitoring and Reporting Program (MMRP) for changes to the project which it has adopted, or made a condition of project approval, in order to mitigate or avoid significant effects on the environment. An MMRP is required for the proposed Project, because the IS/MND identified potentially significant adverse impacts related to construction activity, and mitigation measures have been identified to mitigate these impacts. Adoption of the MMRP will occur along with approval of the Project.

Mitigation Measure No.	Mitigation Measure	Method of Verification	Timing of Verification			Responsible Party	Completed		Comments
			Pre-Const.	*During Const.*	*Post-Const.*		*Initials*	*Date*	
Biological Resources									
MM-BIO-1	Pre-construction Nesting Bird Surveys. If Project activities are proposed during the general avian breeding season of January 15 to September 15, the Project biologist shall conduct a pre-construction survey for active nests within 500 feet of the construction area and submit a letter report to the County of Santa Barbara (County) prior to the pre-construction meeting. If active nests are detected, clearing and construction within a minimum of 300 feet shall be postponed until the nest(s) is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. If an active raptor or rare, threatened, endangered, or species of special concern bird nest is found, clearing and construction within a minimum of 500 feet shall be postponed until the nest(s) is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. The report submitted to the County shall include mitigation measures including, but not limited to, (1) worker environmental awareness training, (2) daily biological monitoring during construction activities, and (3) the locations of flags and/or stakes to provide the appropriate avoidance buffers. If no nesting birds are detected during the pre-construction survey, no mitigation is required. The Project biologist shall continue to perform site surveys during all construction activities to detect any nesting birds that may nest on the Project site after the pre-construction survey. Pre-construction clearance surveys shall be	The results of the pre-construction nesting bird survey will be submitted to the County prior to the pre-construction meeting to document compliance with applicable State and federal laws pertaining to the protection of native birds.	X			Goleta Sanitary District			

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	completed, as required, to comply with the federal Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, California Fish and Game Code, and/or County regulations. If the biological monitor determines that Project activities are disturbing or disrupting nesting activities, the monitor will make recommendations to County staff to reduce the noise or disturbance in the vicinity. This may include recommendations such as (1) turning off vehicle engines and other equipment whenever possible to reduce noise, (2) working in other areas until the young have fledged, and (3) stopping work until young are independent of their nests (Development Standard ECO-EGV-2C in County of Santa Barbara 2017).								
MM-BIO-2	**Erosion and Sediment Control Plan (ESCP).** Due to the Project impact of less than 1 acre, the Applicant shall prepare an ESCP to minimize the potential for discharge of pollutants during construction activities. The ESCP shall be designed to minimize erosion during construction and shall be implemented for the duration of the grading period and until re-graded areas have been stabilized by structures, long-term erosion control measures, or permanent landscaping. The ESCP shall include both structural and non-structural Best Management Practices (BMPs), including straw wattles around storm drains, silt fencing, and/or other physical controls to divert flows from exposed soil, spill prevention methods, and clean housekeeping methods for storing and refueling machinery. The ESCP shall	BMPs inspection regularly and prior to storm events. Maintain BMPs in good condition at all times and monitor the site's stormwater measures, prior to the start of construction, as well as throughout the	X	X		Contractor			

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	use BMPs designed to stabilize the site, protect natural watercourses/creeks, prevent erosion, and convey stormwater runoff to existing drainage systems, keeping contaminants and sediments on-site. As part of the ESCP, the contractor shall include specifications, installation requirements, and locations of appropriate BMPs to control sediment, coarse particles, concrete, and other materials exposed during construction. During construction activities, washing of concrete or equipment shall occur only in areas where polluted water and materials can be contained for subsequent removal from the site. Washing will not be allowed in locations where the tainted water could enter storm drains. There is a stormwater conveyance swale located in the grassy field, south of the staging area. A 50-foot buffer is required from this feature. The southern boundary of the staging area will need appropriate BMPs, such as a silt fence, to protect stormwater.	duration of construction, to ensure they continue to function properly.							

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	Requirements and Timing The ESCP shall be submitted and approved prior to any ground disturbance. A County-approved ESCP is required in order to be issued a Grading Permit. ESCPs shall be developed by a professional knowledgeable in erosion and sediment control. It is recommended that a Certified Professional in Sediment and Erosion Control develop the ESCP. The responsible party shall designate an individual to be responsible for on-site installation, maintenance, and removal of ESCP measures. The ESCP requirements shall be implemented between November 1st and April 15th of each year, except pollution control measures, which shall be implemented year-round.								
Cultural Resources									
MM-CUL-1	**Data Recovery.** Based on the determination that, despite efforts to avoid significant intact cultural deposits, the Proposed Project would impact cultural deposits of moderate density, the Project therefore has the potential to adversely affect a unique archeological resource. As such, pursuant to the California Environmental Quality Act (CEQA), data recovery is required to be implemented according to following tasks: A qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, shall be retained to develop a data recovery program and research design prior to the data recovery efforts, and they shall make provision for adequately recovering the	Submittal/ review of Data Recovery Research Design and Work Plan and Final Data Recovery Report to District.	X			Goleta Sanitary District			

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	scientifically consequential information from, and about, the resource; this shall be prepared and adopted prior to any excavation being undertaken (CEQA Guidelines Section 15126.4(b)(3)(A)). As such, the data recovery plan shall include specific levels of effort and methods to obtain a statistically representative sample of significant archaeological deposits, as well as field and laboratory requirements, to ensure proper treatment of all materials, including documentation of results and curation of the archaeological collection. This plan shall be submitted to the District for review prior to implementation. Specifically, the data recovery plan shall, at the least, include the standards, guidelines, and performance criteria to ensure that the data recovery mitigation will be effective in "adequately recovering the scientifically consequential information from and about the historical resource" as stated in CEQA Guidelines Section 15126.4(b)(3)(C). The following are basic criteria, based on the California Office of Historic Preservation (OHP) Guidelines for Archaeological Research Designs (OHP 1991) from which a more detailed and comprehensive data recovery plan shall be formulated: ➢ Professional Qualifications – The data recovery plan shall be designed by a qualified archaeologist meeting the Secretary of Interior's Professional Qualifications for archaeology, including at least 2 years documented supervisory experience in the study of prehistoric archaeological resources of the region.								

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	➢ Research Design – The research design shall be developed to satisfy the requirement for public benefit that can be derived from the data recovery efforts. The design shall focus research on one or more important hypotheses that have been carefully constructed to address current data gaps, new models, theories, investigative and conservation techniques, as well as priority research areas identified by state or federal agencies (OHP 1991; National Park Service 2020). The design shall have the following requirements for its goals, pursuant to OHP guidelines: focus on important goals; be realistic and attainable; establish efficient methods to accomplish the goals; understandable; provide a thorough and well-organized argument; and concise and flexible. ➢ Fieldwork, Laboratory, and Curation Methods – The data recovery field methods shall be designed to recover the entire portion of the cultural resource (sandstone-lined well) that will be impacted as a result of the ground disturbance, plus a statistically significant assemblage of any surrounding resource deposit, sufficient to answer the research questions determined in the data recovery research design, that the site is potentially capable of addressing. ➢ Report Elements – The data recovery efforts shall be thoroughly documented in a comprehensive report, including the following core elements: theoretical orientation; cultural context; definition of the formulated								

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	hypotheses presented in the original research design; all field, laboratory, and curation methods; results of research; and implications of the results, in light of current understanding, and its potential to contribute to future research and understanding.								
MM-CUL-2	**Construction Monitoring Treatment Plan**. Impacts to cultural resources shall be minimized through implementation of pre- and post-construction tasks. Tasks pertaining to cultural resources include the development of a Construction Monitoring Treatment Plan (Plan). The purpose of the Plan is to outline a program of treatment and mitigation in the case of an inadvertent discovery of cultural resources during ground-disturbing phases and to provide for the proper identification, evaluation, treatment, and protection of any cultural resources throughout the duration of the Project. This Plan shall define the process to be followed for the identification and management of cultural resources in the Project area during construction. Existence of, and importance of, adherence to this Plan shall be stated on all Project site plans intended for use by those conducting the ground-disturbing activities.	Submittal/ review of Construction Monitoring Treatment Plan to District.	X			Goleta Sanitary District			
MM-CUL-3	**Workers Environmental Awareness Program (WEAP) Training**. All construction personnel and monitors who are not trained archaeologists should be briefed regarding unanticipated discoveries prior to the start of ground disturbing activities. A basic presentation shall be prepared and presented by a qualified archaeologist and Native American representative to inform all	Submittal/ review of Workers Environmental Awareness Program. (WEAP) Training to	X	X		Goleta Sanitary District/ Contractor			

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	personnel working on the Project about the archaeological sensitivity of the area. The purpose of the WEAP training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the Project and explain the importance of, and legal basis for, the protection of significant archaeological resources. Each worker shall also be instructed on the proper procedures to follow, in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, plus the immediate contact of the archaeological monitor (if no monitor is present, senior archaeologist) and Native American monitor. Necessity of training attendance shall be stated on all Project site plans intended for use by those conducting the ground-disturbing activities.	District/ Contractor ensures all applicable personnel are trained.							

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MM-CUL-4	**Archaeological Monitoring.** A qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, shall monitor all initial (first movement of soils within each ground disturbance location at complete horizontal and vertical extents) ground disturbances within the Proposed Project site. A qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for a Principal Investigator, shall oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue spot monitoring frequency), based on the observed potential for construction activities to encounter cultural deposits. The archaeological monitor shall be responsible for maintaining monitoring logs. Following the completion of construction, the qualified archaeologist shall provide an archaeological monitoring report to the District and the Central Coast Information Center (CCIC) with the results of the cultural monitoring program.	Submittal/ review of monitoring logs and final report to District/ Contractor to ensure archaeology monitors are on-site during all ground-disturbing activities.		X	X	Goleta Sanitary District/ Contractor			
MM-CUL-5	**Inadvertent Discovery of Archaeological Resources.** In the event that archaeological resources (sites, features, or artifacts) are exposed during ground-disturbing activities for the Project, all construction work occurring within 50 feet of the find should immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the	In event of inadvertent discovery of cultural resources, work shall stop; qualified archaeologist evaluates, Native American		X		Goleta Sanitary District/ Contractor			

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	find under the California Environmental Quality Act (14 CCR 15064.5(f); California PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted. If the discovery is Native American in nature, consultation with and/or monitoring by a Tribal representative may be necessary. If a discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately, as well as the qualified archaeologist and the District. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission (NAHC), who will provide the name and contact information for the Most Likely Descendent (MLD). Treatment of the discovery shall be decided in consultation with the MLD, provided by the NAHC. Additionally, a Tribal representative shall be retained to monitor all further subsurface disturbance in the area of the find. In the event of the discovery of human remains, work in the area of discovery may only proceed after the District grants authorization.	representative consulted, and (if the discovery is human remains) Coroner will be immediately contacted.							

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Geology and Soils									
MM-GEO-1	**Paleontological Resources Impact Mitigation Program and Paleontological Monitoring.** Prior to commencement of any grading activity on-site, the applicant shall retain a qualified paleontologist, per the Society of Vertebrate Paleontology (SVP) (2010) guidelines. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the Proposed Project. The PRIMP shall be consistent with the SVP (2010) guidelines and outline requirements for pre-construction meeting attendance and worker environmental awareness training, where paleontological monitoring is required within the Project site based on construction plans and/or geotechnical reports, procedures for adequate paleontological monitoring and discoveries treatment, and paleontological methods (including sediment sampling for microinvertebrate and microvertebrate fossils), reporting, and collections management. The qualified paleontologist shall attend the pre-construction meeting, and a qualified paleontological monitor shall be on-site during initial rough grading and other significant ground-disturbing activities (including augering) in previously undisturbed, early Pleistocene to late Pliocene unnamed marine sedimentary units and Monterey Formation deposits. The qualified paleontological monitor shall also be on-site during initial grading below a depth of 5 feet of the ground surface, in areas underlain by Holocene estuarine deposits, to determine if they	Submittal/ review of PRIMP, monitoring logs, and final report to District/ Contractor to ensure paleontology monitors are present for WEAP training and on-site during initial grading depth of 5 feet below the ground surface in areas underlain by Holocene estuarine deposits.	X	X	X	Goleta Sanitary District/ Contractor			

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	are old enough to preserve scientifically significant paleontological resources. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will allow grading to recommence in the area of the find.								
Greenhouse Gases									
MM-GHG-1	**GHG Emissions Reductions.** GSD shall design and construct the thermal dryer facility to allow combustion of both natural gas and digester gas. Once sufficient biogas is available and implementation is feasible, the facility shall transition to biogas as the primary fuel source to reduce fossil fuel consumption and the associated GHG emissions.	GSD will require in bid documents that the fluid heater is designed and built to allow for biogas use.	X	X	X	Goleta Sanitary District/ Contractor			

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Tribal Cultural Resources									
MM-TCR-1	**Workers Environmental Awareness Program.** All interested tribes that requested and participated in formal Assembly Bill (AB) 52 consultation (referred to as "interested Tribe"), shall be notified by the GSD of the time and location of the WEAP training no later than 72 hours prior to its scheduled occurrence. GSD shall provide all interested consulting tribes access and opportunity to participate in the WEAP training.	District to notify all interested tribes that requested and participated in formal AB 52 consultation of the time and location of the WEAP training, no later than 72 hours prior to its scheduled occurrence; Contractor to ensure Native American representative is present for WEAP training.	X	X		Goleta Sanitary District/ Contractor			

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MM-TCR-2	**Retention of a Native American Monitoring.** Prior to any ground disturbance activities, GSD shall contact any interested Tribes, with notification of the commencement of ground-disturbing activities, including archaeological excavations. The applicant shall make arrangements with the interested Tribe(s), to enter into a Native American Monitoring Agreement with the intent of securing a total of one Native American monitor to be present during initial ground disturbance, occurring from 1 foot above native soils and below. Initial ground disturbance is defined as initial construction-related earthmoving of sediments from their place of deposition; this includes archaeological investigations. As it pertains to cultural resource (archaeological or Native American) monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by current Project-related construction. The need for cultural resource monitoring (archaeological and Native American) will be determined by a qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards for a Principal Investigator, in consultation with interested tribes who shall oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency), based on the observed potential for construction activities to encounter cultural deposits or material. More than one monitor may be required if multiple areas within the Project site are simultaneously exposed to initial ground disturbance, as previously defined in these	District to notify all interested tribes of the start of ground-disturbing activities, including archaeology excavations, and to enter Native American Monitoring Agreement; Contractor to ensure archaeology monitors are on-site during all ground-disturbing activities.	X	X		Goleta Sanitary District/ Contractor			

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	mitigation measures, causing monitoring to be hindered by the distance of the simultaneous activities. The need for an additional monitor shall be made by the qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, in consultation with interested tribes. The Native American monitoring agreement(s) shall include, but not be limited to, outlining provisions and requirements for establishing on-site Native American monitoring for professional tribal monitors during initial ground disturbance, as defined above. If multiple interested tribes request to be present during initial ground-disturbing activities, each interested Tribe will be provided access to the Project site when initial ground-disturbing activities are occurring and with a 48-hour notice. However, one interested Tribe at a time will be monetarily compensated for monitoring. If more than one interested Tribe would like to be retained for monetary compensation, a schedule will be created to equally share the Native American monitoring duties.								

MM-TCR-3	**Inadvertent Discovery of Tribal Cultural Resources.** In the event that tribal cultural resources (TCRs) (sites, features, or artifacts) are exposed during ground-disturbing activities for the Project, all construction work occurring within 50 feet of the find should immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find, in consultation with interested Tribe(s) as appropriate, and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); California PRC Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted. If the discovery is Native American in nature, consultation with and/or monitoring by a Tribal representative may be necessary. If a discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately as well as the qualified archaeological Principal Investigator and GSD. If the Coroner determines that the remains are Native American, the Coroner shall contact the NAHC, who will provide the name and contact information for the MLD. Treatment of the discovery shall be decided in consultation with the MLD provided by the NAHC. Additionally, a Tribal representative shall be retained to monitor all further subsurface disturbance in the area of the find. In the event of the discovery of human remains, work in the area of discovery may only proceed after GSD grants authorization.	In event of inadvertent discovery of TCRs, work shall stop; Native American representative will be consulted; and (if the discovery is human remains) Coroner will be immediately contacted.		X		Goleta Sanitary District/ Contractor			

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Utilities and Service Systems									
MM-UTIL-1	Solid Waste Diversion from Landfill: GSD will ensure that the construction contractor does not dispose of greater than 350 tons of solid waste in any California landfill. The contractor may exceed 350 tons only if they receive written permission from a landfill (for example if the landfill wants soils for barrier layers), or if they complete a solid waste mitigation plan which is approved by the Santa Barbara County Public Works Department (or another regional agency if authorized to do so). Since this is a requirement on the construction contractor, GSD will enforce this through a contract mechanism or other legally binding requirement.	District will enforce through a contract mechanism or other legally binding requirement. (California Edison.)	X	X		Goleta Sanitary District/ Contractor			

Notes:
Const. = construction.