Santa Clara Valley Water District

# Penitencia Water Treatment Plant (PWTP) Residuals Management Project

# Final Initial Study/Mitigated Negative Declaration

**December 2024**

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Santa Clara Valley Water District

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# Final Initial Study/Mitigated Negative Declaration

**December 2024**


**Prepared for:**
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San Jose, California 95118-3614

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# 1 Introduction

## 1.1 Organization of the Document

This document is organized to assist the reader in understanding the potential impacts that the project may have on the environment and to fulfill the California Environmental Quality Act (CEQA) (Public Resources Code §§ 21000 et seq.). Section 1 describes the purpose of the project under CEQA, sets forth the public participation process, and summarizes applicable state and federal regulatory requirements. Section 2 describes the location and features of the project, and Section 3 describes the environmental setting. Section 4 evaluates the potential impacts of the project through the application of the CEQA Initial Study Checklist questions. Section 5 lists the contributors, and Section 6 supplies the references used in the document preparation.

## 1.2 Purpose of the Mitigated Negative Declaration

The Santa Clara Valley Water District (Valley Water), acting as the Lead Agency, prepared this draft Mitigated Negative Declaration (MND) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Penitencia Water Treatment Plant Residuals Management Project (project).

This MND was prepared consistent with CEQA Guidelines (Title 14, California Code of Regulations §§ 15000 et seq.) and Valley Water procedures for implementation of CEQA (Environmental Quality and Management System – Environmental Planning Q520D01). CEQA requires that public agencies such as Valley Water to identify significant effects of a project, avoid or minimize those impacts or, in cases where avoidance and minimization of impacts are not possible, mitigate impacts.

In addition to its obligations as the Lead Agency under CEQA for its projects, Valley Water, as a steward of Santa Clara Valley watersheds, is committed through its mission to conducting activities in an environmentally sensitive manner. Valley Water strives to preserve the natural qualities, scenic beauty, and recreational uses of Santa Clara Valley's waterways by using methods that reflect an ongoing commitment to conserving the environment.

## 1.3 Decision to Prepare a Mitigated Negative Declaration for this Project

The Initial Study for the project, included in Section 4 of this document, identifies potentially significant effects on Air Quality, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise. Mitigation measures have been

proposed for the project to reduce such effects to less-than-significant levels; therefore, the proposed MND is consistent with CEQA Guidelines section 15070(b), which indicates that a MND is appropriate when the project Initial Study identifies potentially significant effects but:

a. Revisions to the project plan were made that would avoid, or reduce the effects to a point where clearly no significant effects would occur; and
b. There is no substantial evidence that the project, as revised, may have a significant effect on the environment.

## 1.4 Public Review Process

This draft MND was ~~will be~~ circulated to local, responsible, and trustee agencies, interested organizations, and individuals who may wish to review and provide comments on the project description, the proposed mitigation measures, or other aspects of the report~~. The publication will commence the~~ for a 30-day public review period per CEQA Guidelines section 15105(b).

The draft MND and supporting documents ~~are~~ were available for review at:

Santa Clara Valley Water District
Headquarters Building
5750 Almaden Expressway
San Jose, CA 95118

Copies of the report are also posted on Valley Water's website:

https://www.valleywater.org/public-review-documents
Via written request for a copy from Valley Water.

Written comments or questions regarding the draft MND should be submitted to the name and address indicated below. Submittal of written comments via e-mail would greatly facilitate the response process.

Michael F. Coleman, AICP
Environmental Planner
Santa Clara Valley Water District (Valley Water)
5750 Almaden Expressway
San Jose, CA 95118-3614
email: PWTPcomments@valleywater.org.

The proposed MND, along with any comments, will be considered by the Valley Water Board of Directors prior to a decision on the project.

## 1.5 Interagency Collaboration and Regulatory Review

The CEQA review process is intended to provide trustee and responsible agencies, as well as the public, with an opportunity to provide input on a project. Trustee agencies are state agencies that have authority by law for the protection of natural resources held in trust for the public. Responsible agencies are those that have some responsibility or authority for carrying out or approving a project; in many instances, these public agencies must make a discretionary decision to issue a local permit and provide right-of-way, funding, or resources that are critical to the project proceeding. Trustee and responsible agencies are listed in Table 1.5-1

**Table 1.5-1 Summary of Agency Approvals**

| Agency | Permit/Review |
|---|---|
| California Department of Fish and Wildlife | Review of MND For compliance with California Endangered Species Act |
| San Francisco Bay Regional Water Quality Control Board | Clean Water Action Section 402 Stormwater General Permit<br>Review of Clean Water Act Section 402(p) Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit |
| Bay Area Air Quality Management District | Permit for emergency standby generator rated 50 horse break power or greater |
| City of San Jose Fire Department | Review of Hazardous Materials Business Plan |
| State Water Resources Control Board, Division of Drinking Water | Water Supply Permit Amendment for a change in domestic water supply treatment |
| State Water Resources Control Board, Division of Financial Assistance | Possible Drinking Water State Revolving Fund Financing |

# 2 Project Description

## 2.1 Overview

Santa Clara Valley Water District (Valley Water or District) is proposing the Penitencia Water Treatment Plant (PWTP) Residuals Management Project (project). The project includes improvements to the following components of the PWTP Residuals Management System (RMS):

- Washwater handling and treatment;
- Sludge handling and dewatering; and
- Sedimentation basin sludge withdrawal.

The project is proposed to address age, capacity, efficiency, and reliability issues with the existing RMS, ensure the PWTP efficiently and reliably provides potable water to water retailers in Valley Water's service area and meets current regulatory standards. The total PWTP site is 21.58 acres in size. Construction within the main PWTP site will focus on demolition of existing facilities and new improvements within an approximate 3-acre portion (130,000 sq. ft.) of the total PWTP site. A 0.52-acre portion interior to the main PWTP site will be used for construction staging. Valley Water also owns a separate parcel along the upper portion Whitman Way of which 0.33 acre will be used for construction staging.

## 2.2 Project Objectives

The overall objective of the project is to improve components of the existing PWTP RMS to support operations of the PWTP, at the permitted and design capacity of 42 million gallon per day (MGD). The existing PWTP operations are constrained due to inefficiencies of the RMS in meeting current regulatory standards. The improvements aim to address aging infrastructure and associated maintenance issues; improve operational efficiency, capacity, and reliability; and to ensure that the PWTP efficiently and reliably provides potable water to water retailers in the Valley Water's service area while meeting applicable regulatory requirements. The project objectives are intended to fulfill the goal set forth in the District's Board of Directors Ends Policy Number E2.3., which states, "[p]rotect and maintain existing water infrastructure" (Valley Water's Water Supple(WS) Services 2021).

The specific objectives of the project are as follows:

- Ensure the upgraded RMS meets applicable regulatory requirements;
- Provide a washwater handling and treatment system that can process multiple waste streams, segregate flows (e.g, filter-to-waste) to maximize handing capacity

and minimize size of treatment facilities, and improve the overall quality of flows returned to the plant headworks;
- Provide a sludge handling and dewatering system that can accommodate hydraulic load from multiple sludge streams, provide storage up to 4 days per week, improve sludge dewatering, and be operated by one operator during a normal work shift, 3-4 days per week;
- Replace manual telescoping valves with automated submersible pumps in the sedimentation basins;
- Provide automation of the RMS to remove the need for manual operation and allow for minimized staff intervention; and
- Ensure all ancillary equipment that supports the RMS (e.g., chemical, electrical, and instrument and control systems) is properly sized and upgraded.

## 2.3 Project Scope of Work

### 2.3.1 Scope of Work

The proposed project would provide improvements at the PWTP located in the City of San Jose. The proposed improvements would cover approximately 130,000 square feet (3 acres) within the existing plant. A figure showing the location of the plant and current condition of existing facilities is provided in Figure 2.3-1. The project proposes to make improvements to include the following main components:

- Sedimentation Basins:
  - Remove and replace manual sludge removal equipment and pumps with new automated sludge removal equipment and pumps
  - Add electrical, instrumentation and controls
  - Modify process piping to support new equipment and pump operations
- Washwater Handing and Treatment:
  - Modify washwater diversion structure
  - Remove and replace two washwater equalization basins
  - Install two new flocculation/sedimentation basins with plate settlers (i.e., clarifiers)
  - Install a new Filter-to-Waste (FTW) equalization basin
  - Remove and replace a washwater return pump station
  - Remove and replace a washwater sludge transfer pump station
  - Install a new washwater pump station for inter-process pumping
  - Install a new electrical, instrumentation and controls building, equipment, and conduits to supply power to the washwater handling and treatment facilities
  - Install a new chemical building and chemical/polymer systems

- Solids Handling and Dewatering:
  - Remove and replace four sludge holding ponds with two new gravity thickeners
  - Remove and replace a sludge storage/mixing tank with two new sludge storage/mixing tanks
  - Remove and replace a dewatering building (belt press building) with a new dewatering building (centrifuge building), including electrical, instrumentation and controls, and chemical/polymer system(s)
  - Remove and replace a decant and overflow pump station
  - Install a new centrate pump station for inter-process pumping
  - Install a new sludge transfer and centrifuge feed pump station for inter-process pumping
  - Install a new electrical transformer and conduits for electrical, instrumentation and controls
- Yard piping to connect new facilities
- Service road extension, resurfacing, and paving inside the plant process area
- Landscape revegetation and improvements

Figure 2.3-1 shows the location of the proposed demolition areas, work areas and staging areas. Figure 2.3-2 shows the location of the project improvements. Project components are discussed in detail as follows.

**Figure 2.3-1 Project Demolition, Staging, and Work Areas**

*Source: (Esri 2012; Maxar 2021)*

**Figure 2.3-2 Project Improvements**

**Penitencia Water Treatment Plant**
Proposed Project Elements

- Penitencia Water Treatment Plant
- Santa Clara Valley Water District Property
- Proposed Project Structure (New Facility)

N
0 100 200 Feet
Scale: 1:3,000
Created: 3/20/2024

PANORAMA

*Source: (Esri 2012; Maxar 2021)*

### 2.3.2 Background

#### PWTP Residuals Management System

The PWTP, commissioned in 1975, has a peak treatment capacity of 42 million MGD. The plant uses a conventional treatment process including coagulation, flocculation, sedimentation, and filtration with chemical application. The RMS is one of the major treatment components of the PWTP, that receives, and processes recovered washwater and diluted sludge produced from the PWTP's daily operations.

#### Previous PWTP Planned Improvements

Valley Water initiated the Water Treatment Improvement Project (WTIP) in 1990 in response to the 1986 amendments to the Safe Drinking Water Act and the Surface Water Treatment Rule in order to bring its treated water production facilities into compliance with said amendments. In 1998, Valley Water approved an Engineer's Report and a Mitigated Negative Declaration (MND) for the Water Treatment Improvement Project Stage 2 at the PWTP (WTIP Stage 2) and an Addendum to the MND in 2002. Valley Water ultimately reduced the WTIP Stage 2 scope of work by deferring the proposed washwater clarifier facility to be completed in a future project. This proposed project would construct the washwater clarifier facility and other facilities identified in Section 2.3.1.

#### Existing PWTP Residuals Management Process and Infrastructure

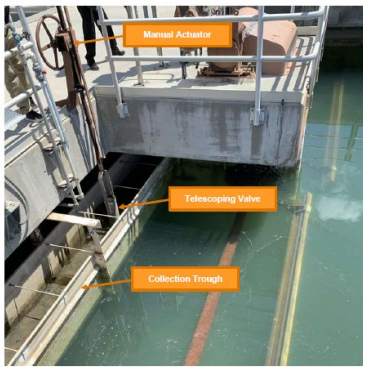
Residuals management includes the processing, handling, and treatment of waste streams, along with, the process, handling, and disposal of solids from sludge produced by the primary water treatment process. At the PWTP, the primary water treatment process generates sludge in the sedimentation basins and filters. As the raw (untreated) water supply flows through the sedimentation basins, heavier solids along with clarification treatment chemicals settle to the bottom as sludge. The water supply then flows through the filters, where additional solids are captured, before beginning secondary treatment in preparation for storage and delivery.

The sludge is removed from the sedimentation basins using manual telescoping valves and underflow pumps. The sludge from the sedimentation basins is pumped to two sludge holding basins, located on the southwest end of the plant in the sludge holding and dewatering area, that also receive sludge pumped from the washwater recovery basins. The thickened sludge from the sludge basins is then transferred to a sludge storage/blending tank where polymer is added to further treat the sludge before it is pumped to the belt press for dewatering. The belt press is a mechanical process that squeezes the treated sludge separating the liquid, called filtrate, and producing dewatered solids. The filtrate is collected along with supernatant from the sludge holding basins and pumped to the washwater recovery basins for further processing. The dewatered solids are collected on a belt conveyor and deposited onto the pavement, on the north side of the belt press building, and an end loader tractor is used to periodically load the dewatered solids onto semi-trailer dump trucks for off-site landfill disposal.

The plant periodically reverses the flow of water through the filters to wash captured solids, creating a waste stream of washwater from the filter backwashes. Additional major waste

streams are produced as part of the daily operations of the PWTP and include filter-to-waste (FTW) discharge generated during the ripening period of the granular filter media, filtrate and supernatant resulting from sludge handling, leakage from filter valves, and plant drains. These waste streams are sent to the two washwater recovery basins, located on the southeast end of the plant in the washwater handling and treatment area. The washwater recovery basins provide gravity settling of heavier solids in the combined waste stream and manage return of recycled water pumped back up to the head of the plant where it merges with raw water and goes back through the primary water treatment process. The settled sludge is periodically collected from the washwater basins and pumped to the sludge holding basins for processing. Existing RMS equipment and infrastructure are shown in the photos in Figure 2.3-3, below. The existing RMS is continually operated to support the daily, 24 hour, operations of the plant. This includes periodic operation of pumps to transfer sludge and major waste streams between processes and return processed water to the head of the plant. However, the transfer of thickened sludge from the sludge holding ponds for mechanical dewatering and the mechanical dewatering process is typically operated 3 to 4 days per week during a normal work shift. If more economical or if required by operational conditions, the mechanical dewatering process could operate more days of the week for the same hours as a standard work shift or outside of the normal work shift hours.

**Figure 2.3-3 Existing PWTP Equipment and Infrastructure**




Sedimentation telescoping Valve and collection trough

Washwater recovery basins

Sludge holding basins

## 2.4 Project Construction

To accommodate the proposed project, major components of the existing RMS would be demolished and the proposed project improvements would be constructed within the general footprint of those existing components (Figure 2.3-1 and Figure 2.3-2). The construction would be phased to keep the PWTP in service during construction. The phasing would allow for a portion of existing facilities to be demolished while the remaining facilities continue the RMS operations, until which time, new facilities constructed can be placed in operation and the remaining existing facilities can be removed from operation and demolished.

### 2.4.1 Preconstruction/Site Preparation/Construction Staging

Construction areas would be delineated with stakes and fenced as appropriate. Construction staging and stockpiling would occur within the staging areas shown in Figure 2.3-1 including 0.52 acre within the PWTP site and 0.33 acre adjacent to the PWTP site on Valley Water owned parcels. The contractor would also stage equipment within one or more disturbed or developed areas within 10 miles of the PWTP, or potentially an undeveloped site, to allow additional space for material delivery and staging and accommodate the limited work area within the operational PWTP. Limited parking would be provided on-site within the PWTP along the access road adjacent to the south side of the sedimentation and filter basin facility.

Construction stockpiling would also occur within existing paved areas of the PWTP such as the paved areas surrounding the existing washwater basins and sludge handling basins as well as undeveloped areas within the PWTP and adjacent Valley Water property that are available at the time of construction. Excess excavation stockpiles would be hauled off site periodically as needed. Foundation and engineered backfill materials would be imported, temporarily stockpiled in designated staging and stockpile areas, or deposited adjacent to the immediate work area.

### 2.4.2 Demolition, Excavation, and Dewatering

#### Demolition

In the sedimentation basins, the existing telescoping valves, underflow pumps, and some process piping would be demolished. The major components of the washwater handing and treatment and the sludge holding and dewatering would be demolished in their entirety. The major components include the existing washwater recovery basins, washwater return and sludge pump station, sludge holding basins, sludge storage/mixing basin, belt press building (including electrical, instrumentation and controls, and chemical system), decant pump station, polymer system, yard and process mechanical piping, and decant and sludge transfer pump station. The facilities that would be demolished area shown in Figure 2.3-1. All demolition debris would be removed from the site. The volume of demolition waste generated is summarized in Table 2.4-1. Demolition waste would be handled in compliance with City of San Jose requirements.

**Table 2.4-1 Demolition Waste Volume**

| Demolition Material Type | Quantity (Cubic Yards) |
|---|---|
| Concrete | 100 |
| Asphalt | 850 |
| Piping | 50 |
| Metals | 50 |
| Wood Waste | Negligible |

#### Excavation

Excavation would occur for each of the proposed structures that would extend subsurface. The maximum depth of excavation would be approximately 35 feet deep. Temporary cross bracing may be required to support shoring in the excavated areas until foundations and walls are formed and poured. A structural bottom slab may be used to seal the bottom of the excavation to prevent groundwater related uplift of the excavation bottoms. The project would generate a total export volume of approximately 16,000 cubic yards of soil during excavation. Suitable excavated soil would be reused on-site, and remaining materials would be recycled or disposed of as appropriate at a landfill.

#### Dewatering

Dewatering would be required throughout the excavation stage so as to create a dry work area in any areas where groundwater is encountered during excavation. Temporary groundwater wells would be installed around the areas of deep excavation. Pumps would be used to extract the groundwater continuously during the earthwork and concrete form construction phase to create a dry work area for the excavations. Dewatered groundwater would be treated in accordance with state and federal regulations before discharged to the storm drain.

### 2.4.3 Structural Foundation and Wall Installation

#### Foundations

Foundations would be installed on spread footings. The recommendations that are developed from the geotechnical investigation results, including the design groundwater levels during excavation for construction, foundation types and construction methods, and shoring systems would be incorporated into the final design.

#### Structural Walls

Structural walls would be cast-in-place reinforced concrete or concrete masonry units. Concrete structural wall construction would include installation of a form and structural reinforcement (e.g., rebar) for the wall, concrete pouring within the form, curing of the concrete, testing, and removal of the form. Following construction of each concrete structure, the open excavation around the structure would be backfilled to meet engineering specifications. The structure walls would be constructed and attached to the subsurface foundation or as an extension of the subsurface structure.

### 2.4.4 Install Structures and Equipment

#### Sedimentation Basin Sludge Withdrawal Facilities

After demolition of the telescoping valves, the project would install twelve submersible pumps in the sedimentation basin. As well as six control panels to automate and control the pumps and associated electrical, instrumentation and controls. The process piping would be modified to support the new equipment and pump operations.

### Washwater Handling and Treatment

The project would construct replacement washwater handling and treatment components as further described below. A summary of the major components and their approximate dimensions is provided in Table 2.4-2.

**Table 2.4-2 Summary of the Washwater Handling Treatment Components**

| Structure | Base (Length x Width or Diameter) (ft) | Max Depth of Excavation Below Ground (ft) | Height Above Ground (ft) |
|---|---|---|---|
| Washwater equalization basins (2, each) | 73 x 40 | 25 to 30 | 5 to 10 |
| Clarifier basins (2, each) | 50 x 28 | 25 to 30 | 5 to 10 |
| Filter-to-waste equalization basin | 50 x 28 | 25 to 30 | 5 to 10 |
| Chemical building | 50 x 26 | 5 to 10 | 20 to 25 |
| Electrical building | 30 x 10 | 5 to 10 | 15 to 20 |
| Washwater process pump station | 25 x 15 | 25 to 30 | 5 to 10 |
| Washwater return pump station | 22 x 70 | 25 to 30 | 5 to 10 |
| Washwater sludge pump station | 10 diameter and 20 x 20 | 25 to 30 | 5 to 10 |

### Washwater Diversion Structure

The existing washwater diversion structure would be modified to support and connect to new facilities. Modifications include removal and replacement of hydraulic weir, pipes and appurtenances, and access and safety equipment.

### Washwater Equalization Basins

Two adjoining washwater equalization basins, 330,000 gal each, would be constructed of reinforced concrete. Each basin would be approximately 73 feet by 40 feet, extend 5 to 10 feet above ground, and 25 to 30 feet below ground. The basins would have a common top access deck (including applicable safety railings) and stairways.

### Clarifier Basins

Two adjoining clarifier basins would be constructed of reinforced concrete. Each basin would be further segmented approximately into a flocculation basin 7 feet by 26 feet, a sedimentation basin (with plate settlers) 28 feet by 26 feet, extend 5 to 10 feet above ground, and 25 to 30 feet below ground. The clarifier basins would have a top access deck (including applicable safety railings) and stairway.

**Filter-to-Waste Equalization Basin**
A FTW equalization basin would adjoin the clarifier basins and be constructed of reinforced concrete. The basin would be approximately 50 feet by 28 feet, extend 5 to 10 feet above ground, and 25 to 30 feet below ground. The basins would have a top access deck (including applicable safety railings) and stairways.

**Chemical Building**
A chemical building would be constructed adjacent to the north side of the washwater equalization basins. The chemical building would be constructed of concrete masonary units, approximately 50 feet by 26 feet, extending 20 to 25 feet above ground, and 5 to 10 feet below finish ground. The roof would have a raised metal finish. The new chemical building would contain polymer and hypochlorite systems and ancillary equipment including chemical and metering pumps to support the systems.

**Electrical Building**
An electrical building would be constructed east of the FTW equalization basin. The electrical building would be constructed of concrete masonary units, approximately 30 feet by 10 feet, extending 15 to 20 feet above ground, and 5 to10 feet below ground. The roof would have a raised metal finish. The new electrical building would contain electric systems, instrumentation and controls for the washwater and handling and treatment components.

**Washwater Process Pump Station**
A washwater process pump station, including wet well, would be constructed adjoining the north side of the washwater equalization basins. The wet well would be constructed of reinforced concrete with access hatches, approximately 25 feet by 15 feet, extending 5 to 10 feet above ground, and 25 to 30 feet below ground. The pump station would contain 3 submersible pumps (2 duty, 1 stand-by) each rated at 1,400 gallons per minute (gpm).

**Washwater Return Pump Station**
A washwater return pump station, including wet well, would be constructed adjoining the east side of the clarifier and FTW basins. The wet well would be constructed of reinforced concrete with access hatches, approximately 20 feet by 70 feet, extending 5 to 10 feet above ground, and 25 to 30 feet below ground. The wet well would be partitioned in two to provide for the collection, metering, and return of processed (clarified) water and FTW equalized flow seperately. The processed water return side would include four submersiblepumps (3 duty, 1 stand-by) each rated at 1,400 gpm. The equalized FTW return side would include two submersible pumps (1 duty, 1 stand-by) each rated at 1,400 gpm. The pump motors would be installed on the top deck of the station in an unenclosed area. The station would return both flows to the head of the plant.

**Washwater Sludge Pump Station**
A washwater sludge pump station, including wet well and valve vault, would be located near the washwater equalization basins. The wet well would be constructed of reinforced concrete with access hatches provided in the top, approximately 10- feet in diameter, extending 0 to 5 feet above ground, and 25 to 30 feet below ground. The pump station would contain 2

submersible pumps (1 duty, 1 stand-by) rated at 100 gpm. A separate valve vault would be constructed of reinforced concrete with top access hatches, approximatly 20 feet by 20 feet, extend 0 to 5 feet above ground, and 35 to 30 feet below ground.

### Sludge Holding and Dewatering

The project would construct replacement sludge holding and dewatering components as further described below. A summary of the major components and their approximate dimensions is provided in Table 2.4-3.

**Table 2.4-3 Summary of the Sludge Handling and Dewatering Major Facilities**

| Structure | Base size (length x width or diameter) (ft) | Max depth of excavation (ft) | Height above ground (ft) |
|---|---|---|---|
| Gravity thickeners (2) | 54 diameter | 30 to 35 | 5 to 10 |
| Storage/Mixing tanks (2) | 45 diameter | 25 to 30 | 5 to 10 |
| Centrifuge building | 80 x 30 | 5 to 10 | 40 to 45 |
| Load-out Platform | 40 x 45 | 5 to 10 | 20 to 25 |
| Transfer pump station | 60 x 35 | 5 to 10 | 15 to 20 |
| Centrate pump station | 10 diameter | 30 to 35 | 0 to 5 |
| Decant pump station | 15 diameter | 30 to 35 | 5 to 10 |
| Valve vaults (3) | 25 x 15 | 5 to 10 | 0 to 5 |

*Source: (Valley Water and Stantec Consulting Services 2024)*

#### Gravity Thickeners

Two cylindrical gravity thickeners would be constructed of reinforced concrete. Each gravity thickener would be approximatley 54 feet in diameter, extend 5 to 10 feet above ground, and 25 to 30 feet below ground. The gravity thickeners would have a shared stairway and connecting catwalk (including applicable safety railings) installed between them to provide access.

#### Sludge Storage/Mixing Tanks

Two sludge storage/mixing tanks would be constructed of reinforced concrete. Each sludge storage/mixing tank would be approximately 45 feet in diameter, extend 5 to 10 feet above ground, and 25 to 30 feet below finish ground. The sludge storage/mixing tanks would have a shared stairway and connecting catwalk (including appoicable safety railings) installed between them to provide access to the tanks and mixers.

#### Centrifuge Building and Load-out Platform

The centrifuge building would house the centrifuges, chemical storage and pumping systems, electrical system, instrumentation and controls, operator control room, restroom, a bridge crane, and portions of the solids conveyors. The building would be approximately 2,500 square feet, extend 40 to 45 feet above ground, and be constructed of reinforced concrete with a steel-framed

structure with concrete plaster facing extending as the last level of the building. The concrete structure would have a form liner or sandblasted finish, and the metal extension would have a stucco exterior. The roof would have a raised metal finish.

A load-out platform would be constructed adjoining the eastside of the centrifuge building to support the remaining portion of the solids conveyors. The loadout platform would be a steel-framed structure with a concrete deck, approximately 40 feet by 45 feet and 20 to 25 feet tall. The conveyors would be set on top of the platform. The platform would be fitted with applicable safety railings and stairways.

**Transfer Pump Station**
Adjoining the westside of the centrifuge building a steel-framed canopy approximately 15 to 20 feet tall would be placed to provide cover over the transfer pump station. The pump station would consist of six pumps installed on a concrete slab approximately 60 feet by 35 feet and 0 to 5 feet below grade, under an unenclosed canopy. Three pumps (2 duty, 1 stand-by) would be rated 175 gpm and transfer sludge between the gravity thickeners and sludge storage/mixing tanks. The other three pumps (2 duty, 1 stand-by) would be rated 400 gpm and transfer sludge between the storage/mixing tanks and centrifuges.

**Centrate Pump Station**
A centrate pump station, including wet well and valve vault, would be located north of the centrifuge building. The wet well would be constructed of reinforced concrete with access hatches provided in the top, approximately 10 feet in diameter, extending 0 to 5 feet above ground, and 30 to 35 feet below ground. The pump station would contain 2 submersible pumps (1 duty, 1 stand-by) rated at 800 gpm.

**Decant Pump Station**
A decant pump station, including wet well and valve vault, would be constructed west of the gravity thickeners. The wet well would be constructed of reinforced concrete, approximately 15 feet in diameter, extending 5 to 10 feet above ground, and 30 to 35 feet below ground. The pump station would contain 2 submersible pumps (1 duty, 1 stand-by) rated at 1,200 gpm.

**Valve Vaults**
Three separate valve vaults to support the pump stations and gravity thickeners would be constructed of reinforced concrete with access hatches provided on top. The vaults vary in size, and are approximatly 25 feet by 15 feet, extend 0 to 5 feet above ground, and 30 to 35 feet below ground.

### 2.4.5 Yard Piping and Utilities

New yard piping would consist of process and utility pipelines to inter-connect the new RMS facilities and to connect these new facilities to existing PWTP water treatment facilities for transfer of solids, return of recycled water to the PWTP treatment process, and connection to utilities including water, stormwater and sewer. The new pipelines would generally be located within the RMS area and would connect to existing PWTP process and utility pipelines. The new pipelines would generally be between 4 and 20 inches in diameter. New electrical lines and

instrumentation and control cabling would also be installed to provide power and network to the new facilities, equipment (e.g., pumps, meters, motors etc.), and instrumentation and controls within the RMS process.

New process and utility pipelines, as well as, underground electrical duct banks for the new facilities would be installed below grade via trenching. Trenches would extend up to 35 feet deep from existing grade, for deep buried pipelines. Temporary trench shields and shoring would be used, as applicable, in trenching. After the trench has been constructed, the pipeline or electrical duct bank would be installed within the trench. Duct banks would be constructed with poured concrete, and electrical and instrumentation cabling would be installed within the buried duct bank. The area underneath and surrounding the pipeline or duct bank would be backfilled with engineered fill material to meet engineering specifications. The remainder of the open trench would be backfilled with excavated soil materials to final grade.

### 2.4.6 Site Grading and Drainage

Grading would occur in the areas of and around new facilities, temporary staging, the extended access road, milling and paving of existing access road, and within areas that are proposed for paving to create a stable surface for construction and final tie into the existing hill slopes and grades. A retaining wall would be constructed along the edge of the new paving area, west of the sludge storage tank. The project would require import of approximately 4,000 cubic yards of fill materials. The existing paved access road around the existing sludge holding ponds and the existing washwater ponds, would be partially or totally removed and replaced to meet current construction standards.

The drainage gradient on the site would be maintained. The project is designed to comply with provision C.3 of the Municipal Regional Permit (MRP), which requires measures to both treat and prevent increases in stormwater runoff. The existing stormwater system would be modified within the project site to achieve compliance with the MRP

### 2.4.7 Site Paving

The existing paved access roads around the washwater handling and treatment, the sludge handling area, and the centrifuge building area would be replaced or repaired after construction of proposed facilities. The existing access road around the sludge handling facilities would be expanded by approximately 30,000 square feet to provide access for the solids hauling trucks (Figure 2.3-2). Paving would also occur in the areas around new facilities to create a stable surface similar to the existing conditions for access, operation, and maintenance of facilities and final tie into existing pavement.

### 2.4.8 Lighting, Landscaping, and Site Cleanup

Lights would be installed on and around the facilities to allow safe use and observation of facilities during non-daylight hours. The lights would be cutoff type that illuminate the area below them but do not illuminate the sides or areas above the lighting. The top access deck of the washwater basins, clarifier basins, FTW basins, gravity thickeners, and sludge storage

mixing tanks, and the centrifuge building access platform would be fitted with localized light fixtures to allow safe use and observation during non-daylight hours.

Landscaping would be planted in areas north and south of the new facilities to provide visual screening. Temporary irrigation for trees and shrubs would be installed for plant establishment. All temporary fencing, construction signage, and any excess materials or debris would be removed from the site at construction completion. Temporary construction trailers would be removed at the completion of construction.

### 2.4.9 Construction Access, Vehicle Trips, and Workers

No changes to site access to the PWTP are needed to implement the project. Access is provided via the existing Valley Water security gates and driveway at the intersection of Whitman Way and Vista Del Mar, in San Jose, CA. Non-gated access to the staging areas along Whitman Way are provided.

Construction would generate approximately 3,000 heavy-duty haul truck trips for delivery of equipment, excavation, and import of fill material. The project would generate approximately 3 truck trips per day on average during construction and 25 truck trips at peak of excavation and removal of material. An average of approximately 30 workers would be on site each day, with a maximum of 50 workers on a given day.

### 2.4.10 Construction Schedule and Work Hours

The project construction is proposed to begin between 2025 to 2030 and would be completed in approximately 5 years with the first 6 to 9 months consisting of mobilization and staging. The first 3 to 4 years would involve near continuous construction activities. Facility outages would occur in the low-demand months (November to March) when possible. Construction activities would be conducted from 7 a.m. to 7 p.m. Monday through Friday and from 8:00 a.m. to 5:00 p.m. on Saturday. Construction could also occur during early morning hours or outside normal working hours for specified construction activities such as concrete delivery and pours, during outages, or to respond to unplanned disruptions in plant operations. The extended workdays would be approximately 16 hours long, and the total number of extended workdays would occur for a total of 3 weeks, intermittently over the course of the construction period.

### 2.4.11 Construction Equipment

Equipment that would be used during construction includes:

- Pickup trucks
- Generators
- Forklift
- Welders
- 10-yard dump trucks
- Excavators
- Haul trucks

- Water trucks
- Plate compactors
- Backhoe/tractor/loaders
- Pyle driver or drill rig
- Dozer
- Compactor
- Paving equipment
- Compactor/roller
- Asphalt haul truck
- Cement and mortar mixers
- Cranes

## 2.5 Operations and Maintenance

### 2.5.1 Operations

The future operations of the sedimentation basin sludge withdrawal pumps and the primary controls of the washwater and treatment facilities and sludge handling and dewatering facilities would be automated, monitored and controlled by the PWTP operators. Equipment would be operated and maintained in a manner similar to existing conditions, no changes in staffing levels are anticipated.

#### Chemical Use

The future operations would include an increase in chemicals currently used for sludge flocculation and dewatering (polymer) and treatment and disinfection (i.e., sodium hypochlorite [NaClO NaOCl]).

An 800-gallon bulk polymer tank would provide 30 calendar days of storage at the maximum usage rate. The maximum volume of sodium hypochlorite would be approximately 180 gallons per day.

#### Solids Hauling

The upgrades to the RMS would improve sludge dewatering, resulting in a reduction in volume of solids produced, fewer truck trips would be generated for removal of solids, for off-site landfill disposal, during future operation of the project than under existing conditions.

#### Power Required for Operations

The project would require a power increase of approximately 300,000 kwh/year for operation. In addition, a new separate standby generator, using up to 500 horsepower motors, would provide backup power for critical equipment in the event of power interruptions, for the sludge holding and dewatering facilities. An existing on-site standby generator would provide backup power for the sedimentation basin and washwater handling and treatment facilities.

The current PWTP power infrastructure is anticipated to have sufficient capacity to support the project improvements. The Pacific Gas and Electric Company's distribution system that currently serves PWTP is anticipated to have sufficient capacity to supply the additional loads under all future scenarios. The standby generator would be tested monthly for 2 hours.

### Maintenance

Under existing conditions, the PWTP is inspected routinely, and maintenance activities are conducted as needed to ensure proper function of the facility. Under the proposed project, new facilities and equipment would be maintained similar to existing conditions. The level of maintenance would be similar to or slightly reduced in comparison with the maintenance of the existing facilities and equipment, since the proposed improvements include replacement of aged infrastructure and equipment. Maintenance for new and existing landscaping would include mowing, pruning of trees, and potential replacement of plants as needed to maintain the function of the landscaping. Maintenance activities would be conducted by existing staff, no changes in staffing levels are anticipated.

## 2.6 Valley Water BMPs

Best management practices (BMPs) are practices that prevent, avoid, or minimize potentially adverse effects associated with construction and other activities. Project BMPs reflect the BMPs in the ~~2014~~ 2025 *Best Management Practices Handbook: Santa Clara Valley Water District Comprehensive List* and are included in Table 2.6-1. Additional environmental measures developed to mitigate specific impacts associated with project implementation and not avoidable through standard construction BMPs are identified in Chapter 3 of this MND. All BMPs and mitigation measures are provided in the draft Mitigation Monitoring and Reporting Program (MMRP) table, included as Appendix A.

All BMPs would be incorporated into the project construction documents (plans and specifications) such that contractors employed on the project would be contractually required to adhere to them.

**Table 2.6-1 Best Management Practices**

| BMP | Description |
|---|---|
| AQ-1<br>Use Dust Control Measures | The following Bay Area Air Quality Management District (BAAQMD) Dust Control Measures will be implemented:<br>• All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.<br>• All haul trucks transporting soil, sand, or other loose material off-site shall be<br>• covered.<br>• All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. |

| BMP | Description |
|---|---|
| | • Water used to wash the various exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, etc.) will not be allowed to enter waterways.<br>• All vehicle speeds on unpaved roads shall be limited to 15 mph.<br>• All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.<br>• Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure CCR Title 13, Section 2485), and this requirement shall be clearly communicated to construction workers (such as verbiage in contracts and clear signage at all access points).<br>• All construction equipment shall be maintained and properly tuned in accordance with manufacturers specifications, and all equipment shall be checked by a certified visible emissions evaluator.<br>• Correct tire inflation shall be maintained in accordance with manufacturers specifications on wheeled equipment and vehicles to prevent excessive rolling resistance.<br>• Post a publicly visible sign with a telephone number and contact person at the lead agency to address dust complaints; any complaints shall be responded to and take corrective action within 48 hours. In addition, a BAAQMD telephone number with any applicable regulations will be included. |
| ~~AQ-2 Avoid Stockpiling Odorous Materials~~ | ~~Materials with decaying organic material, or other potentially odorous materials, will be handled in a manner that avoids impacting residential areas and other sensitive receptors, including:~~<br>~~1. Avoid stockpiling potentially odorous materials within 1,000 feet of residential areas or other odor sensitive land uses; and~~<br>~~2. Odorous stockpiles will be disposed of at an appropriate landfill.~~ |
| BI-5 Avoid Impacts to Nesting Migratory Birds | Nesting birds are protected by state and federal laws. The District will protect nesting birds and their nests from abandonment, loss, damage, or destruction. Nesting bird surveys will be performed by a qualified biologist prior to any activity that could result in the abandonment, loss, damage, or destruction of birds, bird nests, or nesting migratory birds. Inactive bird nests may be removed with the exception of raptor nests. Birds, nests with eggs, or nests with hatchlings will be left undisturbed |
| BI-6 Avoid Impacts to Nesting Migratory Birds from Pending Construction | Nesting exclusion devices may be installed to prevent potential establishment or occurrence of nests in areas where construction activities would occur. All nesting exclusion devices will be maintained throughout the nesting season or until completion of work in an area makes the devices unnecessary. All exclusion devices will be removed and disposed of when work in the area is complete. |
| ~~BI-8 Choose Local Ecotypes of Native Plants and Appropriate~~ | ~~Whenever native species are prescribed for installation, the following steps will be taken by a qualified biologist or vegetation specialist:~~<br>~~• Evaluate whether the plant species currently grows wild in Santa Clara County.~~ |

| BMP | Description |
|---|---|
| ~~Erosion- Control Seed Mixes~~ | ~~• If so, the qualified biologist or vegetation specialist will determine if any need to be local natives, i.e. grown from propagules collected in the same or adjacent watershed, and as close to the Project site as feasible.~~<br>~~• Also, consult a qualified biologist or vegetation specialist to determine which seeding option is ecologically appropriate and effective, specifically the following:~~<br>~~• For areas that are disturbed, an erosion control seed mix may be used consistent with the Valley Water Guidelines and Standards for Land Use Near Streams, Design Guide 5, Temporary Erosion Control Options.~~<br>~~• In areas with remnant native plants, the qualified biologist or vegetation specialist may choose an abiotic application instead, such as an erosion control blanket or seedless hydro-mulch and tackifier to facilitate passive revegetation of local native species~~<br>~~• Temporary earthen access roads may be seeded when site and horticultural conditions are suitable~~<br>~~• If a gravel or wood mulch has been used to prevent soil compaction, this material may be left in place [if ecologically appropriate] instead of seeding.~~<br>~~• Seed selection shall be ecologically appropriate as determined by a qualified biologist, per *Guidelines and Standards for Land Use Near Streams, Design Guide 2: Use of Local Native Species*.~~ |
| ~~BI-10 Avoid Animal Entry and Entrapment~~ | ~~All pipes, hoses, or similar structures less than 12 inches diameter will be closed or covered to prevent animal entry. All construction pipes, culverts, or similar structures greater than 2 inches diameter stored at a construction site overnight will be inspected thoroughly for wildlife by a qualified biologist or properly trained construction personnel before the pipe is buried, capped, used, or moved. If inspection indicates presence of sensitive or State or federally listed species inside stored materials or equipment, work on those materials will cease until a qualified biologist determines the appropriate course of action.~~<br>~~To prevent entrapment of animals, all excavations, steep-walled holes, or trenches more than 6 inches deep will be secured against animal entry at the close of each day. Any of the following measures may be employed, depending on the size of the hole and method feasibility:~~<br>~~• Hole will be securely covered (no gaps) with plywood or similar materials at the close of each working day, or any time the opening will be left unattended for more than one hour.~~<br>~~• In the absence of covers, the excavation will be provided with escape ramps constructed of earth or untreated wood, sloped no steeper than 2:1, and located no farther than 15 feet apart.~~<br>~~• In situations where escape ramps are infeasible, the hole or trench will be surrounded by filter fabric fencing or a similar barrier with the bottom edge buried to prevent entry.~~ |
| ~~BI-11 Minimize Predator-Attraction~~ | ~~Remove trash daily from the worksite to avoid attracting potential predators to the site.~~ |
| CU-1 Accidental Discovery of | If historical or unique archaeological artifacts or tribal cultural resources are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Work at the location of the find will halt immediately within 100 feet of the find. A “no work” zone shall be established utilizing appropriate flagging to delineate |

| BMP | Description |
|---|---|
| Archaeological Artifacts, Tribal Cultural Resources, or Burial Remains | the boundary of this zone. A Consulting Archaeologist will visit the discovery site as soon as practicable for identification and evaluation pursuant to PRC section 21083.2 and CCR section 15126.4. If the archaeologist determines that the artifact is not significant, construction may resume. If the archaeologist determines that the artifact is significant, the archaeologist will determine if the artifact can be avoided and, if so, will detail avoidance procedures. If the artifact cannot be avoided, the archaeologist will develop within 48 hours an Action Plan, which will include provisions to minimize impacts and, if required, a Data Recovery Plan for recovery of artifacts in accordance with PRC section 21083.2 and Section 15126.4 of the CEQA Guidelines. If a tribal cultural resource cannot be avoided, the Action Plan will include notification of the appropriate Native American tribe and consultation with the tribe regarding acceptable recovery options.<br>If burial finds are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Upon discovering any burial site as evidenced by human skeletal remains, the County Coroner will be immediately notified, and the field crew supervisor shall take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent. No further excavation or disturbance within 100 feet of the site or any nearby area reasonably suspected to overlie adjacent remains may be made except as authorized by the County Coroner, California Native American Heritage Commission, and/or the County Coordinator of Indian Affairs. |
| HM-7<br>Restrict Vehicle and Equipment Cleaning to Appropriate Locations | Vehicles and equipment may be washed only at approved areas. No washing of vehicles or equipment will occur at job sites. |
| HM-8<br>Ensure Proper Vehicle and Equipment Fueling and Maintenance | • No fueling or servicing will be done in a waterway or immediate flood plain unless equipment stationed in these locations is not readily relocated (i.e., pumps, generators).<br>• For stationary equipment that must be fueled or serviced on site, containment will be provided in such a manner that any accidental spill will not be able to come in direct contact with soil, surface water, or the storm drainage system.<br>• All fueling or servicing done at the site will provide containment to the degree that any spill will be unable to enter any waterway or damage riparian vegetation.<br>• All vehicles and equipment will be kept clean. Excessive build-up of oil and grease will be prevented.<br>• All equipment used in the bay or flood basin will be inspected for leaks each day prior to initiation of work. Maintenance, repairs, or other necessary actions will be taken to prevent or repair leaks, prior to use.<br>• If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location will be done in a waterway or flood plain. |
| HM-9<br>Ensure Proper Hazardous Materials Management | • Measures will be implemented to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.<br>• Prior to entering the work site, all field personnel will know how to respond when toxic materials are discovered. |

| BMP | Description |
|---|---|
| | • Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage.<br>• Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials will not contact soil and not be allowed to enter surface waters or the storm drainage system.<br>• All toxic materials, including waste disposal containers, will be covered when they are not in use and located as far away as possible from a direct connection to the storm drainage system or surface water.<br>• Quantities of toxic materials, such as equipment fuels and lubricants, will be stored with secondary containment that is capable of containing 110 percent of the primary container(s).<br>• The discharge of any hazardous or non-hazardous waste as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations will be conducted in accordance with applicable State and federal regulations.<br>• In the event of any hazardous material emergencies or spills, personnel will call the Chemical Emergencies/Spills Hotline at 1-800-510-5151. |
| HM-10<br>Utilize Spill Prevention Measures | To prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water, the following measures will be implemented:<br>• Field personnel will be appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills.<br>• Equipment and materials for cleanup of spills will be available on site, and spills and leaks will be cleaned up immediately and disposed of according to applicable regulatory requirements.<br>• Field personnel will ensure that hazardous materials are properly handled and natural resources are protected by all reasonable means.<br>• Spill prevention kits will always be in close proximity when using hazardous materials (e.g., at crew trucks and other logical locations), and all field personnel will be advised of these locations.<br>• The work site will be routinely inspected to verify that spill prevention and response measures are properly implemented and maintained. |
| HM-12<br>Incorporate Fire Prevention Measures | All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors.<br>• During the high fire danger period (April 1–December 1), work crews will have appropriate fire suppression equipment available at the work site.<br>• An extinguisher shall be available at the work site at all times when welding or other repair activities that can generate sparks (such as metal grinding) is occurring.<br>• Smoking shall be prohibited except in designated staging areas and at least 20 feet from any combustible chemicals or vegetation. |
| ~~HM-13<br>Avoid Impacts from Naturally~~ | ~~The District will comply with and implement BAAQMD dust control measures and notification requirements when working in serpentine soils.~~ |

| BMP | Description |
|---|---|
| ~~Occurring Asbestos~~ | |
| WQ-4<br>Limit Impacts from Staging and Stockpiling Materials | • To protect on-site vegetation and water quality, staging areas should occur on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. Similarly, all equipment and materials (e.g., road rock and spoils) will be contained within the existing access roads or other pre-determined staging areas.<br>• Building materials and other project-related materials, including chemicals and sediment, will not be stockpiled or stored where they could spill into water bodies.<br>• No runoff from the staging areas shall be allowed to enter water ways without being subjected to adequate filtration (e.g., vegetated buffer, swale, hay wattles or bales, silt screens).<br>• The discharge of decant water to water ways from any on site temporary sediment stockpile or storage areas is prohibited.<br>• During the wet season, no stockpiled soils will remain exposed unless surrounded by properly installed and maintained silt fencing or other means of erosion control. During the dry season, exposed, dry stockpiles will be watered, enclosed, covered, or sprayed with non-toxic soil stabilizers. |
| WQ-5<br>Stabilize Construction Entrances and Exits | Measures will be implemented to minimize the tracking of soil onto streets near work site:<br>1. Methods used to prevent mud from being tracked out of work sites onto roadways will include installing a layer of geotextile mat followed by a 4-inch-thick layer of 1-to-3-inch diameter gravel on unsurfaced access roads.<br>2. Access will be provided as close to the work area as possible, using existing ramps where available and planning work site access so as to minimize disturbance to the water body bed and banks as well as the surrounding land uses. |
| WQ-9<br>Use Seeding for Erosion Control, Weed Suppression, and Site Improvement | Disturbed areas shall be seeded with native seed as soon as is appropriate after activities are complete. An erosion control seed mix will be applied to exposed soils down to the ordinary high water mark in streams.<br>1. The seed mix should consist of California native grasses, (for example Hordeum brachyantherum; Elymus glaucus; and annual Vulpia microstachyes) or annual, sterile hybrid seed mix (e.g., Regreen™, a wheat x wheatgrass hybrid).<br>2. Temporary earthen access roads may be seeded when site and horticultural conditions are suitable, or have other appropriate erosion control measures in place. |
| WQ-11<br>Maintain Clean Conditions at Work Sites | • The work site, areas adjacent to the work site, and access roads will be maintained in an orderly condition, free and clear from debris and discarded materials on a daily basis. Personnel will not sweep, grade, or flush surplus materials, rubbish, debris, or dust into storm drains or waterways.<br>• For activities that last more than one day, materials or equipment left on the site overnight will be stored as inconspicuously as possible, and will be neatly arranged. Any materials and equipment left on the site overnight will be stored to avoid erosion, leaks, or other potential impacts to water quality |

| BMP | Description |
|---|---|
| | • Upon completion of work, all building materials, debris, unused materials, concrete forms, and other construction-related materials will be removed from the work site. |
| WQ-13 Protect Groundwater from Contaminates Via Wells or Exploratory Borings | Any substances or materials that may degrade groundwater quality will not be allowed to enter any well or boring. Lubricants used on drill bits, drill pipe, or tremie pipe will not be comprised of oily or greasy substances or other materials that may degrade groundwater quality.<br>• Well openings or entrances will be sealed or secured in such a way as to prevent the introduction of contaminants. |
| ~~WQ-15 Prevent Water Pollution~~ | ~~Oily, greasy, or sediment laden substances or other material that originate from the project operations and may degrade the quality of surface water or adversely affect aquatic life, fish, or wildlife will not be allowed to enter, or be placed where they may later enter, any waterway.~~<br>~~The project will not increase the turbidity of any watercourse flowing past the construction site by taking all necessary precautions to limit the increase in turbidity as follows:~~<br>~~1. where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases will not exceed 5 percent;~~<br>~~2. where natural turbidity is greater than 50 NTU, increases will not exceed 10 percent;~~<br>~~3. where the receiving water body is a dry creek bed or storm drain, waters in excess of 50 NTU will not be discharged from the project.~~<br>~~Water turbidity changes will be monitored. The discharge water measurements will be made at the point where the discharge water exits the water control system for tidal sites and 100 feet downstream of the discharge point for non-tidal sites. Natural watercourse turbidity measurements will be made in the receiving water 100 feet upstream of the discharge site. Natural watercourse turbidity measurements will be made prior to initiation of project discharges, preferably at least 2 days prior to commencement of operations.~~ |
| WQ-16 Prevent Storm Water Pollution | To prevent stormwater pollution, the following measures will be implemented:<br>1. Soils exposed due to project activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. Areas below the ordinary high-water mark of the flood basin or below the mean higher high water line of the bay are exempt from this BMP.<br>2. The preference for erosion control fabrics will be to consist of natural fibers; however, steeper slopes and areas that are highly erodible may require more structured erosion control methods. No non-porous fabric will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff, but only if there are no indications that special status species would be impacted by the application.<br>3. Erosion control measures will be installed according to manufacturer specifications.<br>4. To prevent stormwater pollution, measures to be implemented as appropriate will include, but not be limited to, the following:<br>– Silt fences |

| BMP | Description |
|---|---|
| | – Straw bale barriers<br>– Brush or rock filters<br>– Storm drain Inlet protection<br>– Sediment traps or sediment basins<br>– Erosion control blankets and/or mats<br>– Soil stabilization (e.g., tackified straw with seed, jute, or geotextile blankets)<br>– Straw mulch<br>5. All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g. silt fences).<br>6. Surface barrier applications installed as a method of animal conflict management, such as chain link fencing, woven geotextiles, and other similar materials, will be installed no longer than 300 feet, with at least an equal amount of open area prior to another linear installation. |
| ~~WQ-17 Manage Sanitary and Septic Waste~~ | ~~Temporary sanitary facilities will be located in compliance with California Division of Occupational Safety and Health (Cal/OSHA) regulation 8 California Code of Regulations section 1526. All temporary sanitary facilities will be located where overflow or spillage will not enter a watercourse directly (overbank) or indirectly (through a storm drain).~~ |

## 2.7 Permits and Approvals

Under section 53091 of the California Government Code, local agency building and zoning ordinances do not apply to projects involving the location or construction of facilities for the production, generation, storage, treatment, or transmission of water by a local agency. However, Valley Water's practice is to work with local jurisdictions and neighboring communities during project planning and to consider local environmental protection policies for guidance. The project would comply with the State of California Construction Stormwater General Permit (Order 2022-0057-DWQ) by preparing a SWPPP and submitting a Notice of Intent (NOI) to the State Water Resources Control Board.

The Municipal Regional Stormwater Permit (MRP), adopted by the San Francisco Bay Regional Water Quality Control Board in November 2015 includes requirements for incorporating post-construction stormwater control measures into new development and redevelopment projects which are included in Provision C.3 of the MRP. The project would comply with the MRP C.3 provision by preparing and submitting a Stormwater Management Plan with the permit application.

Other permits and approvals are noted in Table 1.5-1.

# 3 Environmental Setting

## 3.1 Environmental Setting

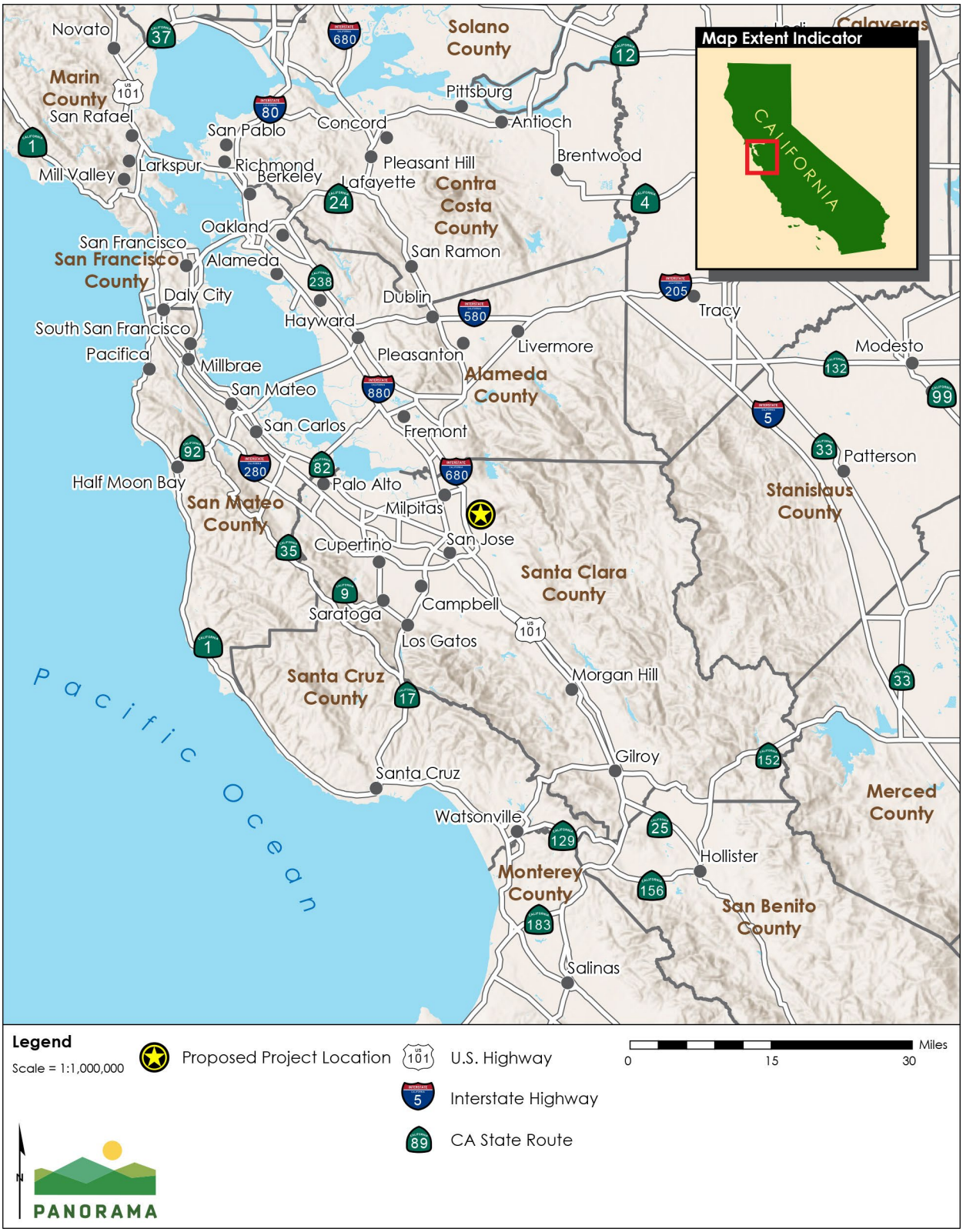
The project site is located at the PWTP at 3959 Whitman Way in the City of San Jose (as shown in Figure 3.2-1). The project facilities would be located entirely within the PWTP. Potential staging areas for the project would be located within the PWTP site and adjacent areas, as shown above in Figure 2.3-1. Additionally staging could occur offsite within a 10-mile radius of the PWTP in previously disturbed areas or undisturbed areas. Valley Water or the construction contractor would obtain any required permits or authorizations for temporary staging activities prior to use of any off-site staging area.

## 3.2 Physical Environment

The PWTP is located in the northeastern portion of the City of San Jose, in the County of Santa Clara as shown in Figure 3.2-1. The PWTP is located in the western foothills of the Diablo Mountain range, on a west-facing hillside. The PWTP is located within a residential area and is bounded by Vista del Mar to the west and Suncrest Avenue to the north. Private residences along El Granada Drive abut the PWTP to the south. Undeveloped land owned by San Jose Water Company is located east of the PWTP.

The majority of the PWTP site is developed with buildings, parking lots, roads, water treatment and storage facilities, and other structures. The PWTP contains ornamental trees and shrub vegetation as well as a fence that rings the facilities. Photovoltaic (PV) solar facilities are located within the PWTP site at the western edge of the property. The PV solar facilities are operated by a third party, and the power is produced to offset Valley Water energy demand.

**Figure 3.2-1 Project Location**




*Source: (U.S. Geological Survey 2020; Tele Atlas North America, Inc. 2018)*

# 4 Environmental Evaluation

## 4.1 Initial Study Checklist

In accordance with CEQA, the following Initial Study Checklist is an analysis of the project's potential environmental effects to determine whether an Environmental Impact Report is needed. Answers to the checklist questions provide factual evidence and Valley Water rationale for determinations of the potential significance of impacts resulting from the project.

The Initial Study checklist shows that the project may have potentially significant effects on Air Quality, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise. Mitigation measures have been proposed for the project to reduce such effects to less-than-significant levels; therefore, the proposed MND is consistent with CEQA Guidelines section 15070. Descriptions of the BMPs and/or mitigation measures to be incorporated in the project are included.

### 4.1.1 Background

| | | |
|---|---|---|
| 1. | Project Title | Penitencia Water Treatment Plant Residuals Management Project |
| 2. | Lead Agency Name and Address | Santa Clara Valley Water District (Valley Water)<br>5750 Almaden Expressway<br>San Jose, CA 95118-3614 |
| 3. | Contact Person and Phone Number | Michael F. Coleman, AICP, Environmental Planner |
| 4. | Project Location | 3959 Whitman Way, San Jose, CA |
| 5. | Project Sponsor's Name and Address | Santa Clara Valley Water District (Valley Water)<br>5750 Almaden Expressway<br>San Jose, CA 95118-3614 |
| 6. | General Plan Designation | Public/Quasi Public (PQP) |
| 7. | Zoning | Low to Medium Residential Based District (R-1-8) |

| | |
|---|---|
| 8. Description of the Project | The project would replace the residuals management facilities at the PWTP with modern and more efficient residuals management facilities. |
| 9. Surrounding Land Uses and Setting | Lower Hillside (LH) and Residential Neighborhood (RN) |
| 10. Other public agencies whose approval is required | San Francisco Bay Regional Water Quality Control Board; Bay Area Air Quality Management District; City of San Jose Fire Department |
| 11. Have California Native Americans affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? | No. California Native American tribes culturally affiliated with the project area have not requested consultation pursuant to PRC Section 21080.3.1 |

### 4.1.2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

### 4.1.3 Environmental Determination

On the basis of this initial evaluation:

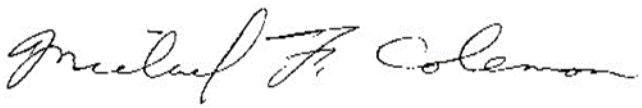
I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

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

I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐

I find that the Project MAY have a "potentially significant impact" or "potentially significant impact unless mitigated" 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 project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required. ☐



8-29-24

Michael F. Coleman, AICP, Environmental Planner — Date

### 4.1.4 Approach to Environmental Analysis

This IS checklist evaluates the potential environmental impacts of the project. The level of significance for each resource topic is determined by considering the predicted magnitude of the impact. Four levels of impact significance are evaluated in this IS checklist:

**No Impact.** The project would not have the impact described. The project may have a beneficial effect, but there is no potential for the project to create or compound the impact described.

**Less Than Significant Impact.** The project would have the impact described, but the impact would not be significant. Mitigation is not required; however, the project applicant may choose to modify the project to avoid the impacts.

**Less Than Significant with Mitigation.** The project would have the impact described, and the impact could be significant. One or more mitigation measures have been identified that will reduce the impact to a less-than-significant level.

**Potentially Significant Impact.** The project would have the impact described, and the impact could be significant. The impact cannot be reduced to a less-than-significant level by incorporating mitigation measures. An environmental impact report must be prepared for this project.

# 4.2 Environmental Checklist

## 4.2.1 Aesthetics

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **1. 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 non-urbanized 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 points). 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? | ☐ | ☐ | ☒ | ☐ |

### Environmental Setting

#### Scenic Vistas

There are no designated scenic vistas in the city of San Jose (California Department of Transportation (Caltrans) 2021). The city of San Jose's scenic resources include the broad sweep of the Santa Clara Valley, the hills and mountains on either side of the Valley floor, the Baylands, and the urban skyline. As defined in the City of San Jose General Plan, Scenic Gateways in the City of San Jose are locations that "announce to a visitor or resident that they are entering the city, or a unique neighborhood." Such locations in the city include Coleman Avenue at Interstate 880, 13th Street at US 101, and Highway 101 in the vicinity of the Highway 85 Interchange (City of San Jose 2011). There are no Scenic Gateways in close proximity to the project.

#### Scenic Highways

The only State Scenic Highway in the City of San Jose is State Route 280, which is an eligible State Scenic Highway (Caltrans, n.d.-a). As defined in the City of San Jose General Plan, the

designation of a scenic route in the City of San Jose applies to routes that afford especially aesthetic views (City of San Jose 2011). The roads surrounding the project site include views of residential development and the existing water treatment plant and open space to the north of the project site.

**Visual Quality**

***Views of Project Site***

The project is located in the City of San Jose (City), surrounded by residential and undeveloped private land use. The project site and the surrounding land is zoned as Single-Family Residential R-1-8 (up to eight dwelling units per acre). Residences surrounding the project site include a mix of single-and two-story structures. The topography of the project site and surroundings slopes from east to west towards the San Francisco Bay. The project site abuts existing residential development to the south, and there are no public vantage points of the project site from the south. The project site is screened by vegetation and topography from areas along Bay Laurel Lane, Whitman Way, and Vista del Mar, located west of the site due to the hill slope and existing landscaping around the site. There are relatively open views of the project site from Suncrest Avenue directly north and northwest of the project site. The project site is screened by topography and residential development or visible in the distance as an extension of the existing urban development from public vantage points along Suncrest Avenue and areas east of the project site. The project site is not visible from Alum Rock Park or Inspiration Point due to intervening hill slopes.

The visual quality of the project site and surroundings is characteristic of urban development. The project site consists of a water treatment plant with industrial water treatment infrastructure. The surrounding area contains residential development characteristic of urban and suburban areas within the city of San Jose. Areas to the north of the project site include undeveloped hill sides.

***Viewer Sensitivity***

Viewer sensitivity is another consideration in assessing the effects of visual change. Sensitivity is a function of factors such as the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and types and expectations of individuals and viewer groups. Private views are not considered within the context of CEQA. The only publicly accessible vantage point with open views of the project site is Suncrest Avenue. Viewer groups on Suncrest Avenue include bicyclists using the bicycle lane along the roadway and motorists traveling along the roadway. Motorists would have a view of the project site for less than 1 minute as they travel along Suncrest Avenue. Bicyclists would have a view of the project site for a few minutes as they travel uphill on Suncrest Avenue or approximately 1 minute traveling downhill. Both viewer groups would be expected to be focused on the roadway and would not be very sensitive to visual changes within the project site.

### Light and Glare

Nighttime lighting is necessary to provide and maintain safe environments. Light that falls beyond the intended area of illumination is referred to as "light trespass." The most common cause of light trespass is spillover light, which occurs when a lighting source illuminates surfaces beyond the intended area, such as when building security lighting or parking lot lights shine onto neighboring properties. Spillover light can adversely affect light-sensitive uses, such as residences, at night. Both light intensity and fixtures can affect the amount of light spillover. Modern, energy-efficient fixtures that face downward, such as shielded light fixtures, are typically less obtrusive than older, upward-facing light fixtures.

Glare is caused by light reflections from pavement, vehicles, and building materials, such as reflective glass, polished surfaces, or metallic architectural features. During daylight hours, the amount of glare depends on the intensity and direction of sunlight.

The most notable sources of light near the project are from streetlights on the surrounding residential roads, located west and south/southeast of the project. Noble Elementary School and the Noble Park and Berryessa Branch Library are located approximately 0.39 mile and 0.5 mile southeast of the project, respectively. These facilities are assumed to use nighttime lighting during certain times of the year. There are no major highways in the project site vicinity that would be an additional source of nighttime lighting.

## Discussion

**a) Would the project have a substantial adverse effect on a scenic vista?**

No, the project would not have the impact described. There are no designated scenic vistas in the project vicinity. Consequently, the project would not affect a scenic vista, nor would the project block any scenic views. The project's existing facilities and structures are visible from nearby roads, including Suncrest Avenue. The project would replace and improve water treatment process facilities at the existing PWTP. The proposed replacement facilities would not block any views of scenic vistas or have an adverse effect on a scenic vista. As such, **no impacts** on a scenic vista would occur.

**b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?**

No, the project would not have the impact described. The project is not visible from any officially designated or eligible to be designated state scenic highway as defined by the Caltrans Scenic Route Program. The nearest State Scenic Highway routes are Highway 680 and Highway 280, which are approximately 6 miles north and 8 miles southwest, respectively (Caltrans, n.d.-b). Additionally, the project site is not located in a scenic resource area as identified by the City of San Jose. As such, **no impacts** on scenic resources would occur.

**c) Would the project conflict with applicable zoning and other regulations governing scenic quality?**

The project would have a less than significant impact on zoning and other regulations governing scenic quality. The project site is an existing and active water treatment plant located

within the City of San Jose, surrounded by residential zoned areas. The City of San Jose Zoning Ordinance (Title 20 of the San Jose Municipal Code) does not specify regulations regarding the visual aesthetics of construction sites or water supply facilities.

**Construction**

As described in Section 2.4.2, project construction would include demolition, excavation, dewatering, stockpiling of material, and use of heavy equipment. Equipment and staging for construction of the new project facilities would be accessed from the existing PWTP entrance on Whitman Way. The contractor would also stage equipment within one or more disturbed or developed areas, or potentially an undeveloped site, within 10 miles of the PWTP to allow for additional space for material delivery and staging and to accommodate the limited work area within the operational PWTP.

Construction activities, including construction debris and soil disturbances, for the new dewatering building and retaining wall, staging area and construction equipment would be visible to drivers from Suncrest Avenue and Whitman Way. Construction would last approximately 5 years and is estimated to commence in 2025 and conclude in 2030.

To ensure project work sites are properly maintained, Valley Water would implement BMP WQ-11, which requires the work site to be maintained in an orderly condition, free and clear of debris, on a daily basis for the entirety of the construction. Upon project completion, all building materials, debris, unused materials, concrete forms, and other construction-related materials would be removed from the project site. With implementation of BMP WQ-11, impacts from construction activities on scenic quality would be **less than significant.**

**Operation**

Upon project completion, project facilities would be publicly visible from both Suncrest Avenue and Whitman Way. The existing view, view immediately following project construction, and view after landscape establishment are provided in Figure 4.2-1, Figure 4.2-2, and Figure 4.2-3. The project landscaping would establish over a period of approximately 10 years and would obscure most of the project facilities from view, aligning with the existing surrounding vegetation.

The visual simulations below demonstrate that trees and other plants will be strategically placed between the new project facilities and the road. Initially, as shown in Figure 4.2-2, the facilities would be partially visible, resulting in a moderate visual impact. However, over a period of approximately 10 years, the vegetation would grow to heights that will effectively screen most of the facilities, as shown in Figure 4.2-3. Impacts on visual quality from these public roadways would be further reduced due to the distance of these roads to the project site and the minimal change represented by the existing visible project elements from these public vantage points. Because of the limited viewer duration of the facilities and the effective landscape screening of the facilities, the project impact on scenic quality would be **less than significant.**

**Figure 4.2-1 Existing View of Project Site from Suncrest Avenue**

**Figure 4.2-2 View of Project After Implementation (Year 0)**

**Figure 4.2-3 View of Project After Landscape Establishment (Year 10)**

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

**Construction**

Project construction would have a less than significant impact from glare during daytime or nighttime views in the area. As stated in Section 2.4.10, construction activities would be conducted from 7 a.m. to 7 p.m. Monday through Friday and from 8:00 a.m. to 5:00 p.m. on Saturday. Construction could also occur during early morning hours or outside normal working hours for specified construction activities such as concrete delivery and pours, during outages, or to respond to unplanned disruptions in plant operations. The extended workdays would be approximately 16 hours long, and the total number of extended workdays would occur for a total of 3 weeks, intermittently, over the course of the construction period. During periods of nighttime work activity, vehicles associated with project construction could introduce additional light sources on the project site and on nearby roads. Depending on the time of year, longer durations of lighting would be required for active construction activities.

Project construction would introduce temporary sources of nighttime lighting, primarily from construction activities and equipment operation. These light sources are expected to be confined to the project site and immediate vicinity. Depending on the time of year, additional lighting may be required due to shorter daylight hours during the fall and winter months. Lighting used during construction would be short-term (up to 3 weeks total of nighttime work) and the night lighting would be focused on the active work area. The construction activities would not create a source of glare into the community.

While project construction may introduce new sources of light at and near the project site, given the temporary nature of construction and intermittent nighttime work, impacts from temporary nighttime lighting would be **less than significant**.

**Operation**

Project operation would have a less than significant impact from glare on daytime or nighttime views in the area. As described in Section 2.4.8, lights would be installed on and around the project facilities to allow safe use and observation of facilities during non-daylight hours. Facilities such as the sludge storage tanks, thickeners, flocculation/sedimentation basins, and equalization basins as well as near the centrifuge building entrances would be fitted with localized light fixtures to allow safe use and observation during non-daylight hours. The lights would be cutoff type that would illuminate the area below them but not to the sides or above, minimizing light spillage on the surrounding neighborhood while still providing sufficient light for operations staff and security purposes.

New project facilities may be visible from the surrounding areas; however, the lighting design, type, and placement would minimize any additional new sources of light on surrounding neighborhoods and would ensure that project facilities do not contribute to a new substantial source of glare.

The water surface at the basins would produce a level of glare similar to that of a natural water body and would not disturb viewers in nearby areas. The glare and any new light sources from the project would not adversely impact day or nighttime views in the area and, therefore, project impacts from new sources of light and glare would be **less than significant.**

### Mitigation Measures

No mitigation required**.**

### 4.2.2 Agricultural and Forestry Resources

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **2. 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 non-agricultural 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? | ☐ | ☐ | ☐ | ☒ |

#### Environmental Setting

The project site is located in an urban area that is not zoned or used for agricultural or forestry activities. The project site is located on land designated "urban and built-up land" according to the Farmland Mapping and Monitoring Program (FMMP), administered by the California Department of Conservation (CDOC) (California Department of Conservation, n.d.-a). No land in the vicinity of the project site is mapped as Important Farmland or under a Williamson Act Contract (California Department of Conservation, n.d.-a; Santa Clara County Department of

Planning and Development, n.d.). No Forest Land or Timberland Production Zones are located on the project site or vicinity.

### Discussion

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

No, the project would not have the impact described. The project site is currently developed as a water treatment plant and located within a developed, urbanized area. No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is located on the project site or vicinity. Therefore, the project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. As such, there would be **no impact**.

**b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?**

No, the project would not have the impact described. The project site is not located on land zoned for agricultural use. The project site is zoned as Low to Medium Residential Based District (R-1-8) and is not part of any Williamson Act contract. Therefore, the project would not conflict with zoning for agricultural use or a Williamson Act contract. As such, **no impact** would occur.

**c) Would the project 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])?**

No, the project would not have the impact described. The project site is in a residential area. No forest land as defined in PRC section 12220(g) or timberland as zoned by Government Code section 51104(g) is located in the project site. Therefore, the project would not conflict with zoning for forest land, timberland, or timberland zoned Timberland Production. As such, **no impact** would occur.

**d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?**

No, the project would not have the impact described. No forest land is located on the proposed project site or within the immediate vicinity. Therefore, there would be no conversion of forest land to a non-forest use as a result of the project. As such, **no impact** would occur.

**e) Would the project 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?**

No, the project would not have the impact described. See discussions under impact discussions a, c, and d, above. The project site would be located within the PWTP site, and any off-site staging would occur within previously developed or disturbed areas. The project would not involve other changes in the environment that could convert farmland to non-agricultural use or forest land to non-forest use. As such, **no impact** would occur.

### Mitigation Measures

No mitigation required**.**

### 4.2.3 Air Quality

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **3. 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? | ☐ | ☐ | ☒ | ☐ |

#### Environmental Setting

This section describes construction and operational air quality impacts associated with the project. The project is located within the San Francisco Bay Area Air Basin (SFBAAB). SFBAAB covers roughly 5,340 square miles and consists of Napa, Marin, San Francisco, Contra Costa, Alameda, San Mateo, and Santa Clara counties, as well as the southern portion of Sonoma County, and the western portion of Solano County. The Bay Area Air Quality Management District (BAAQMD) is the State regulatory body responsible for air quality-related activities in SFBAAB. BAAQMD has adopted guidelines for quantifying and determining the significance of air quality emissions in its *2022 CEQA Guidelines* (BAAQMD 2022).

The air quality analysis included a review of criteria pollutant emissions, such as carbon monoxide (CO), nitrogen oxide (NOx), sulfur oxide (SOx), volatile organic compounds (VOCs) as reactive organic gases (ROGs), particulate matter less than 10 micrometers (coarse particulates or $PM_{10}$), and particulate matter less than 2.5 micrometers (fine particulates or $PM_{2.5}$). Diesel particulate matter (DPM) was included in a health risk assessment (HRA). Potential odor impacts were also evaluated.

#### Air Quality Standards

EPA has established National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA) for criteria pollutants, and the California Air Resources Board (CARB) has established California Ambient Air Quality Standards (CAAQS). Air basins where NAAQS and/or CAAQS are exceeded are designated as a "nonattainment" area. If standards are met, the area is designated as an "attainment" area.

**Table 4.2-1 SFBAAB Attainment Status**

| Pollutant | USEPA Designation | CARB Designation |
|---|---|---|
| O3 | Marginal Nonattainment | Nonattainment |
| CO | Attainment | Attainment |
| NO2 | Attainment | Attainment |
| SO2 | Attainment | Attainment |
| Pb | Attainment | Attainment |
| PM10 | Unclassified | Nonattainment |
| PM2.5 | Moderate Nonattainment a | Nonattainment |
| Sulfates | N/A | Attainment |
| H2S | N/A | Unclassified |
| Visibility Reducing Particles | N/A | Unclassified |

*Source: (BAAQMD 2022)*

**Sensitive Receptors**

BAAQMD defines sensitive receptors as land uses and facilities where sensitive populations are likely to be located (BAAQMD 2022). Sensitive receptors can be categorized as follows:

- Residences (e.g., houses, apartments, retirement homes)
- Active recreational land uses (e.g., sports fields)
- Medical facilities (e.g., hospitals, long-term health care facilities)
- Eldercare facilities (e.g., convalescent homes)
- Schools and playgrounds
- Childcare centers

BAAQMD recommends identifying sensitive receptors generally within 1,000 feet of a project site (BAAQMD 2022). Active recreationalists are not considered sensitive receptors because of their mobility, which limits their exposure duration.

The project site is within 1,000 feet of residences to the south, west, and northwest. Noble Elementary School is located 0.2 mile to the southwest of the project site. Figure 4.2-4 shows the sensitive receptors within 1,000 feet of the project site.

**Air Quality Emission Thresholds**

BAAQMD adopted thresholds of significance and their latest *2022 CEQA Guidelines* on April 20, 2022, to assist lead agencies in determining when potential air quality impacts would be considered significant under CEQA and to advise lead agencies on how to evaluate potential air quality impacts with the adopted new thresholds of significance. The emission thresholds for construction and operation are shown in Table 4.2-2

**Table 4.2-2 BAAQMD Criteria Pollutant Thresholds of Significance**

| Pollutant/Precursor | Construction Related Average Daily Emissions (lb/day) | Operational Average Daily Emissions (lb/day) | Operational Maximum Annual Emissions (tpy) |
|---|---|---|---|
| ROG | 54 | 54 | 10 |
| NOx | 54 | 54 | 10 |
| $PM_{10}$ | 82 (exhaust) | 82 | 15 |
| $PM_{2.5}$ | 54 (exhaust) | 54 | 10 |
| PM10/PM2.5 (fugitive dust) | Best management practices | None | None |
| Local CO | None | 9.0 ppm (8-hour average), 20.0 ppm (1-hour average) | 9.0 ppm (8-hour average), 20.0 ppm (1-hour average) |

*Sources: (BAAQMD 2022)*

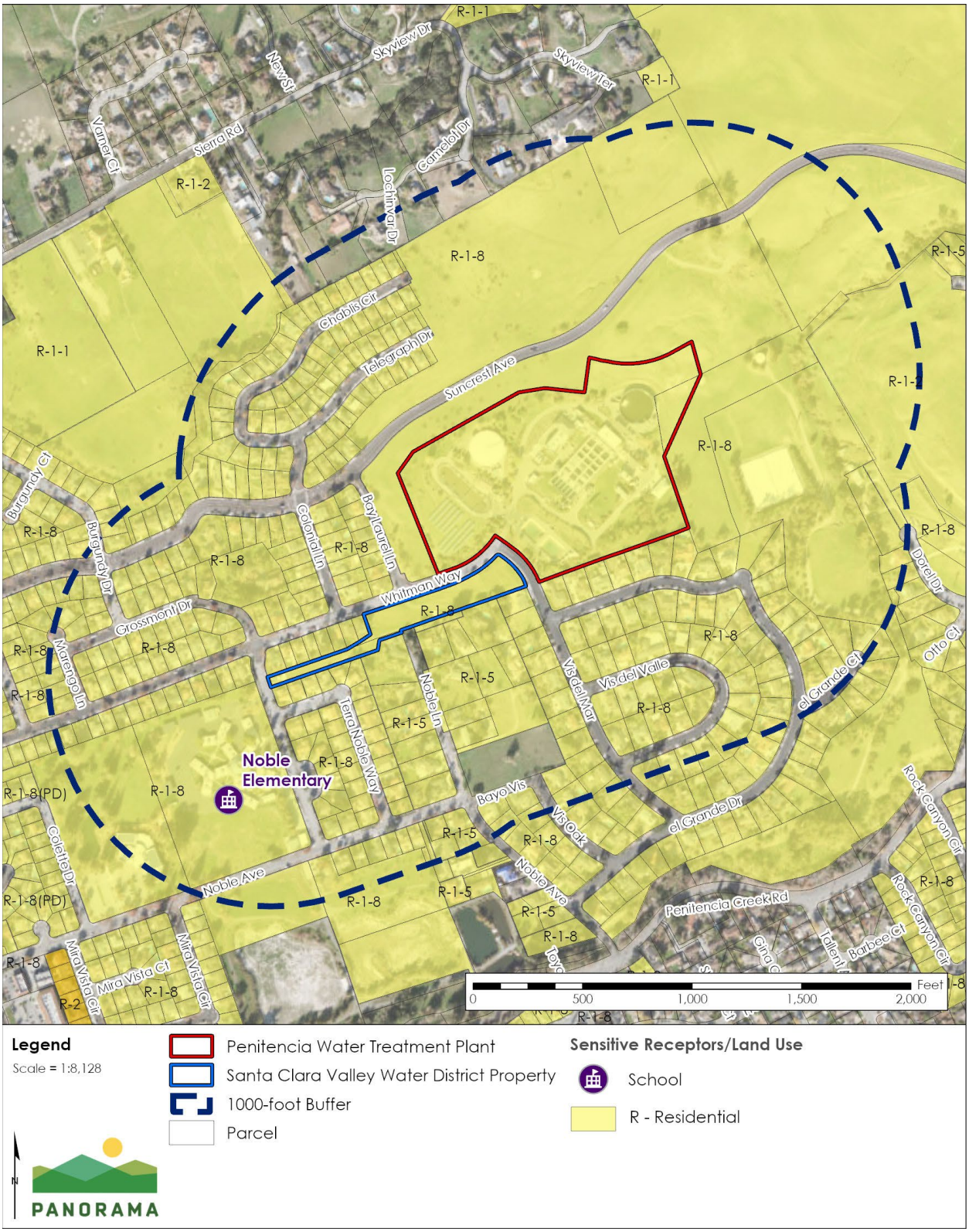
The BAAQMD also maintains thresholds of significance for toxic air contaminants, as shown in Table 4.2-3 (BAAQMD 2022). These thresholds apply to both permitted and non-permitted sources. Carcinogenic (cancer) risk is expressed as cancer cases per one million. Noncarcinogenic (acute or chronic) hazard indices are expressed as a ratio of expected exposure levels to acceptable exposure levels. DPM has a cancer potency factor and a chronic hazard index, but no acute hazard index (OEHHA 2015). The significance of the impacts of toxic air contaminant emissions from both permitted and non-permitted equipment and activities is evaluated under a single threshold.

**Table 4.2-3 Toxic Air Contaminants Thresholds of Significance**

| Pollutant | Threshold |
|---|---|
| **Project Health Risk and Hazards** | |
| Excess Cancer Risk | 10 per million |
| Chronic Hazard Index | 1.0 |
| Acute Hazard Index | 1.0 |
| Incremental Annual Average PM2.5 | 0.3 µg/$m^3$ |
| **Cumulative Health Risk and Hazards** | |
| Excess Cancer Risk | 100 per million |
| Chronic Hazard Index | 10.0 |
| Acute Hazard Index | 10.0 |
| Incremental Annual Average PM2.5 | 0.8 µg/$m^3$ |

*Sources: (BAAQMD 2022)*

**Figure 4.2-4 Sensitive Receptors in the Vicinity of the Project Site**



**Health Risk Assessment**

An HRA was prepared for the project in accordance with the California Office of Environmental Health Hazard Assessment's (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (OEHHA 2015). The HRA was conducted to determine the health impacts, in terms of excess cancer risk and non-cancer hazards, using the significance levels identified by the BAAQMD.

**Air Quality Emissions Modeling**

Emissions associated with the project were calculated using the California Emissions Estimator Model (CalEEMod, version 2022.1). Intermittent (short-term construction emissions that occur from activities, such as removal of structures, site-grading, and construction of structures) and long-term air quality impacts related to the operation of the project were evaluated. The analysis focuses on daily and annual emissions from construction and operational (mobile, area, stationary, and fugitive sources) activities. The air quality analysis is consistent with the methods described in the *BAAQMD 2022 CEQA Air Quality Guidelines* (BAAQMD 2022). The results of the air quality emissions modeling are provided in Appendix B.

The air quality analysis includes a review of criteria pollutant emissions such as carbon monoxide (CO), nitrogen oxides ($NO_x$), sulfur dioxide ($SO_2$), volatile organic compounds (VOC) as reactive organic gases (ROG), particulate matter less than 10 micrometers (coarse particulate or $PM_{10}$), and particulate matter less than 2.5 micrometers (fine particulate or $PM_{2.5}$). Other regulatory models used to estimate air quality impacts include, CARB EMFAC emissions inventory model, CARB OFFROAD emissions inventory model, and AERMOD (American Meteorological Society/USEPA Regulatory Model, Version 23132) for atmospheric dispersion modeling.

## Discussion

#### a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

The project would have a less than significant effect on the impact described. The project is within the SFBAAB, which is under the BAAQMD's jurisdiction. The most recently adopted air quality plan for the SFBAAB is the *2017 Clean Air Plan*, which includes 85 control measures aimed at reducing air pollution in the SFBAAB. The *2017 Clean Air Plan* provides a roadmap for BAAQMD's efforts over the next few years to reduce air pollution and protect public health and the global climate. In determining consistency with the applicable air quality plan, the analysis considered whether the project would (1) support the primary goals of the plan, (2) include applicable control measures, if any, and (3) avoid disrupting or hindering implementation of control measures. If it can be concluded with substantial evidence that a project would be consistent with the above three criteria, then the BAAQMD considers it to be consistent with air quality plans prepared for the Bay Area.

The measures most applicable to the project are transportation control measures and energy and climate control measures (the project's impacts with respect to GHG emissions are discussed in Section 4.2.8, Greenhouse Gas Emissions). Workers and contractors would commute to and from the project site during construction, and heavy equipment and vehicles

would be required to conduct various construction activities. The following transportation control measure would be applicable to the project:

- Deploy construction and farm equipment with Tier III or IV off-road engines (TR22).

Construction vehicles and equipment would comply with federal standards for vehicle fuel efficiency because all vehicles and machinery that are sold in the U.S. must meet those standards. Furthermore, as discussed in Section 4.2.8, Greenhouse Gas Emissions, Valley Water implements actions in accordance with the Valley Water CCAP and Ends Policies, such as increasing fleet efficiency, increasing use of renewable energy, and encouraging use of efficient equipment. These actions would be implemented by Valley Water or contractors as part of the project and would be consistent with the *2017 Clean Air Plan* transportation control measure. Thus, the use of vehicles and equipment proposed as part of the project would not conflict with the measure, and the project would not conflict with or obstruct implementation of the control measures identified to achieve the goals of the *2017 Clean Air Plan*.

Vehicles and equipment used during construction would emit DPM and criteria air pollutants. As discussed in detail under Impact AIR-2, estimated emissions during implementation of the construction would not exceed the BAAQMD significance thresholds for particulate matter ($PM_{10}$ and $PM_{2.5}$) and ozone precursors (NOx and ROG), as shown in Table 4.2-2. Because the project would not conflict with the control strategies in the 2017 Clean Air Plan or exceed the project-level air quality thresholds for attaining the air quality standards, project implementation would not conflict with or obstruct implementation of the applicable air quality plan. As such, the impact would thus be **less than significant**.

**b) Would the project 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?**

**Construction**

***Criteria Air Pollutants***

The project would have a less than significant effect on the impact described. Project construction would generate emissions of air pollutants from combustion exhaust emissions. The project construction is proposed to begin between 2025 to 2030 and would be completed in approximately 4 to 8 years with the first 6 to 9 months consisting of mobilization and staging. For the purpose of this analysis and to provide a worst-case scenario for maximum pollutant emissions, it was assumed that construction would be completed in approximately 4 years with near continuous construction activities.

Table 4.2-4 provides the estimated average daily construction emissions that would be associated with the project, compared against the BAAQMD's significance thresholds for construction emissions. All construction-related combustion exhaust emissions would be below the BAAQMD significance thresholds. Because all criteria air pollutant emissions would be below the BAAQMD significance thresholds, the impact from construction equipment exhaust emissions would be **less than significant**.

**Table 4.2-4 Estimated Average Daily Construction Emissions (pounds)**

| Condition/Year | ROG | $NO_X$ | $PM_{10}$ | $PM_{2.5}$ | CO |
|---|---|---|---|---|---|
| 2025 | 16.3 | 4.32 | 46.0 | 9.76 | 6.23 |
| 2026 | 16.4 | 3.25 | 45.9 | 9.72 | 5.90 |
| 2027 | 16.2 | 3.37 | 45.9 | 9.72 | 6.40 |
| 2028 | 16.3 | 2.17 | 45.9 | 9.66 | 5.11 |
| Significance Threshold | 54 | 54 | 82 | 54 | --- |
| Significant? (yes/no) | **No** | **No** | **No** | **No** | **No** |

*Source: (RCH 2024)*

***Fugitive Dust***

The project would have a less than significant effect on the impact described after the implementation of mitigation. Fugitive dust in the form of $PM_{10}$ and $PM_{2.5}$ would be generated from construction activities including site preparation, grading, soil movement, demolition, temporary staging and other ground-disturbing activities. For a project to have a less-than-significant impact for construction-related fugitive dust emissions, it must implement all of the best management practices identified in Table 5-2 of the *2022 BAAQMD CEQA Air Quality Guidelines*.. To control fugitive dust, Valley Water would implement BMP AIR-1, which requires routine watering of exposed surfaces where construction equipment and vehicle use would occur, covering haul trucks transporting loss sediment and materials, removal of visible mud or dirt track-out on public roads, and limiting vehicle speeds on unpaved roads. The dust control requirements in BMP AQ-1 are somewhat consistent with the standard fugitive dust control measures in the *2022 BAAQMD CEQA Air Quality Guidelines* shown in Table 4.2-5; however, the BMP does not include the limitation on work when wind speeds exceed 20 mph, washing of tires, or use of gravel for travel off road. Mitigation Measure AQ-1 specifies limitation on work when wind speeds exceed 20 mph and requires washing of tires and gravel for travel off road consistent with BMP AQ-1 and *2022 BAAQMD CEQA Air Quality Guidelines*. The Project would also implement BMP WQ-16, which includes installing erosion control measures to prevent runoff to public roadways, as well as hydroseeding and planting in previously graded areas consistent with Enhanced Dust Control Measures E-3, E-4, and E-6. Because the project would implement the aforementioned BMPs and mitigation measure to control fugitive dust, which collectively are consistent with the dust control requirements of the *2022 BAAQMD CEQA Air Quality Guidelines*, the impact from fugitive dust emissions would be **less than significant with mitigation**.

**Table 4.2-5 BAAQMD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions**

| BMP ID | Basic Best Management Practice |
|---|---|
| **B-1** | All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. |
| **B-2** | All haul trucks transporting soil, sand, or other loose material off-site shall be covered. |
| **B-3** | All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. |
| **B-4** | All vehicle speeds on unpaved roads shall be limited to 15 mph. |
| **B-5** | All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. |
| **B-6** | All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph. |
| **B-7** | All trucks and equipment, including their tires, shall be washed off prior to leaving the site. |
| **B-8** | Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel. |
| **B-9** | Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations. |

*(Source: (BAAQMD 2022))*

### Operation

Project operations would have a less than significant effect on the impact described. Project operations would generate combustion emissions of air pollutants (ROG, NOx, CO, sulfur dioxide, $PM_{10}$, and $PM_{2.5}$), primarily from emergency generator use and electrical use.

The project would require a power increase of approximately 300,000 kilowatts-hours (kwh) per year for operations after construction is completed. The 300,000 kwh per year is based on operation of the centrifuge and sludge storage tank mixers as well as the additional small motors and pumps for the sludge handling and washwater facilities. No additional natural gas usage is planned for the project. No changes are anticipated in solid waste generation for project operations. No new employee vehicle trips are expected to increase. The proposed upgrades would provide thicker solids which would therefore require fewer truck trips for the removal of solids during operation of the project.

A new 500-kilowatt standby generator would provide backup power for critical equipment in the event of power interruptions, for the sludge holding and dewatering facilities. The standby generators would be tested monthly for two hours (and up to 100 hours per year). The new standby generator would be required to obtain an Authority to Construct/Permit to Operate, which could require source testing prior to startup and annually afterwards, as well as other

permit conditions from the BAAQMD. Using standard fuel consumption estimates, the generator would require 3,475 gallons of diesel fuel per year.[1]

Table 4.2-6 provides the estimated daily and annual emissions from project operations compared to BAAQMD thresholds of significance. As indicated in Table 4.2-5, the project operational emissions would be below the BAAQMD's significance thresholds and would therefore be **less than significant**.

**Table 4.2-6 Estimated Operational Emissions**

| Condition | ROG | $NO_X$ | $PM_{10}$ | $PM_{2.5}$ | CO |
|---|---|---|---|---|---|
| Project Daily Emissions | 0.56 | 1.48 | 0.09 | 0.09 | 7.68 |
| Significance Threshold | 54 | 54 | 82 | 54 | --- |
| Significant? (yes/no) | **No** | **No** | **No** | **No** | **No** |
| Project Annual Emissions | 0.01 | 0.04 | <0.01 | <0.01 | 0.19 |
| Significance Threshold | 54 | 54 | 82 | 54 | --- |
| Significant? (yes/no) | **No** | **No** | **No** | **No** | **No** |

*Source: (RCH 2024)*

Based on the air emissions analysis conducted, long-term operation of the project would not exceed applicable significance thresholds intended to protect regional and local air quality conditions and public health. Project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard. As such, the impact would be **less than significant.**

#### c) Would the project expose sensitive receptors to substantial pollutant concentrations?

**Construction**

The project would have a less than significant effect on the impact described after the implementation of mitigation. The project site has residential communities within 1,000 feet of residences to the south, west, and northwest, as well as Noble Elementary School located within

[1] Fuel usage is estimated using the CalEEMod output for $CO_2$, and a 8.91 $kgCO_2$/gallon (gasoline) and 10.15 $kgCO_2$/gallon (diesel) conversion factor (U.S. Environmental Protection Agency 2018).

0.2 mile to the southwest of the project site. Due to the presence of sensitive receptors within 1,000 feet of the project and construction duration lasting more than 6 months, an HRA was conducted following methodologies in OEHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Because construction activities will last more than 6 months, the project would constitute a new emission source of DPM and $PM_{2.5}$. Studies have demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk.

In accordance with OEHHA *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments,* the HRA was accomplished by applying the highest estimated concentrations of TAC at the nearest receptors to the established cancer potency factors and acceptable reference concentrations for non-cancer health effects. Increased cancer risks were calculated using the modeled DPM concentrations and OEHHA-recommended methodologies for both child exposure (3rd trimester through two years of age) and adult exposure. The cancer risk calculations were based on applying the OEHHA-recommended age sensitivity factors and breathing rates, as well as fraction of time at home and an exposure duration of 30 years, to the DPM concentration exposures. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing air pollutants.

The conservative methodologies applied in the HRA overestimate both non-carcinogenic and carcinogenic health risk, possibly by an order of magnitude or more. Therefore, for carcinogenic risks, the actual probabilities of cancer formation in the populations of concern due to exposure to carcinogenic pollutants are likely to be lower than the risks derived using the HRA methodology. The extrapolation of toxicity data in animals to humans, the estimation of concentration prediction methods within dispersion models; and the variability in lifestyles, fitness and other confounding factors of the human population also contribute to the overestimation of health impacts. Therefore, the results of the HRA are highly overstated. Because an HRA overestimates cancer risk, the results should not be interpreted as the expected rates of cancer or other potential human health effects, but rather as estimates of potential risk or likelihood of adverse effects based on current knowledge, under a number of highly conservative assumptions and the best assessment tools currently available.

The maximum cancer risk, chronic hazard impacts, and concentrations of $PM_{2.5}$ from project construction emissions are shown in Table 4.2-7 and further details are provided in the HRA in Appendix B.

***Cancer Risk***

As shown in Table 4.2-7 the maximum cancer risk from unmitigated project construction emissions for a residential-adult receptor would be 1.17 per million and for a residential-child receptor would be 16.9 per million. The maximum exposed individual residence (MEIR) due to project construction is located along El Grande Drive (south of the washwater ponds). The cancer risk for a child due to unmitigated construction activities are greater than the BAAQMD threshold of 10 per million.

**Table 4.2-7 Estimated Construction Health Impacts at Existing Receptors**

| Source | Cancer Risk (child) | Cancer Risk (adult) | Hazard Impact | PM2.5 Concentration |
|---|---|---|---|---|
| **Unmitigated Proposed Project Construction** | 17.1 per million | 1.12 per million | 0.01 | 0.24 |
| Significance Threshold | 10.0 per million | 10.0 per million | 1.00 | 0.30 |
| Significant? (yes/no) | **Yes** | **No** | **No** | **No** |
| **Mitigated Proposed Project Construction** | 5.19 per million | 0.37 per million | <0.01 | 0.11[a] |
| Significance Threshold | 10.0 per million | 10.0 per million | 1.00 | 0.30 per |
| Significant? (yes/no) | **No** | **No** | **No** | **No** |

[a] While the PM2.5 concentration would not exceed the significance threshold, application of Mitigation Measure AQ-1 would further reduce emissions.

*Source: (BAAQMD 2022)*

Valley Water would implement Mitigation Measure AQ-2, which requires use of USEPA certified Tier 4 construction with CARB Tier 3 diesel particulate filters equipment for any construction equipment operating more than two continuous days or 20 hours total during construction, use of electric power where feasible, location of any generators more than 100 feet from sensitive land uses, and using equipment that meets CARB's 2010 engine emission standards or cleaner. With implementation of Mitigation Measure AQ-2, the maximum cancer risk from project construction would be reduced to 0.39 per million for a residential-adult receptor and 5.15 per mission for a residential-child receptor. The impact from DPM emissions would not exceed the BAAQMD significance threshold of 10 per million and the impact would **be less than significant after implementation** of MM AQ-2.

***Hazard Index DPM***

In the HRA, both acute (short-term) and chronic (long-term) adverse health impacts unrelated to cancer are measured against a hazard index (HI). The HI is defined as the ratio of the predicted incremental DPM exposure concentration from the project to a reference exposure level (REL) that could cause adverse health effects. The impact is considered significant if the overall HI for the highest-impacted organ system is greater than 1.0.

As shown in Table 4.2-7, the unmitigated chronic HI would be 0.01, based on a project-related maximum annual diesel concentration of 0.06 µg/m$^3$ (per dispersion modeling analysis). The chronic HI would be below the project-level significance threshold of 1 and the hazard impact of the project would therefore be **less than significant**.

***Hazard Index PM2.5***

. The HRA also estimates the exposure of sensitive receptors to project-related concentrations of $PM_{2.5}$. The *2022 BAAQMD Air Quality Guidelines* requires inclusion of $PM_{2.5}$ exhaust and fugitive dust emissions in the HI analysis. The project's unmitigated annual $PM_{2.5}$ concentration from construction activities with implementation of BMP AQ-1 would be 0.19 $\mu g/m^3$, which would be below the BAAQMD threshold of 0.3 $\mu g/m^3$ and would be considered **less than significant**.

**Operation**

Project operation would have a less than significant effect on the impact described. The project operations would include a new standby diesel generator for emergency use. The maximum cancer risk from project operational emissions (i.e., standby generator) for an adult residential receptor would be 0.4 per million. The maximum cancer risk from operational emissions for a child receptor would be 5.2 per million. As such, the cancer risk due to operational activities is less than the BAAQMD threshold of 10 per million and would be less than significant.

#### d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The project would have a less than significant effect on the impact described. Other emissions potentially associated with the project would be predominantly associated with the generation of odors during project construction and operation. The occurrence and severity of odor impacts would depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. However, odors disperse less quickly during inversions or during calm conditions, which hamper vertical mixing and dispersion. The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant impact. The BAAQMD significance threshold for odor impacts is five confirmed complaints per year averaged over three years.

**Construction**

The project would have a less than significant effect on the impact described. Project construction would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes, while project operations would involve the use of a diesel emergency generator. There is a small hill that separates the project construction site from the nearest sensitive receptors directly to the south. The distance to the nearest residence is approximately 90 feet from the construction area. The hillslope to the east of the construction area intercepts the project site from residents to the southeast. The prevailing wind direction in the San Jose area is north-northwest and receptors to the south would be most affected by any odors generated.

Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. In addition, architectural coatings would also emit temporary odors. However, these emissions would occur intermittently throughout the workday due to intermittent heavy equipment use and limited use of architectural coatings and would dissipate rapidly within increasing distance

from the source. Therefore, construction activities would not be likely to expose a substantial number of people to frequent odorous emissions. As such, the impact would be less than significant.

**Operation**
The project would have a less than significant effect on the impact described. The existing PWTP RMS involves use of open ponds to condense solids and has a dewatering building for thickening of sludge. Sludge is then stockpiled in the open air. The project would improve the RMS system by including use of gravity thickeners to further thicken the sludge. The sludge would be transferred from the gravity thickeners to enclosed sludge storage/mixing tanks. Because the thickened sludge would be enclosed within a sludge storage/mixing tanks and would not be open to the air, the project would reduce the odors generated during operation compared to the existing RMS process.

Only two odor complaints were issued to the BAAQMD for the period from January 1, 2017, to June 1, 2022 for the PWTP. Given the project design elements would reduce odors and the very limited odor complaint history, the project would not result in significant odor impacts.

### Mitigation Measures

**Mitigation Measure AQ-1: Dust Control**
The contractor shall implement the following dust control measures consistent with BAAQMD Guidelines:

- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted wood chips, mulch, or gravel.

**Mitigation Measure AQ-2: Construction Equipment Air Quality Standards**
The contractor shall implement the following measures during construction to reduce construction exhaust emissions:

- All construction equipment larger than 50 horsepower used at the project site for more than two continuous days or 20 hours total shall utilize diesel engines that are USEPA certified "Tier 4 final" emission standards for particulate matter and equipped with CARB-certified Level 3 Diesel Particulate Filters. The construction contractor shall submit specifications of the equipment to be used during construction and Valley Water shall confirm the equipment meets this requirement/standard.
- Equipment such as air compressors, concrete/industrial saws, forklifts, light stands, manlifts, pumps, and welders shall be electric or alternative-fueled (i.e.,

non-diesel), where feasible. Pole power shall be utilized at the earliest feasible point in time and shall be used to the maximum extent feasible in lieu of generators. If stationary construction equipment, such as diesel-powered generators, must be operated continuously, such equipment must be Tier 4 Final construction equipment or better and located at least 100 feet from air quality sensitive land uses (e.g., residences, schools, childcare centers, hospitals, parks, or similar uses), whenever possible.

- At a minimum, construction vendors, contractors, and/or haul truck operators commit to using 2010 model year trucks (e.g., material delivery trucks and soil import/export with a gross vehicle weight rating of at least 14,001 pounds), that meet CARB's 2010 engine emissions standards or newer, cleaner trucks.

### 4.2.4 Biological Resources

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **4. 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 Game 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 Game or US 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? | ☐ | ☐ | ☐ | ☒ |
| 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? | ☐ | ☐ | ☐ | ☒ |

#### Environmental Setting

The environmental setting was informed by the Biological Resources Report prepared for this project and is included in Appendix C.

#### Project Site

The project site consists of developed lands with buildings and other structures, access roads, water treatment infrastructure, and other cleared areas that do not support vegetation. Residential uses surround the project site to the north, west, and south and include mostly single-family homes. In these areas, there are small undeveloped grassy areas between the

project and nearby residential neighborhoods. To the north/northeast of the project site are additional grassland areas.

**Vegetation Communities and Land Cover Types**

***California Annual Grassland***

The primary vegetation type/community on the project site is California annual grassland (1.68 acres). Wildlife use of this habitat on the project site is limited due to the relatively small extent of the grassland, the existing water treatment facilities and paved areas and its position on the periphery of the project site, and the developed, residential land uses that surround the project site on three sides.

***Serpentine Bunchgrass Grassland***

Patches of serpentine bunchgrass grassland (0.44 acre) are present on the project site, primarily along the northwestern margin. Native plants present within this habitat include nodding needlegrass, which provides greater than 30 percent cover within this land cover type. Nodding needlegrass is occasionally present, but much more sparsely, throughout surrounding areas mapped as California annual grassland. Additionally, unlike areas mapped as California annual grassland, there is little to no tree or shrub canopy layer within the serpentine bunchgrass grassland on the project site. Serpentine bunchgrass grassland is a sensitive vegetation community.

***Urban-Suburban***

A 1.33-acre portion of the project site consists of existing developed areas that fall within the Santa Clara Valley Habitat Plan's (VHP's) urban-suburban land cover type. These areas include paved roadways and existing infrastructure, such as buildings and associated equipment, within the project site.

**Wetlands and Riparian Areas**

No wetlands or riparian areas occur within the project site.

**Wildlife Movement**

The project site is located along the eastern boundary of suburban development associated with the city of San Jose. The project's open habitats are contiguous with extensive open habitats of the Diablo Range to the east and some dispersal of animals between the project site and the immediate adjacent undeveloped areas. However, to the west of the project site, the City of San Jose and the larger metropolitan complex of South Bay cities form a nearly impassable barrier to long-range, east-west movements by non-flying animals. Although the Diablo Range to the east of the project site provides extensive natural habitats that support long-range movements by a variety of animals, the project site is not situated within this movement corridor. Therefore, the project site is not located within a particularly important area for regional wildlife movement.

Most larger animals that stray into the suburban matrix near the project site during their movement or migration events are not likely to remain there for long, as many of these species, including bobcats, coyotes, and mountain lions, are averse to human interaction. In contrast, wildlife residing on or near the project site are accustomed to human disturbance, such as the

numerous black-tailed deer (including fawns, does, and bucks) observed on the project site. Many of these species will navigate readily through the matrix of suburban, agricultural, and rural-residential landscapes. Thus, while small-scale, local movement of wildlife may occur throughout the project site, it not expected that animals would use the project site during regionally important, landscape-level movements or migration.

**Special Status Species**

The following databases were reviewed for a 5-mile radius surrounding the project site, and queries were conducted of the Calaveras Reservoir, California USGS 7.5-minute quadrangle and surrounding eight quadrangles (La Costa Valley, Mendenhall Springs, Mount Day, Lick Observatory, San Jose East, San Jose West, Milpitas, and Niles) to evaluate the potential for special status species to occur in the project site (H.T. Harvey and Associates 2024b):

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB)
- Habitat and species information from the VHP
- The VHP Geobrowser
- iNaturalist
- eBird
- California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, 2B, 3, and 4 lists

***Special Status Plant Species***

The CNPS (California Native Plant Society 2024)and CDFW (California Department of Fish and Wildlife 2024) identify 70 special status plant species as potentially occurring in at least one of the nine USGS 7.5-minute quadrangles containing or surrounding the project site (Appendix C). Of the 70 potentially occurring special status plant species, 65 were determined to be absent from the project site due to either: (1) absence of suitable habitat types, (2) lack of specific microhabitat or edaphic requirements, (3) the elevation range of the species is outside of the range of the project site, and/or (4) the project site is outside the species' known geographic range and/or there are no nearby extant records. Of the 5 special status plant species for which suitable habitat is present on the site, focused surveys conducted during the on May 21, 2024, determined that all are absent from the site (H.T. Harvey and Associates 2024b) .

***Special Status Wildlife***

Special status animal species with potential to occur on the project site based on the results of the database search and May 2024 site survey are presented in Table 4.2-8, below. Most of the special status species listed in Table 4.2-8 are not expected to occur on the project site because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat.

**Table 4.2-8. Special-Status Animal Species, Their Status, and Potential for Occurrence on the Project Site**

| Name | Status | Habitat | Potential for occurrence on project site |
|---|---|---|---|
| Crotch's bumble bee (*Bombus crotchii*) | SC | Open grassland and scrub habitats with abundant flowers providing nectar and pollen and with subterranean nest sites (such as animal burrows). | **May be present.** Since 2019, there have been a number of records of small numbers of individuals from scattered locations in Santa Clara County as close to the project site as Sierra Vista Open Space, approximately 2.1 miles to the east, where the species was recorded in June 2023 and May 2024 (Bumble Bee Watch 2024), indicating that the species is still extant in the county. The project site does not provide high-quality habitat for this species as the project site is dominated by non-native grasses, and flowering plants are not abundant. However, individuals may occur occasionally and in small numbers as foragers, and the possibility that nesting could occur on the site (e.g., in a ground squirrel burrow) cannot be ruled out. |
| Northwestern pond turtle (*Actinemys marmorata*) | CSSC, FT(P), VHP | Permanent or intermittent/seasonal water in a variety of habitats. Nests in uplands surrounding aquatic habitats, typically within 600 feet, but up to 0.25 mile away, depending on habitat conditions. | **May be present.** Northwestern pond turtles are known in the project vicinity, with the closest CNDDB-mapped occurrence in a pond approximately 0.32 mile west-southwest of the project site (California Department of Fish and Wildlife 2024). |
| California red-legged frog (*Rana draytonii*) | FT, CSSC, VHP | Streams, freshwater pools, and ponds with emergent or overhanging vegetation | **May be present.** California red-legged frogs are known in the project site vicinity; the closest records of the species to the project site are from Sierra Vista Open Space Preserve, approximately 1.63 miles to the east (California Department of Fish and Wildlife 2024).While the closest known occurrences to the project site near the limits of the dispersal capabilities of the species, there are no substantial barriers to dispersal between these known populations and the project site. The project site lacks suitable breeding habitat although ostensibly suitable dispersal and foraging habitat is present on the project site. Given that populations exist within the known dispersal distance of this species and that dispersal from nearby ponds or creeks is possible, the presence of California red-legged frogs, at least occasionally and in small numbers, cannot be ruled out. |

| Name | Status | Habitat | Potential for occurrence on project site |
|---|---|---|---|
| Tricolored blackbird (*Agelaius tricolor*) | ST, VHP | Highly colonial nester that establishes dense breeding colonies in emergent vegetation, grain fields, fallow fields, extensive thickets of blackberry, ruderal vegetation such as mustard or thistle, and occasionally in early-successional riparian habitat. Nesting colonies usually are located near fresh water. Tricolored blackbirds are itinerant nesters and, because their nesting habitat is ephemeral, it is possible for this species to colonize or recolonize an area as suitable breeding habitat becomes available. | **May be present as nonbreeder.** In Santa Clara County, the species has bred in only a few scattered locations and is absent from, or occurs only as a nonbreeder in, most of the County (Rottenborn 2007b). The species typically nests in flooded, thorny, or spiny vegetation such as blackberry, cattails, willows, thistles, or nettles, none of which is present on or adjacent the project site. No cattails are present at either pond, and no large patches of thistles or other spiny vegetation are present on the project site. The scattered trees present on the project site do not provide suitable nesting habitat for this species. Therefore, suitable nesting habitat is absent from the project site. Tricolored blackbirds forage in agricultural fields, grasslands, and other open habitats, and small numbers could occasionally forage in the grassland and wetland habitats on the project site during either the breeding or nonbreeding season. |
| Mountain lion (Southern California/Central Coast ESU) (*Puma concolor*) | SC | Has a large home range size and occurs in a variety of habitats. Natal dens are typically located in remote, rugged terrain far from human activity. May occasionally occur in areas near human development, especially during dispersal. | **May be present as nonbreeder.** In the project site vicinity, there are verified sightings and numerous unpublished reports. Occurs widely, though at low densities, throughout the Santa Cruz Mountains and Diablo Range, and may disperse into lowland/valley floor areas. Mountain lions are not expected to regularly use the project site or establish a den on the site due to high levels of human activity and a lack of suitable denning habitat, but individuals may occur on the site as rare dispersants due to the site's location on the periphery of the Valley floor as well as during hunting events as multiple deer were observed using the project site during the reconnaissance survey. |
| Northern harrier (*Circus hudsonius*) | CSSC nesting | Nests in marshes and moist fields with tall vegetation and sufficient moisture to inhibit accessibility of nest sites to predators. Forages over open areas. | **May be present as nonbreeder.** This species, which is considered special status only when breeding, occurs year-round in the project site vicinity. There are no wetlands present on the project site, and this precludes this species' presence as a breeder. However, the species may occur as an occasional forager. |
| Burrowing owl (*Athene cunicularia*) | CSSC, VHP | Nests and roosts in open grasslands and ruderal habitats with suitable burrows, usually those | **May be present as nonbreeder.** Burrows of California ground squirrels on the project site provide ostensibly suitable nesting and roosting habitat for this species, and grasslands on the site provide ostensibly suitable foraging habitat. |

| Name | Status | Habitat | Potential for occurrence on project site |
|---|---|---|---|
| | | made by California ground squirrels. | However, only three ground squirrel burrows were observed during the survey. Burrowing owls are not known to occur on the project site, and no individuals were observed during the May 2024 reconnaissance surveys. It is possible, however, that burrowing owls may occur on the site as infrequent transients or foragers in low numbers during winter and migration, and nonbreeders could occasionally roost in the handful of ground squirrel burrows on the project site. |
| Loggerhead shrike (*Lanius ludovicianus*) | CSSC nesting | Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats. | **May be present as breeder.** Loggerhead shrikes are known to nest in the project vicinity where open grassland, ruderal, or agricultural habitat with scattered brush, chaparral, or trees providing perches and nesting sites are present (Bousman 2007a). Moderately suitable nesting habitat is present within the project site, and up to one pair may nest in trees on or adjacent to the project site. However, due to recent declines in this species' South Bay populations, the probability of nesting is low. |
| Yellow warbler (*Setophaga petechia*) | CSSC nesting | Nests in riparian woodlands. | **May be present as nonbreeder.** Yellow warblers are not known to breed in the vicinity of the project site, and no suitable habitat is present on the project site. However, migrants may occur on the project site during spring and fall migration. |
| Grasshopper sparrow (*Ammodramus savannarum*) | CSSC nesting | Nests and forages in grasslands, meadows, fallow fields, and pastures. | **May be present as nonbreeder.** Known to occur in the region primarily in grasslands and less frequently disturbed agricultural habitats, mostly in the foothills. This species does not breed in grasslands on the Santa Clara Valley floor. Small numbers of individuals may forage in grasslands in the project site during migration. No suitable nesting habitat occurs on the project site, and no individuals were observed during the reconnaissance survey in May 2024. |
| Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) | CSSC | Nests in pickleweed dominant salt marsh and adjacent ruderal habitat. | **May be present as nonbreeder.** In the South San Francisco Bay, nests primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat and in adjacent ruderal habitats though small numbers nest in extensive grasslands within the Santa Cruz Mountains as well. No suitable nesting habitat occurs on the project site, and no individuals were observed during the reconnaissance survey in May 2024. |

| Name | Status | Habitat | Potential for occurrence on project site |
|---|---|---|---|
| Pallid bat (*Antrozous pallidus*) | CSSC | Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees. | **May be present as nonbreeder.** The species is not known in the project site vicinity. The closest record is a 2007 record in the vicinity of Vista Point Court, located approximately 5.87 miles south-southeast of the project site (CNDDB 2024). No known maternity colonies of this species are present in the vicinity of the project site. No suitable roosting habitat was identified during the May 2024 reconnaissance survey. No large tree cavities or suitable artificial structures suitable to support a roost of this species were observed during the reconnaissance survey. It is unlikely that the species occurs on the site at all due to nearby urbanization; however, individuals from distant colonies (especially in the Diablo Range to the east) could occasionally forage on the project site. |
| San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) | CSSC | Nests in a variety of habitats including riparian areas, oak woodlands, and scrub. | **Present.** Suitable habitat for this species is present in the southern side of the PWTP site, where at least one occupied nest was observed during the May 2024 reconnaissance survey. Food plants (e.g., toyon (*Heteromeles arbutifolia*) and coast live oak (*Quercus agrifolia*) are also present within the PWTP. |
| American badger (*Taxidea taxus*) | CSSC | Burrows in grasslands and occasionally in infrequently disked agricultural areas. | **May be present as nonbreeder.** Known to occur in the project site vicinity as close as Sierra Vista Open Space Preserve, located approximately 1.88 miles east of project site. Found primarily in extensive grasslands and agricultural habitats in the Diablo Range. Badgers are not expected to regularly use the project site or establish a den on the site due to high levels of human activity, but individuals may occur on the site as infrequent dispersants or foragers due to the site's location in close proximity to known populations. |
| Golden eagle (*Aquila chrysaetos*) | SP | Breeds on cliffs or in large trees (rarely on electrical towers); forages in open areas. | **May be present as nonbreeder.** No suitable nesting habitat for golden eagles is present on the project site. This species occurs in the project vicinity as an occasional forager, primarily during migration and winter. The project site provides only very limited foraging habitat for this species due to its small size as well as the lack of suitable prey (no California ground squirrels were observed, and only three old CAGS burrows were found), and golden eagles are expected to forage on the site rarely, if at all. |
| White-tailed kite (*Elanus leucurus*) | SP | Nests in tall shrubs and trees; forages in | **May be present as breeder.** White-tailed kites are common residents in open areas in the project |

| Name | Status | Habitat | Potential for occurrence on project site |
|---|---|---|---|
| | | grasslands, marshes, and ruderal habitats. | vicinity. Some of the larger trees along the project site (e.g., along the fence line) may provide suitable nesting habitat for this species. No white-tailed kites or nests of this species were observed on or adjacent the site during the May 2024 reconnaissance surveys; however, up to one pair of white-tailed kites may nest in trees on or adjacent the project site. Individuals may forage in open habitats on and adjacent to the site year-round. |

Key to Abbreviations: Status: Federally Endangered (FE); Federally Threatened (FT); Federally Proposed as Threatened [FT(P)]; Federal Candidate for Listing (FC); State Endangered (SE); State Threatened (ST); State Candidate for Listing (SC); State Fully Protected (SP); California Species of Special Concern (CSSC); Santa Clara Valley Habitat Plan Covered Species (VHP).

*Source: (H.T. Harvey and Associates 2024a)*

## Discussion

**a) Would the Project 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 Game or U.S. Fish and Wildlife Service?**

### Special Status Plant Species

#### *PWTP Site*

No, the project would not have the impact described. No special status plant species were observed within the project site during surveys during the appropriate blooming season in 2024 (H.T. Harvey and Associates 2024a). As such, Due to the absence of special-status plants from the project disturbance area, the project would have **no impact** on special status plants at the PWTP site.

#### *Off-site Staging Areas*

The project would have a less than significant effect on the impact described following the implementation of mitigation. Off-site staging in developed or disturbed sites would not impact special status plant species. Where there is vegetation, any removal of a special status plant species due to staging activities would be a significant impact. Accordingly, for off-site staging that contains vegetation, Mitigation Measure BIO-1 would be implemented. Mitigation Measure BIO-1 requires a pre-activity survey within any staging area that contains vegetation or habitat and avoidance of any special status species or habitats that occur in the area. Because special status plant species would be avoided if encountered, the impact would be **less than significant with mitigation**.

### Special-Status Wildlife – PWTP Site

Special-status species with a potential to occur on the project site are listed in Table 4.2-8. The probability of any special status wildlife species occurring on the project site is low considering the extent of development on the site and the surrounding area.

*VHP Covered Species*

The project would have a less than significant effect on the impact described. Northwestern pond turtle, California red-legged frog, burrowing owl, and tricolored blackbird are covered under the VHP. The PWTP is covered under the Santa Clara Valley Habitat Plan (VHP) and Valley Water has paid VHP permanent impact fees for the entire PWTP property. The project would need to comply with the conditions of the VHP relevant to the project. Specific conditions that would apply to the project include Condition 1, which requires that actions conducted under the Plan must comply with the provisions of the Migratory Bird Treaty Act (MBTA) and avoid killing or possessing covered migratory birds, their young, nests, feathers, or eggs; Condition 3, Maintain Hydrologic Conditions and Protect Water Quality which includes compliance with Valley Water stormwater management plan; and Condition 13, Serpentine and Associated Covered Species Avoidance and Minimization, which requires avoidance of serpentine grassland where feasible. Condition 13 includes the following requirements for impacts on serpentine grassland where avoidance is not feasible:

- Conduct surveys of the serpentine vegetation to inventory for covered species and evaluate habitat quality for covered species.
- For portions of the development area that are in Bay checkerspot butterfly habitat units identified in Appendix D, survey the site for the presence of larval host plants of Bay checkerspot butterfly. If larval host plants are found, conduct reconnaissance level surveys for adult butterflies during the peak of the flight period to determine species presence or absence.
- Locate the project footprint as far from the covered species or the highest quality serpentine habitat as is feasible. Utilize applicable buffers as identified in this chapter.
- If covered plants occur on the site and cannot be avoided, notify the Implementing Entity of the construction schedule so that plant salvage can be considered and potentially implemented (see Condition 19).

While the project includes grading within 0.09 acre of serpentine bunchgrass grassland, the project complies with the requirements of VHP Condition 13 because surveys were conducted of the serpentine grassland, no covered plants occur in the project site, and the project site does not contain habitat for Bay checkerspot butterfly. The project is also a replacement of existing infrastructure and the minor expansion of the access road would not substantially change habitat conditions in the area. As such, because the project would comply with the conditions of the VHP and the impacts on VHP covered species were previously addressed in the VHP Environmental Impact Report (EIR) and would be less than significant with implementation of VHP conditions, the impact on VHP covered species would be **less than significant**.

*Crotch's Bumble Bee*

The project would have a less than significant effect on the impact described following the implementation of mitigation. The project site contains burrows which could be habitat for Crotch's bumble bee. The habitat for Crotch's bumble bee on the project site is limited due to the presence of non-native grasses, and flowering plants are not abundant. However, small

numbers and individuals of Crotch's bumble bee may enter the site as foragers and the possibility that nesting could occur on the site cannot be ruled out. If a nest of Crotch's bumble bee were to occur in the project site, the impact from ground disturbing activities including excavation on Crotch's bumble bee would be significant. The project will implement Mitigation Measure BIO-2, which requires pre-construction surveys for Crotch's bumble bee if construction starts during the flight season and avoidance of any nest until the nest is no longer active. As such, because Crotch's bumble bee would be avoided with the implementation of Mitigation Measure BIO-2, the impact on Crotch's bumble bee would be **less than significant with mitigation**.

*Mountain Lion*

The project would have a less than significant effect on the impact described. The project site is not located within suitable breeding habitat for mountain lion and would have no impact on a mountain lion den. The project is located within the dispersal range of mountain lion. As such, because the project is located within the fenced PWTP and involves replacement of infrastructure within a developed area, the project impact on mountain lions would be **less than significant**.

*San Francisco Dusky Footed Woodrat*

The project would have a less than significant effect on the impact described following the implementation of mitigation. San Francisco dusky-footed woodrat is present within the PWTP site in proximity to the project site. If the project grading and roadway improvements required removal of a tree containing an active San Francisco dusky footed woodrat, the impact on San Francisco dusky footed woodrat would be significant. Mitigation Measure BIO-3 requires pre-construction surveys for dusky footed woodrats and avoidance of any active nests. As such, because any active nests of San Francisco dusky-footed woodrat would be avoided, the impact on San Francisco dusky footed woodrat would be **less than significant with mitigation**.

*American Badger*

The project would have a less than significant effect on the impact described. The project site contains grasslands, which are suitable foraging habitat for American badger. The project site does not contain suitable breeding habitat for American badger due to the existing level of disturbance, and development of the project would thus not impact any den of American badger. As such, the limited area of new grading and development within the PWTP site would not result in a substantial loss of foraging habitat/grassland for American badger, and the impact on American badger would be **less than significant**.

*Migratory Birds and Golden Eagle*

The project would have a less than significant effect on the impact described. With the exception of white-tailed kite, the project site does not provide breeding/nesting habitat for special status birds. The limited area of new pavement at the project site (less than 1 acre) would not cause a substantial loss of foraging habitat that would affect any migratory bird species or golden eagle. Additionally, construction-related noise, dust, and vibration could disrupt nesting behavior and young rearing of adjacent nests and potentially lead to reduced nest success and/or

abandonment. As part of the project, Valley Water would implement BMP BI-5, which requires nesting bird surveys and avoidance of any active nests as well as BMP BI-6, which allows for use of nest exclusion devices to prevent nesting. Valley Water would also implement Condition 1 of the VHP, which requires avoidance of any species protected under the MBTA. As such, the impact on migratory birds and golden eagles would be **less than significant** with implementation of Valley Water BMPs, and no mitigation is required.

**Special-Status Wildlife – Off-site Staging Areas**
The project would have a less than significant effect on the impact described following the implementation of mitigation. Off-site staging in developed or disturbed sites would not impact special status species. If staging occurs off-site in an area that contains vegetation, there is the potential for the area to contain special status wildlife. Impacts on any nest or den of a special status wildlife species from temporary staging activities would be significant. Loss of active nests would be considered a significant impact. Valley Water would implement BMP BI-5, which requires nesting bird surveys and avoidance of any active nests, as well as BMP BI-6, which allows for use of nest exclusion devices to prevent nesting. Valley Water would also implement Condition 1 of the VHP, which requires avoidance of any species protected under the MBTA. While the Valley Water BMPs would avoid significant impacts on migratory birds at off-site staging, the potential for impacts on other special status wildlife species remains. Mitigation Measure BIO-1 requires a pre-activity survey within any staging area that contains vegetation or habitat and avoidance of any suitable habitat for special status wildlife species that occur in the area. As such, because special status wildlife species would be avoided through avoidance of any suitable habitat areas, the impact would be **less than significant with mitigation**.

**b) Would the Project 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 Game or US Fish and Wildlife Service?**

**Riparian Areas**
***PWTP Site***
No, the project would not have the impact described. Riparian areas are not present on the project site or in proximity to the project site. As such, the project would **not impact** any riparian areas.

***Off-site Staging Areas***
The project would have a less than significant effect on the impact described following the implementation of mitigation. Off-site staging in developed areas would have no impact on riparian habitat. Off-site staging in undeveloped areas has the potential to encounter and impact riparian habitat. If the staging activity were to remove riparian vegetation, the impact would be significant. Mitigation Measure BIO-1 requires avoidance of riparian areas. As such, because the staging activities would avoid riparian habitat, the impact would be less than significant with mitigation.

**Sensitive Natural Communities**

***PWTP Site***

The project would have a less than significant effect on the impact described. Serpentine bunchgrass grassland is a sensitive natural community and occurs within the southwestern portion of the project site. Serpentine bunchgrass grassland is located within the extent of project grading as shown on Figure 4.2-5. The total area of project impact on serpentine bunchgrass grassland would be 0.21 acre, including 0.09 acre of access road intersection, 0.09 acre of grading intersection, and 0.03 acre of staging area intersection. The project is currently covered under the VHP. Valley Water would be required to comply with the conditions of the VHP during implementation of the project, including Condition 13 for serpentine bunchgrass grassland (Santa Clara Valley Habitat Agency 2012).

> "In cases where serpentine areas are part of a project site in a developed area, the project will be designed to preserve larger patches of serpentine outside the development area and limit impacts to the smallest patches feasible and to the edges of serpentine patches regardless of their size" (Santa Clara Valley Habitat Agency 2012).

The project grading would consist of a minor extension of grading within the existing PWTP site. The development would minimize impacts on serpentine bunchgrass to the extent feasible by locating development as an extension of the existing PWTP. Serpentine bunchgrass grassland located outside of the project site would not be impacted by project activities. As such, because the project is covered under the VHP and would comply with VHP conditions, which were determined to reduce impacts on biological resources to a less than significant level in the VHP EIR, the impacts of the project on serpentine bunchgrass grassland would be **less than significant**.

***Off-site Staging Areas***

The project would have a less than significant effect on the impact described following the implementation of mitigation. Off-site staging in developed areas would have no impact on sensitive natural communities. Off-site staging in undeveloped areas has the potential to encounter and impact sensitive natural communities. If the staging activity were to remove a sensitive natural community, the impact would be significant. Mitigation Measure BIO-1 requires avoidance of any sensitive natural communities. As such, because the staging activities would avoid sensitive natural communities, the impact would be less than significant with mitigation.

**Figure 4.2-5 Vegetation Communities on Project Site**

**c) Would the Project 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?**

**PWTP Site**
No, the project would not have the impact described. Federal and state protected wetlands are not present on the project site and as such, **no impacts** on wetlands would occur.

**Off-Site Staging Areas**
The project would have a less than significant effect on the impact described following the implementation of mitigation. Off-site staging in developed areas would have no impact on wetlands. Off-site staging in undeveloped areas has the potential to encounter and impact wetlands. If a wetland occurred within the offsite staging area, the impact of staging activities within the wetland would be significant. Mitigation Measure BIO-1 requires avoidance of any wetland areas within the staging areas. As such, because the staging activities would avoid wetlands, the impact would be less than significant with mitigation.

**d) Would the Project 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?**

**Wildlife Movement**
No, the project would not have the impact described. The project site is located within the PWTP and involves replacement of existing water treatment infrastructure. The project site is generally disturbed/developed and the PWTP property is fenced. As such, because the project site is currently developed and fenced, the project improvements at the PWTP would have **no impact** on wildlife movement.

**Wildlife Nursery Sites**
The project would have a less than significant effect on the impact described. The PWTP is not a wildlife nursery site. The project is located within the developed PWTP site, which contains water treatment infrastructure and on-going noise and disturbance from operation of the existing water treatment plant. While the project would involve grading into areas containing serpentine bunchgrass grassland, the area of grading is directly adjacent to the area of existing development which is subject to routine disturbance and noise from the existing PWTP operations. As such, because the area does not support wildlife nursery sites, the impact on a wildlife nursery site is **less than significant**.

**Offsite Staging Areas**
The project would have a less than significant effect on the impact described following the implementation of mitigation. The offsite staging activities would be temporary and would not affect a native or migratory wildlife corridor. Off-site staging in developed areas would have no impact on wildlife nursery sites. Off-site staging in undeveloped areas has the potential to impact a wildlife nursery site. If the staging activity were to occur in a native wildlife nursery

site, the impact would be significant. Mitigation Measure BIO-1 requires avoidance of any wildlife nursery sites. As such, because the staging activities would avoid native wildlife nursery sites, the impact would be less than significant with mitigation.

**e) Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

No, the project would not have the impact described. The Project site includes trees. The City of San Jose requires permits to remove street trees, heritage trees, ordinance-size trees, or any tree located on multifamily, commercial industrial, or mixed use property in a common area (City of San Jose, n.d.-b). While project grading or road improvements may require removal of trees, ~~N~~no street trees, heritage trees, or ordinance-sized trees occur in the project site and the project is not located on a multifamily, a commercial industrial or mixed use property or in a common area. ~~No trees would be removed for temporary staging activities.~~ As such, no tree removal permits would be required, and the project would not conflict with the City's tree removal requirements and **no impact** would occur.

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

**PWTP Site**

No, the project would not have the impact described. The Project site is within the planning area of the VHP (Santa Clara County Planning Office, n.d.), which is a Habitat Conservation Plan and Natural Community Conservation Plan. Santa Clara Valley Water District is a permittee under the VHP (ICF International 2012). Valley Water previously paid impact fees for the entire PWTP site including the project site. Valley Water would comply with all VHP conditions a) applicable to the proposed project activities as discussed in a) above. As such, the project would be consistent with the VHP and **no impact** would occur.

**Off-Site Staging Areas**

No, the project would not have the impact described. The Project site is within the planning area of the VHP (Santa Clara County Planning Office, n.d.), which is a Habitat Conservation Plan and Natural Community Conservation Plan. Santa Clara Valley Water District is a permittee under the VHP (ICF International 2012). Off-site staging would be a temporary activity and would not create any new infrastructure or land uses. Valley Water would also comply with all VHP conditions a) applicable to the proposed project activities. As such, the project would be consistent with the VHP and **no impact** would occur.

### Mitigation Measures

**Mitigation Measure BIO-1: Off-Site Staging Areas**

Valley Water shall conduct a pre-activity biological resource survey of any off-site staging area containing vegetation. The pre-activity survey will document the presence or absence of suitable habitat for special status plants and wildlife, riparian areas, sensitive vegetation

communities, or native wildlife nursery sites. Any suitable habitat for special status plants or wildlife, riparian areas, sensitive vegetation communities, wetlands, or wildlife nursery sites within the staging area shall be delineated for avoidance by staging activities. If any breeding activity for special status wildlife species is observed within or in proximity to the staging area, a no activity buffer from the special status species shall be defined by a qualified biologist. Staging activities shall not be allowed within the no activity buffer until the nesting activity has ceased as documented by a qualified biologist.

**Mitigation Measure BIO-2: Crotch's Bumble Bee Avoidance**
Two nesting surveys shall be conducted for Crotch's bumble bee with focus on detecting active nesting colonies within one week and 24-hours immediately prior to ground disturbing activities during the flight season (February to October). If an active Crotch's bumble bee nest is detected, an appropriate no disturbance buffer zone (including foraging resources and flight corridors essential for supporting the colony) shall be established around the nest to reduce the risk of disturbance or accidental take. Nest avoidance buffers may be removed at the completion of the flight season and/or once the qualified biologist deems the nesting colony is no longer active and CDFW has provided concurrence of that determination. If no nests are found but the species is present, a full-time qualified biological monitor shall be present during vegetation removal or ground disturbing activities that are scheduled to occur during the queen flight period (February through March), colony active period (March through September), and/or gyne flight period (September through October).

**Mitigation Measure BIO-3: San Francisco Dusky Footed Woodrat Avoidance**
A preconstruction survey will be performed by a qualified biologist within seven days prior to the start of ground-disturbing activities to identify the locations of active San Francisco dusky-footed woodrat nests within the project boundary. Any woodrat nests detected will be mapped and flagged for avoidance by the qualified biologists. If active nests are determined to be present, avoidance measures will be implemented first. Because San Francisco dusky-footed woodrats are year-round residents, avoidance mitigation is limited to restricting project activities to avoid direct impacts to San Francisco dusky-footed woodrats and their active nests to the extent feasible. A minimum 10-foot buffer should be maintained between project construction activities and each nest to avoid disturbance. In some situations, a smaller buffer may be allowed if, in the opinion of the qualified biologist, removing the nest would be a greater impact than that anticipated as a result of project activities.

If an unoccupied woodrat nest is found within the site and it cannot be avoided, the nest should be disassembled by hand by the qualified biologist. The nest materials should be relocated off site outside of the wildlife exclusion fencing to prevent rebuilding. If occupied nests are found within the site, and a litter of young is found or suspected, the nest shall be left alone for two to three weeks before a recheck to verify that young are capable of independent survival before proceeding with nest dismantling. Dismantling shall be done by hand, allowing any animals to escape either along existing woodrat trails or toward other available habitat. Valley Water will notify CDFW of any nests, unoccupied or occupied, before they are dismantled.

### 4.2.5 Cultural Resources

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **5. 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 formal cemeteries? | ☐ | ☐ | ☒ | ☐ |

#### Environmental Setting

**Record Search**

Far Western completed a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System on July 31, 2023 (IC File No.: 23-0030). The archaeological inventory Study Area included the existing PWTP site and a quarter-mile buffer surrounding the site's perimeter, totaling approximately 21 acres. The archaeological inventory included a review of background information relevant to the Study Area, a records search, archival review, assistance for Native American outreach, and a geoarchaeological buried site sensitivity analysis, which includes the Study Area and the surrounding quarter-mile buffer (Far Western Anthropological Research Group, Inc. 2023). The records search identified 44 prior cultural resources studies within the records search area. These past studies documented one cultural resource, a precontact human burial site with four known burials, approximately 672 feet west of the project site (Far Western Anthropological Research Group, Inc. 2023).

**Field Survey**

A site survey of the project site was conducted by Far Western Anthropological Research Group on May 6, 2024. The survey encompassed all areas of potential disturbance within the PWTP site and staging areas on Valley Water property directly west of the PWTP. Designated archaeologists conducting the survey examined areas for any indication of cultural materials. No cultural resources were identified within the Study Area (Far Western Anthropological ResearchGroup, Inc. 2024). No cultural resources were recorded on the project site during the field survey. In addition, none of the existing buildings on the PWTP site qualify as historical structures (Far Western Anthropological ResearchGroup, Inc. 2024).

**Archaeological Sensitivity**

To assess the potential for buried archaeological deposits within the survey area, a sensitivity study was conducted that considers factors that either encouraged or discouraged human use or occupation of certain landforms (i.e., age, geomorphic setting, distance to water and other

resources), combined with those that affected the subsequent preservation of those landforms (i.e., erosion or burial).

The project site has a low sensitivity for buried resources and a high sensitivity for surface resources near the flocculation/sedimentation basins. However, given previous development in this area for the existing PWTP, the probability of identifying unknown precontact resources in this location is low.

### Discussion

**a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to section 15064.5?**

CEQA Guidelines section 15064.5 requires the Lead Agency to consider the effects of a project on historical resources. *Historical resource* is defined as any building, structure, site, object, or district listed in or determined to be eligible for listing in the California Register of Historical Resources (California Register) or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California. The following discussion focuses on architectural and structural resources. Archaeological resources, including archaeological resources that are potentially historical resources according to Section 15064.5, are addressed under impact discussion b, below.

**Project Site**

No, the project would not have the impact described. Based on the results of the record search and field survey, the project site does not contain any historic resources. As such, the project would therefore not impact any historic resources, and **no impact** would occur.

**Off-site Staging Area**

The project would have a less than significant effect on the impact described following the implementation of mitigation. Off-site staging in previously developed or disturbed areas would have no impact on historic resources. If off-site staging occurs in an undeveloped area, there is the potential that the staging activities could affect historical resources. The impact on historical resources would be potentially significant. Mitigation Measure CUL-1 requires a pre-construction survey of any undeveloped off-site staging area and avoidance of any historic resources documented within the staging area. Historic resources within any undeveloped off-site staging area would be identified for protection by a pre-construction survey and therefore would not be disturbed by project construction. As such, the impact of off-site staging on historical resources would be **less than significant with mitigation**.

**b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?**

This section discusses archaeological resources, both as historical resources according to section 15064.5, as well as unique archaeological resources as defined in section 21083.2(g). A significant impact would occur if the project would cause a substantial adverse change to an

archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

**Project Site**
The project would have a less than significant effect on the impact described. The project would not impact any known archaeological resources due to the absence of archaeological resources in the project site according to both the record search results and field survey results. The project involves excavation in areas that are currently developed and, while the potential to encounter archaeological resources is low, unanticipated discovery of archaeological resources cannot be completely ruled out. Inadvertent disturbances of archaeological resources could impact such resources. To minimize potential impacts on previously undiscovered archeological resources, Valley Water would implement BMP CU-1, which requires avoidance measures and appropriate treatment of archaeological resources if they are discovered during project construction. As such, with implementation of BMP CU-1, impacts associated with the unanticipated discovery of archaeological resources during project construction would **be less than significant.**

**Off-Site Staging Areas**
The project would have a less than significant effect on the impact described following the implementation of mitigation. Off-site staging in previously developed or disturbed areas would have no impact on historic resources. Off-site staging in undeveloped areas has the potential to affect archaeological resources. The impact on archaeological resources would be potentially significant. Mitigation Measure CUL-1 requires a pre-construction survey of any undeveloped off-site staging area and avoidance of any archaeological resources documented within the staging area. As such, the impact of off-site staging on archaeological resources would be **less than significant with mitigation**.

**c) Would the Project disturb any human remains, including those interred outside of formal cemeteries?**

**Project Site**
The project would have a less than significant effect on the impact described. One burial has been recorded within 0.25 mile of the project site. The burial was 670 feet from the project site, and the burial is not anticipated to extend into the project site. While there are no records of burials within the project site, there remains a low potential for the project excavation to disturb human remains. To minimize impacts associated with the inadvertent discovery and disturbance of buried human remains, Valley Water would implement BMP CU-1 which requires avoidance measures and appropriate treatment of archaeological resources, including human remains during project construction. As such, with implementation of BMP CU-1, impacts associated with the inadvertent discovery and disturbance of buried human remains would **be less than significant**.

**Off-site Staging Areas**
Staging activities do not involve excavation and would not disturb human remains.

### Mitigation Measures

**Mitigation Measure CUL-1 Pre-Activity Survey of Off-Site Staging Area**: Prior to use of any undeveloped off-site staging area, a qualified archaeologist shall conduct a pedestrian cultural resource survey of the staging area. If any archaeological resources including historic era or pre-contact resources are identified within the staging area, an environmentally sensitive area, including a minimum 15-foot buffer from the outer limits of any cultural resource, shall be delineated and excluded from staging activities. The environmentally sensitive area shall be staked and marked for avoidance to ensure avoidance of damage to cultural resources.

### 4.2.6 Energy

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **6. ENERGY. Would the project:** | | | | |
| a) Result in a 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 Setting

In 2020, California's energy mix totaled approximately 272,576 gigawatt hours (GWh) of electricity, of which 70 percent was from in-state electricity generation and the remaining was imported from the northwestern and southwestern United States (U.S.). About 37 percent of the total energy used in California was produced by natural gas, with other sources including solar (13 percent), hydroelectric (12 percent), wind (11 percent), nuclear (9 percent), and coal (less than 3 percent). The remaining energy was produced by other sources such as geothermal and biomass sources (California Energy Commission, n.d.).

Valley Water buys electricity from the Power and Water Resources Pooling Authority (PWRPA) using the PG&E power network to supply energy to Valley Water's treatment plants. The PWRPA is subject to the State of California Renewables Portfolio Standard (RPS) mandate whereby electric utilities must serve an RPS percentage of retail sales with renewable resources within a given compliance period. The solar PV systems at Valley Waters treatment plants, including at PWTP, contribute to the sale of solar energy to meet the PWRPA RPS requirements. PWTP produces around 409 MWh of solar energy annually (Valley Water 2015).

Valley Water's Climate Change Action Plan (CCAP) also builds on its existing climate change efforts by identifying the ways in which Valley Water is vulnerable to climate change and providing goals, strategies, and possible actions (Santa Clara Valley Water District [Valley Water] 2021). Applicable goals include reducing direct GHG emissions (e.g., by increasing fleet fuel efficiency), expanding renewable energy, improving energy efficiency, and reducing indirect GHG emissions. Valley Water has been successful in achieving carbon neutrality since 2014. Each subsequent year, Valley Water's quantity of offset or sequestered emissions have been greater than the quantity of reported emissions (Santa Clara Valley Water District [Valley Water] 2021)

## Discussion

**a) Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?**

### Construction

The project would have a less than significant effect on the impact described. Construction of the project would require the use of fuels (primarily gasoline, diesel, and motor oil) for excavation, grading, and vehicle travel. Fuel would be used for construction worker commute trips, for material hauling trips to and from the project site including from off-site staging areas, and by construction equipment. Energy also would be used indirectly for production of construction materials.

Although the precise amount of construction energy consumption is uncertain, use of fuels would be consistent with typical construction and manufacturing practices. Fuels would not be used wastefully because doing so would not be economically sustainable for contractors. Fuel consumption by construction vehicles and equipment would comply with federal and State standards for vehicle fuel efficiency because all vehicles and machinery that are sold in the U.S. and used in California must meet such standards[2]. Construction activities would minimize energy use as much as possible. Project construction impacts related to energy use and impacts on energy resources would not be wasteful, inefficient, or unnecessary, and the impact would be **less than significant**.

### Operation

The project would have a less than significant effect on the impact described. Operation of the project would have a total estimated increase in the PWTP energy use of 300,000 kilowatt hours (kWh) annually relative to existing operating conditions. Because the project would result in increased efficiency in dewatering of solids, the number of trucks required for hauling of the dewatered solids would decrease due to the dryer and more concentrated solids for hauling.

Although the project would require additional energy annually for operation and maintenance, the energy use would improve the efficiency of the overall treatment process at PWTP and would increase the dewatering of solids, which is more efficient in the long term. With the exception of the emergency standby generator, which would only be used when line power is not available, the operational energy for the project would be supplied from the PWRPA. The

[2] On July 26, 2007, the CARB adopted the Regulation for *In-Use Off-Road Diesel-Fueled Fleets* (Off-Road Diesel Regulation) to reduce diesel particulate matter (PM) and oxides of nitrogen (NOx) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. The Off-Road Diesel Regulation imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; requires all vehicles to be reported to CARB in the online reporting system, DOORS, and labeled; restricts the adding of older vehicles into fleets starting on January 1, 2014; and requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies, VDECS (i.e., exhaust retrofits) (CARB, n.d.).

energy purchased from the PWRPA for the project will continue to become more efficient and use increased renewable energy to meet RPS mandates over time. Valley Water will also continue to contribute solar energy to the PWRPA, including energy produced at the PWTP. Thus, the increase in energy use by the project would not be wasteful, inefficient, or unnecessary, and the impact would be **less than significant**.

**b) Would the project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?**

The project would have a less than significant effect on the impact described. Applicable plans for renewable energy and energy efficiency include the CARB 2022 Scoping Plan Update (CARB 2022), Valley Water's CCAP and Ends Policies.

The CARB 2022 Scoping Plan Update (CARB 2022) focuses on transportation, electricity generation, manufacturing, and natural and working lands. The project would neither involve an increase in new vehicle trips nor propose any land use change that would result in an increase in vehicle trips, such as urban sprawl, and would not conflict with the CARB 2022 Scoping Plan Update. The project would result in increased efficiency in operation including increased dewatering of solids, which would reduce the amount of truck hauling required during the operational life of the project.

Valley Water's CCAP and Ends Policies focus on reducing energy and emissions from Valley Water as an organization. In accordance with the CCAP and Ends Policies, Valley Water implements actions such as increasing fleet efficiency, increasing use of renewable energy, reducing vehicle travel, and encouraging use of efficient equipment. These actions would extend to the vehicles and equipment used for the project, energy used at the PWTP facility, and construction and maintenance practices by Valley Water or contractors. The PWTP site contains PV panels that generate renewable energy to offset Valley Water's energy use. The PV panels at the PWTP would not be impacted by the project, and the project would not conflict with production of renewable energy on the PWTP site.

The CCAP complements and supports California's targets for renewable energy use and GHG emissions reductions. Therefore, implementation of the project would not conflict with the Valley Water CCAP or State plans for renewable energy or energy efficiency and the impact would be **less than significant**.

### Mitigation Measures

No mitigation required**.**

### 4.2.7 Geology and Soils

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **7. 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 offsite 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 wastewater disposal systems where sewers are not available for the disposal of wastewater? | ☐ | ☐ | ☐ | ☒ |
| f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☒ | ☐ | ☐ |

## Environmental Setting

### Geotechnical Investigation

A project-specific geotechnical investigation was conducted within the project site in 2023. The discussion of geologic conditions and hazards present within the project site is derived from the *Geotechnical Report for Final Design*. The geotechnical investigation report is provided in Appendix D.

### Geology

The project site is located in the Coast Range geomorphic province of California. The Coast Range forms a nearly continuous topographic barrier between the California coastline and the San Joaquin Valley.

The project site is underlain by quaternary age landslide deposits due to landslides in the project site and surroundings (see discussion under "Landslide," below). The Quaternary age landslide deposits at the project site comprise locally derived bedrock materials that range from rubble to nearly intact rock displaced downslope by slumping and sliding (Kleinfelder, Inc. 2023).

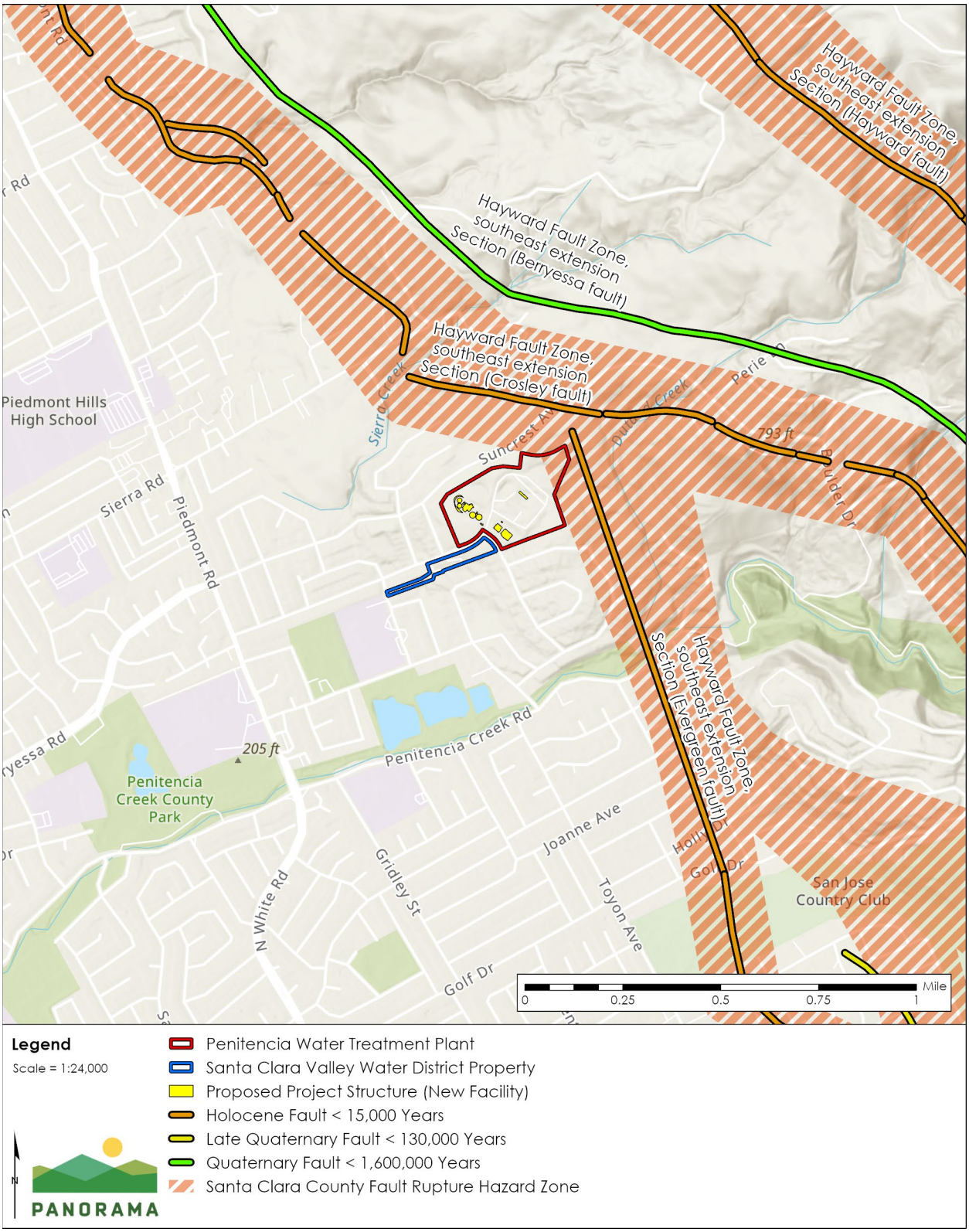
### Seismicity

The following section describes several aspects of seismicity, including ground shaking, liquefaction, landslide, slope failure, and lateral spreading.

#### *Ground Shaking*

The San Francisco Bay Area is situated in one of the most geologically active regions in North America. The nearest zoned active fault as defined by the California Geological Survey and in accordance with the Alquist-Priolo Earthquake Fault Zone Act of 1972 is the Crosley trace of the Hayward fault zone, located approximately 0.2 mile north of the project site Figure 4.2-6. Surface rupture occurs when the ground surface is broken due to fault movement during earthquakes. Such hazards generally occur in the vicinity of an active fault trace. The project site is located approximately 570 feet south and 570 feet west of the Santa Clara County Fault Rupture Hazard Zone boundary for the Hayward fault (i.e., outside the zone of County ordinance required investigation) (California Department of Conservation (CDOC), n.d.-a; Kleinfelder, Inc. 2023; Santa Clara County, n.d.).

**Figure 4.2-6 Faults and Fault Hazard Zones**



Seismic risk is not isolated to active faults within a project site; ground shaking could result from displacement of other major regional faults (i.e., Central Calaveras and San Andreas faults). The chance of a magnitude 6.7 or larger earthquake to occur in the greater Bay Area within the next 30 years is 72 percent (U.S. Geological Survey (USGS), n.d.-b). Earthquakes of magnitude 6.7 or larger are capable of causing considerable damage depending on epicenter proximity. The Hayward fault system near the project site is capable of producing an earthquake larger than 7.0 magnitude, which would cause severe shaking (Metropolitan Transit Commission [MTC] and Association of Bay Area Governments [ABAG], n.d.).

***Liquefaction***

Soil liquefaction is a phenomenon that occurs when saturated sandy or silty soils lose strength during cyclic loading, such as that caused by earthquakes. During the loss of strength, the soil acquires mobility sufficient to permit both horizontal and vertical movements, essentially behaving like a liquid. The factors known to influence liquefaction potential are soil type and depth, grain size, density, groundwater level, degree of saturation, and both the intensity and duration of ground shaking. According to the CDOC, the project is not located on or near a liquefaction zone (California Department of Conservation, n.d.-b). The geotechnical investigation also indicated that the potential for liquefaction and seismically-induced ground failure is low based on relative density, soil type, and groundwater levels encountered in the borings drilled for the study (Kleinfelder, Inc. 2023).

***Landslide***

The term *landslide* describes a wide range of ground movements, such as rock falls, deep failure of slopes, and shallow debris flows (USGS, n.d.). Landslide movements are interpreted from the geomorphic expression of the landslide deposit and source area and are categorized as falls, topples, spreads, slides, or flows (CDOC, n.d.)

The project site is located within a landslide zone, according to the CDOC, and within an area considered to have the largest and most concentrated area of landslides in the landslide hazard area according to the Municipal Transportation Commission/Association of Bay Area Governments (MTC/ABAG) (CDOC, n.d.-b; MTC and ABAG, n.d.). The entire PWTP is located within the large and deep-seated Penitencia Creek Landslide (PCL). The PCL occupies about 240 acres at the base of the eastern foothills of the Santa Clara Valley. Based on monitoring and analysis of the PCL, approximately 12 inches of creep movement is expected to occur at the project site over the 50-year life of the project. Additional geotechnical evaluation and modeling of seismic induced landslides at the project site indicate that seismic creep of up to 4 feet is possible in a seismic-induced landslide (ENGEO 2024).

***Lateral spreading***

Lateral spreading can occur on flat or gently sloping ground, but it usually induced from liquefaction. Because the project site is at low risk of liquefaction, it is unlikely that lateral spreading would occur.

**Soils**

According to the Natural Resources Conservation Service (NRCS), the project site is predominantly within Montara-Santerhill complex, 15 to 30 percent slopes (NRCS 2023). The geotechnical investigation borings at the project site found that within the upper 20 to 30 feet below ground surface, the project site is underlain by predominantly very stiff fat and lean clay with varying amounts of sand and gravel (ENGEO 2024).

***Expansive Soil***

Expansive soils undergo volume changes (shrinkage and swelling) with changes in moisture content. The shrinking and swelling cycles have the potential to cause distress and damage to structures that are constructed on or within expansive soils unless mitigation measures are implemented. Laboratory testing results indicate that the shallow soil at the project sites generally has a plasticity index (PI) between 22 and 47. PI between 25 and 35 is considered highly expansive, and a PI above 35 is considered critically expansive. Expansive soil shrinks and swells when subjected to fluctuations in moisture content. Expansive soils can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations (ENGEO 2024). Recent geotechnical borings encountered highly plastic clays (plasticity index greater than about 15) in the upper approximately 5 to 15 feet of the soil profile, with measured liquid limits of 52 to 68 and plasticity index ranging from 34 to 47. Within one of the borings on the western end of the project site, potentially expansive clay soils extends to a depth of about 29 feet below ground surface (Kleinfelder, Inc. 2023).

***Subsidence and Collapse***

Subsidence occurs when a large land area settles because of over-saturation or extensive withdrawal of groundwater, oil, or natural gas. These areas are typically composed of open -textured soils high in silt or clay content that become saturated. Groundwater was not encountered during the geotechnical investigation, which was conducted to the maximum depth of about 50 feet below ground surface. A groundwater level measurement in 1993 from a piezometer located on the northeast side of the solid handling and dewatering facilities indicated a groundwater level of about 92 feet below ground surface. Groundwater conditions at the site could change due to variations in rainfall, groundwater withdrawal or recharge, construction activities, well pumping, or other factors not apparent at the time the explorations were performed (Kleinfelder, Inc. 2023). Because there is no groundwater pumping at the site, the risk of subsidence is considered low.

**Paleontological Resources**

*Paleontological resources* are defined as fossilized remains of vertebrate and invertebrate organisms, fossil tracks, and plant fossils. In California, paleontological resources are generally observed in sedimentary and metasedimentary deposits. Based on a database query of the University of California Museum of Paleontology in search of paleontological discoveries, 191 recorded collections are known from Santa Clara County, 30 of which are from Quaternary era geologic units (University of California Museum of Paleontology Localities (UCMP), n.d.). The fill soils within the project site are imported and have no potential to contain paleontological resources.

### Discussion

In 2015, the California Supreme Court in *California Building Industry Association v. Bay Area Air Quality Management District* (CBIA v. BAAQMD, 2015, 62 Cal.4th 369) held that CEQA generally does not require a lead agency to consider the impacts of existing environmental conditions on the future occupants or users of a project. However, if a project could exacerbate pre-existing environmental hazards or conditions, the lead agency must analyze the impact of that exacerbated condition on the environment, which may include future occupants and users within the project site.

**a) Would the project 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?**

**PWTP Site**

The project would have a less than significant effect on the impact described. The project site is not located within a fault rupture hazard zone or within an active fault zone. The Santa Clara County Fault Rupture Hazard Zone is located 570 feet south and 570 feet west of the project site. Although fault rupture is not necessarily bound by the limits of a fault hazard zone and movement along an unknown fault is possible, it is considered unlikely to occur in areas outside of the mapped fault rupture hazard zone, and the possibility of surface fault rupture at the project site is low. Therefore, based on the locations of known faults relative to the project location, the potential for fault rupture to directly or indirectly cause substantial adverse effects at the project site, including the risk of loss, injury, or death would be **less than significant**.

**Off-site Staging Area**

The project would have a less than significant effect on the impact described. There is a possibility that an off-site staging area could occur within a fault rupture zone because there are fault rupture zones within 10 miles of the project site. Temporary staging activities would be temporary and would not involve any earth disturbance or introduce any new land uses. Temporary staging activities would thus not cause potential substantial adverse effects such as loss, injury, or death as a result of fault rupture and the impact would be **less than significant**.

**ii. Strong seismic ground shaking?**

**Construction**

The project would have a less than significant effect on the impact described. As described above, the project is in a seismically active area and there is high probability of a 6.7 magnitude earthquake occurring during the lifetime of the project, including during construction. In the event of an earthquake occurring during construction of the project, the construction workers could be exposed to hazards from strong seismic ground shaking. Construction workers would be required to be comply with federal and state occupational safety standards and laws that minimize worker safety risks from both physical and chemical hazards in the workplace, including during emergency situations such as earthquakes. Because construction workers

would receive training to address earthquake hazards, the impact during construction would be **less than significant**.

**Operation**

The project would have a less than significant effect on the impact described. Moderate to major earthquakes generated on the Hayward, San Andreas, and other faults in the region can be expected to cause strong ground shaking at the project site (Kleinfelder, Inc. 2023). The project would be designed and constructed to comply with all applicable federal, State, and local requirements and seismic design criteria. Compliance with California Building Code seismic standards would ensure the project facilities are designed to withstand the seismic hazards present in the project site. As a result, the project would not expose people or structures to substantial adverse effects, including the risk of loss, injury, or death from ground shaking. Additionally, the project facilities are primarily subsurface and located a minimum of 80 feet from the nearest private property line. The project site is fenced and restricted from public access, which reduces the risk of project impacts on people or structures from seismic ground shaking. Therefore, the exposure of people or structures to potential substantial adverse effects due to strong seismic ground shaking would be **less than significant**.

#### iii. Seismic-related ground failure, including liquefaction?

**Construction**

The project would have a less than significant effect on the impact described. The project site is located in an area where liquefaction potential is low. Off-site staging areas could be located in areas with moderate or high liquefaction potential. Due to the temporary nature of off-site staging activities and because off-site staging would not create any new structures, the impact of off-site staging activities on liquefaction risk would be **less than significant**.

**Operation**

The project would have a less than significant effect on the impact described. Structures founded on or above potentially liquefiable soils may experience bearing capacity failures due to the temporary loss of foundation support and vertical settlements, which can experience ground failure including liquefaction during seismic events. Based on conditions from the geotechnical investigation conducted within the project site, the potential for liquefaction and seismically induced ground failure at the project site is considered low. Due to the low risk of liquefaction or seismically induced ground failure at the project site, the project would not expose people or structures to substantial adverse effects from seismic-related ground failure and liquefaction and the impact would be **less than significant**.

#### iv. Landslides?

**Construction**

***PWTP Site***

The project would have a less than significant effect on the impact described. The project site is located within a large landslide feature. Construction of the project would require excavation up to 35 feet below grade during construction of the solids storage basins and the washwater

equalization basins. The entire PWTP is situated on the large deep-seated PCL that has experienced ongoing slow and relatively steady creep movement since the construction of the PWTP in the 1970s. The PCL creep movement has been monitored by Valley Water and landslide displacement of up to 2.2 feet could occur at the project site (for a seismic event with a 5 percent probability in a 50-year period). Differential lateral movement within the project site, such as beneath new facility foundations, or between adjacent facilities that have structural, pipeline, or other utility connections could be as high as 6 inches over the project site with differential vertical movement of 0.5 inch over a 50-foot span. While the seismic induced landslide has the potential to affect the project site, project construction would not affect or exacerbate the existing landslide underlying the project or increase the risk of seismic induced landslide. Because construction of the project would not exacerbate the risk of seismic induced landslide and the project construction methods incorporates geotechnical recommendations, the impact from a seismic induced landslide during construction would be **less than significant**.

***Off-site Staging Areas***

The project would have a less than significant effect on the impact described. Off-site staging areas have the potential to be located on areas with high landslide hazard potential. Due to the temporary nature of the staging activities and the lack of any excavation or introduction of new structures to the staging area, the use of the staging area would not increase the risk of landslides. The impact on landslides would thus be **less than significant**.

**Operation**

The project would have a less than significant effect on the impact described. The project structures would be located on a deep-seated landslide over the operational life of the facilities as discussed above. The differential vertical movement of 2.2 feet over the project site in the event of a seismic induced landslide has the potential to damage project structures (ENGEO 2024). The geotechnical investigation includes recommendations for over excavation, use of engineered fill material below the new structure foundations, use of slab or mat foundations, use of spread footings, and shear keys to address the risk of seismic induced landslide over the project site and protect the new project infrastructure (ENGEO 2024). The project design will incorporate the recommendations of the geotechnical investigation in compliance with current California Building Code standards. Because the project design will reflect decades of study of the PCL underlying the project site and will incorporate modern engineering standards to address the risk of seismic induced landslides, the project will overall reduce the potential for a seismic induced landslide when compared to the existing infrastructure that was constructed prior to modern design principals and understanding of the landslide risk. In addition, the presence of the project infrastructure would not exacerbate the risk of a seismic-induced landslide and would not expose any structures or people off site to impacts from seismic-induced landslides. Due to proper design of the project facilities to address the potential for seismic-induced landslides, the project would not expose people or structures to substantial adverse effects, including the risk of loss, injury, or death from landslides and the impact would be **less than significant**.

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

**Construction**

The project would have a less than significant effect on the impact described. Construction activities associated with the project would require ground disturbing activities such as excavation, trenching, and grading that could increase the susceptibility of soils to erosion by wind and/or water, which could result in soil loss or erosion.

The project is required to comply with the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance (Order No. 2022-0057-DWQ – Construction General Permit), which requires preparation of a Storm Water Pollution Prevention Plan (SWPPP). Construction contractor(s) are responsible for the design and implementation of the SWPPP throughout the construction period. As described in the project description, the project would implement BMPs described in Table 2.7-1 to avoid and minimize impacts on water quality and soil erosion. The project would implement BMPs WQ-4, WQ-5 WQ-9, WQ-11 and WQ-16. BMP WQ-4 would ensure that staging and stockpiled materials are properly contained and maintained to avoid any soil erosion from stockpiles, including impacts at any off-site staging areas. BMPs WQ-5, BMP WQ-9, BMP WQ-11, and BMP WQ-16 would ensure that the overall construction site is properly maintained and in clean condition and that construction entrances/exits and all other disturbed ground would be stabilized to prevent sedimentation or erosion. With the implementation of the required BMPs in addition to implementation of the SWPPP, the impacts related to soil erosion or loss of topsoil would be **less than significant**.

**Operation**

The project would have a less than significant effect on the impact described. After construction of the project is complete, the areas of temporary soil disturbance would be stabilized as required by the Construction General Permit and project-specific SWPPP. Landscaping would also be installed around the project site at the end of construction. Additionally, the project would comply with provision C.3 of the Municipal Regional Permit (MRP), which requires that new and redeveloped projects include measures to both treat and prevent increases in stormwater runoff. By complying with the requirement in provision C.3 of the MRP, the project would avoid substantial soil erosion and loss of topsoil. The project operations would not substantially impact soil erosion or topsoil loss. Regardless, the project would still implement BMP WQ-9, which requires that all disturbed areas shall be seeded with native seed as soon as is appropriate after activities are complete. Through compliance with the Construction General Permit, C.3 of the MRP, and BMP WQ-9, the proposed project is required to stabilize disturbed soil areas to prevent soil erosion from occurring during storm events after construction is complete. Therefore, there would be no exposed or disturbed soil during the operational phase of the project that would allow for substantial soil erosion or topsoil loss to occur. Accordingly, the impacts of soil erosion and topsoil loss during the operation and of the project would be **less than significant**.

**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 offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?**

**Construction**

***PWTP Site***

The project would have a less than significant effect on the impact described. The project site is on sloped land and within a landslide zone. The project site is not located in an area of high risk for liquefaction, lateral spreading, subsidence, or collapse. According to the geotechnical report, the potential active sliding plane underlying the project site is situated well below the proposed excavation depth for the replacement and upgrade of the existing facilities (Kleinfelder, Inc. 2023). As such, the impact would be **less than significant**.

***Off-site Staging Areas***

The project would have a less than significant effect on the impact described. Off-site staging activities could be located in areas that have a risk for landslide, lateral spreading, subsidence, liquefaction, or collapse. The temporary staging of construction equipment and materials at the off-site staging areas would not increase the risk of any geological hazard occurring on the site. As such, the impact would be **less than significant.**

**Operation**

The project would have a less than significant effect on the impact described. The geotechnical report indicated that the project site is not at risk for lateral spreading, subsidence, liquefaction or collapse. See the discussion under impact a(iv) for landslide impacts. Any potential impacts related to geological instability including lateral spreading, subsidence, liquefaction, or collapse would be addressed by the project design as the facilities would be designed to meet California Building Code seismic design criteria. Therefore, impacts related to soil instability resulting in landslide, lateral spreading, subsidence, liquefaction, or collapse would not be substantial as a result of implementation of the project. The impact would be **less than significant**.

**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?**

The project site is located in an area dominated by Montara-Santerhill complex, with 15 percent to 30 percent slopes (NRCS 2023), which is considered an expansive soil. Engineered fill soils were observed within the project site during geotechnical investigation at depths up to 29 feet. (Kleinfelder, Inc. 2023).

**Construction**

***PWTP Site***

The project would have a less than significant effect on the impact described. The project site contains highly and critically expansive soils (ENGEO 2024). Expansive soil shrinks and swells when subjected to fluctuations in moisture content. Such soil movement may cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. As described in the project description, the excavation depths for the project facilities would extend up to 35 feet deep. The construction phase involves excavation of expansive soil materials,

allowing for more stability at the site. Therefore, the project would not exacerbate or create a risk to life or property from expansive soils as the expansive soils would be excavated. As such, impacts related to expansive soil during construction would be **less than significant**.

*Off-site Staging Areas*

No, off-site staging would not have an impact related to expansive soils. Temporary staging of materials within off-site staging area has the potential to occur in areas that have expansive soils. The temporary staging of materials would not introduce any new structures within areas containing expansive soils. The staging of materials would thus not affect any expansive soils. As such, there would be no impact related to expansive soils.

**Operation**

The project would have a less than significant effect on the impact described. The project would construct facilities in areas containing expansive soil material. The geotechnical investigation recommends over excavation of potentially expansive subgrade soil and replacement with compacted non-expansive fill and moisture conditioning for below-grade structures. The geotechnical report also provides recommendations for the foundations and subgrade preparation for the centrifuge building, the solids load-out structure, and the sludge transfer pump station structure to address impacts from expansive soils on those structures. The project facilities are primarily subsurface and located a minimum of 80 feet from the nearest private property line. The project site is fenced and restricted from public access, which reduces the risk of project impacts on people or structures. Because the project would implement geotechnical design measures to protect the structure integrity and there is no public access to the facility, the impacts from expansive soils would be **less than significant**.

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

No, the project would not require the use of a septic or other alternative wastewater system. Therefore, there would be **no impact** related to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.

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

**Construction**

The project would have a less than significant effect on the impact described with implementation of mitigation. There are no known paleontological resources or unique geologic features at the proposed project site. Most of the site was previously disturbed for construction of the existing PWTP facilities, and imported fill soils were detected at depths up to 29 feet. Temporary staging activities would have no impact on geological resources as no excavation into geologic units that could contain paleontological resources would be required for temporary staging activities. The imported fill soils within the PWTP stie have no potential to contain paleontological resources. Nonetheless, the project would involve excavation up to 35 feet into geologic units, which have the potential to contain paleontological resources. Paleontological resources could be encountered during excavation. Directly or indirectly destroying a unique paleontological resource would constitute a significant impact. To reduce

the impact of a discovered paleontological resource, MM GEO-1 would be implemented and requires that construction crews receive environmental awareness training for paleontological discovery and protocols. In addition, it requires that in the event of an accidental discovery, work must halt and the find must be evaluated by a qualified paleontologist, who will determine appropriate treatment for the find. With implementation of MM GEO-1, potential impacts to paleontological resources or a unique geologic feature would be reduced to **less than significant with mitigation**.

**Operation**

No, the project would not have the impact described. During the operation of the project, no excavation or ground disturbance would occur. Without any excavation or ground disturbance proposed during operation of the project, no paleontological resource, site or unique geologic feature could be directly or indirectly destroyed. As such, **no impact** would occur.

### Mitigation Measures

**MM GEO-1: Unanticipated Discovery of Paleontological Resources**

Preconstruction worker awareness training will be conducted for the awareness and accidental discovery of paleontological resources during construction. If paleontological resources are discovered during construction, all work must halt within a 100-foot radius of the discovery, and a qualified paleontologist will be retained to evaluate the find. The paleontologist shall notify Valley Water if the find is significant. The paleontologist shall evaluate the significance of the find and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The qualified paleontologist will evaluate the significance of the find and recommend appropriate measures for the disposition of the find (e.g., fossil recovery, curation, data recovery, monitoring). Construction activities may continue on other parts of the construction site while evaluation and treatment of the paleontological resource takes place.

### 4.2.8 Greenhouse Gas Emissions

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **8. 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? | ☐ | ☐ | ☒ | ☐ |

#### Environmental Settings

Gases that trap heat in the atmosphere are called GHGs. The process by which heat is held in the atmosphere is similar to the effect greenhouses have in raising internal temperature, and thus the name GHGs. The accumulation of GHGs is the driving force for global climate change, which can result in increased temperatures; changes in snow and rainfall patterns; and an increase in droughts, tropical storms, and heavy rain events. The primary GHGs are carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), ozone, and water vapor.

Although GHGs occur naturally in the atmosphere, $CO_2$, $CH_4$, and $N_2O$ are also emitted from human activities, accelerating the rate at which these compounds occur in Earth's atmosphere. Emissions of $CO_2$ are mainly by-products of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural practices, coal mines, and landfills. Other GHGs include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and they are generated in certain industrial processes.

$CO_2$ is the reference gas for climate change effects because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of $CO_2$. $CH_4$ and $N_2O$ are substantially more potent GHGs than $CO_2$, with GWPs of 28 and 265 times that of $CO_2$, respectively.

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of $CO_2$ equivalents (CO2e). CO2e is calculated as the product of the mass emitted of a given GHG and its specific GWP. Although $CH_4$ and $N_2O$ have much higher GWPs than $CO_2$, $CO_2$ is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO2e (CARB 2022; IPCC 2015).

**Assembly Bill 32 (California Global Warming Solutions Act of 2006)**
AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction is in the process of being accomplished by enforcing a statewide cap on GHG emissions that was phased in starting in 2012. Towards this progress, in 2018, California emitted approximately 425 million metric tons of CO2e, 6 million metric tons of CO2e below the 2020 GHG limit of 431 million metric tons of CO2e and 2 million metric tons of CO2e below the 1990 GHG limit of 427 million metric tons of CO2e. To effectively implement the cap, CARB developed and has implemented regulations to reduce statewide GHG emissions from stationary sources. The State has taken these measures because no project individually could have a major impact (either positively or negatively) on the global concentration of GHG emissions.

AB 32 required the CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; instituted a schedule to meet the emissions cap; and developed tracking, reporting, and enforcement mechanisms to ensure that the State would reduce GHG emissions sufficient to meet the cap. AB 32 also included guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers were not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 represented an approximate 25 to 30 percent reduction in emissions levels. However, the CARB had discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that were not anticipated to significantly increase emissions.

**Climate Change Scoping Plan**
AB 32 required the CARB to develop a scoping plan describing the approach for California to take to reduce GHG emissions, to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by the CARB in 2008, with an update every five years. The initial AB 32 Scoping Plan contained the main strategies for California to use to reduce the GHG emissions that cause climate change. The initial Scoping Plan had a range of GHG emissions reduction actions, including direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 program implementation fee regulation to fund the program. In August 2011, the initial Scoping Plan was approved by the CARB.

The *2013 Scoping Plan Update* (2013 Update) built on the initial Scoping Plan with new strategies and recommendations. The 2013 Update identified opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The 2013 Update defined the CARB climate change priorities for the next five years and set the groundwork to reach California's long-term climate goals as set forth in Executive Orders S-3-05 and B-16-2012. The 2013 Update highlighted California's progress toward meeting the near-term 2020 GHG emissions reduction goals that were defined in the initial Scoping Plan. In the 2013 Update, nine key focus areas were identified—energy,

transportation, agriculture, water, waste management, and natural and working lands, short-lived climate pollutants, green buildings, and the cap-and-trade program. On May 22, 2014, the *First Update to the Climate Change Scoping Plan* was approved by the CARB, along with the finalized environmental documents. On November 30, 2017, the *Second Update to the Climate Change Scoping Plan* was approved by the CARB (CARB 2017).

The CARB's *2022 Scoping Plan* was adopted in December 2022 (CARB 2022). The three previous scoping plans focused on specific GHG emissions reduction targets for the state's industrial, energy, and transportation sectors—first to meet 1990 levels by 2020, then to meet the more aggressive target of 40 percent below 1990 levels by 2030. The *2022 Scoping Plan* addresses legislation and direction from Governor Newsom, with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045.

**BAAQMD 2022 CEQA Guidelines**

In 2023, BAAQMD adopted its *2022 CEQA Guidelines*, which updated and superseded prior BAAQMD 2017 CEQA Guidelines. The *2022 CEQA Guideline*s provide BAAQMD recommended procedures for evaluating climate impacts in CEQA documents.

The *2022 CEQA Guidelines* recommend GHG thresholds of significance for land use plans and projects, but do not recommend GHG thresholds of significance directly relevant to the program (i.e., ongoing maintenance activities for water projects such pipelines). Even though the *2022 CEQA Guidelines* do not set a GHG threshold for such projects, to minimize GHG and air pollutant emissions, the Guidelines recommend that projects incorporate 18 BMPs for reducing construction emissions, including BMPs related to engine emissions, use of electric equipment, and materials recycling. For a project to have a less-than-significant impact related to stationary source GHG emissions, it must fall below the bright-line threshold of producing 10,000 MT CO2e per year (BAAQMD 2022).

**Valley Water Climate Change Action Plan**

Valley Water's Climate Change Action Plan (CCAP) builds on Valley Water's existing climate change efforts, by identifying the ways in which Valley Water and Santa Clara County are vulnerable to climate change and providing goals, strategies, and possible actions (Santa Clara Valley Water District (Valley Water) 2021b). Relevant goals and strategies are as follows:

| | |
|---|---|
| *Goal 1.* | Reduce Direct Greenhous Gas Emissions |
| *Action 1.2.3.* | Develop a Valley Water-wide soil management plan to reduce truck hauling trips and encourage more efficient use of sediment/soil/spoils. |
| *Action 1.2.6.* | Improve awareness of existing off-road diesel engine idling policy and consider expanding idling policy to other vehicles. |
| *1.3 Strategy 3.* | Reduce GHG emissions associated with Valley Water-owned equipment. |
| *Action 1.3.1.* | Replace diesel forklifts with electric forklifts (currently 60% of forklifts are electric) |

*Action 1.3.2.* Update diesel engines to comply with the Tier 4 diesel emissions government mandate. (Currently, Valley Water is one year ahead of the mandate's schedule).

*Action 1.3.3.* Continue to replace less efficient equipment with more fuel-efficient Class 4 equipment (ex. generators, boats, other equipment, etc.) or devices that are powered by renewable energy (e.g., solar powered gages and monitoring devices).

*1.4 Strategy 4.* Minimize GHG emissions associated with planning, design, construction, operation, and maintenance of capital projects.

*Action 1.4.1.* Incorporate new energy, water, and fuel-efficient technologies into capital project planning and design. Minimize construction-related vehicle miles traveled.

*Action 1.4.2.* Update internal capital project work instructions to incorporate GHG reduction measures, such as LEED/ Envision certification elements, and considerations for continued maintenance with input from capital project staff and O&M staff.

*Action 1.4.3.* Provide recommendations to change internal capital project specifications through the Technical Review Committee to reduce GHGs and add fleet and equipment specifications for contractors.

*Goal 2.* Expand Renewable Energy Portfolio and Improve Energy Efficiency

*2.2 Strategy 2.* Improve energy efficiency at agency facilities.

*Goal 4.* Water Supply Adaptation

*4.2 Strategy 2.* Improve demand management and increase water conservation efforts.

*Action 4.2.1.* Support programs to reduce pipeline leakage.

*4.6 Strategy 6.* Increase flexibility and resilience of water utility operations and assets.

**Valley Water Board of Directors Policies**

Valley Water also maintains governance policies of the Board of Directors, known as Ends Policies. Policy E-5 includes the following goal and objectives related to energy efficiency and renewable energy:

*Goal 5.1.* Minimize greenhouse gas emissions from Valley Water's operations.

*Objective 5.1.1.* Expand the use of clean technology in vehicles, equipment, and buildings, and develop carbon-efficient construction and service delivery practices.

*Objective 5.1.2.* Optimize energy use and expand renewable energy portfolio.

*Objective 5.1.3.* Incentivize low carbon practices, projects, and efforts by employees, contractors, and partners.

### Methodology and Significance Thresholds

California Air Pollution Officers Association (CAPCOA) CalEEMod (California Emissions Estimator Model Version 2022.1) was used to quantify GHG emissions associated with project construction activities, as well as long-term operational emissions produced by motor vehicles, emergency generator use, and electricity use. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The emissions model results are provided in Appendix B.

The project includes construction activities and the operation of a new backup generator. The majority of the operational GHG emissions generated would be through electricity usage. CalEEMod incorporates GHG emission factors for PG&E and uses an intensity rate of 203 pounds of $CO_2$ per megawatt of electricity produced for PG&E.[3] The project operations (2029) intensity rates of approximately 87 pounds of $CO_2$ per megawatt of electricity produced for PG&E are based on Renewable Portfolio Standard (RPS) mandates.[4] The electricity delivered by PG&E and consumed by the project would be subject to SB 100 and the state's RPS, which requires increasing renewable energy to 60 percent by 2030 and 100 percent by 2045. The associated emissions rate is nearly 90 percent cleaner than the latest national average among energy providers. It would be expected that PG&E's GHG intensity for electricity continues to decrease over time and is estimated to be net zero by 2045. The Power and Water Resources Pooling Agency (PWRPA) is subject to the State of California RPS mandate whereby electric utilities must serve an RPS percentage of retail sales with renewable resources. PWRPA plans to meet its RPS mandate with a combination of renewable resources, including existing landfill gas and small hydro projects, as well as new solar projects and short-term contracts with wind energy providers.

Valley Water has not adopted GHG emissions significance thresholds and defers to BAAQMD's adopted thresholds for GHG emissions. BAAQMD's thresholds of significance consist of three options for project-level impacts:

12. Land use project design elements that must be included in a project,
13. Consistency with a local GHG reduction strategy, and
14. A stationary source threshold of 10,000 metric tons of CO2e per year.

The significance threshold used to determine whether the project would cause a significant impact from GHG emissions is 10,000 metric tons of $CO_2e$ per year as well as compatibility with

[3] As of 2021, PG&E had decreased its carbon intensity to 98 pounds of $CO_2$ per megawatt of electricity produced, https://www.pge.com/assets/pge/docs/account/billing-and-assistance/bill-inserts/1022-Power-Content-Label.pdf

[4] A renewable portfolio standard is a regulatory mandate to increase production of energy from renewable sources such as wind, solar, biomass and other alternatives to fossil and nuclear electric generation.

Valley Water's climate change action plan. Project emissions of less than 10,000 metric tons of $CO_2e$ per year would also indicate that the project's contribution to global climate change would be less than cumulatively considerable (cumulative impacts are further discussed in Section 4.2.21).

## Discussion

**a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

### Construction

The project would have a less than significant effect on the impact described. The project's estimated construction and operational GHG emissions are shown in Table 4.2-9. GHG emissions from construction represent a very small portion of a project's lifetime GHG emissions and operational emissions represent the vast majority of project GHG emissions. Construction emissions are a one-time release. The estimated total construction GHG emissions over the entire construction phase is 2,485 metric tons of $CO_2e$. In order to capture construction GHG emissions in the analysis, construction GHG emissions were amortized over 30 years and added to the operational GHG emissions consistent with SCAQMD's *Interim CEQA GHG Significance Threshold for Stational Sources, Rules and Plans* (SCAQMD 2008). The project's 30-year amortized annual construction-related GHG emissions would be approximately 82.8 metric tons of CO2e.

BAAQMD does not have a policy regarding GHG emissions from construction, but recommends use of BMPs to reduce GHGs during construction. The project would implement several GHG reduction BMPs contained in the *2022 BAAQMD CEQA Guidelines.* Valley Water BMPs AQ-1 requires minimizing idling of vehicles and maintaining and properly tuning vehicles for efficiency. The project would also comply with Title 24 of the building code and all BMPs and mitigation. While the project would generate very minimal and less than significant greenhouse gas emissions, Mitigation Measure AQ-2 would implement additional BAAQMD recommended BMPs for GHG reduction. Given the limited GHG emissions generated during construction and with implementation of BAAQMD BMPs, the impact from GHG emissions would be less than significant.

**Table 4.2-9 Estimated GHG Emissions**

| Year/Source | Annual CO2e (metric tons) |
|---|---|
| **Construction Emission** | |
| 2025 | 903 |
| 2026 | 430 |
| 2027 | 727 |
| 2028 | 424 |
| Total Construction Emissions | 2,485 cumulative (82.8 amortized) |

| Year/Source | Annual CO2e (metric tons) |
|---|---|
| **Operational Emission** | |
| Generator | 7.1 |
| Electrical | 27.8 |
| Total Operations Emissions | 34.9 |
| Total Amortized Construction Emissions | 82.8 |
| Total Construction + Operation Emissions | 117.7 |
| Significant Threshold | 10,000 |
| **Potentially Significant?** | **No** |

*Source: (RCH 2024)*

### Operation

The project would have a less than significant effect on the impact described. The project operations would require an electrical usage increase of approximately 300,000 kwh/year and the addition of a standby generator.

The project would not increase the use of natural gas, nor would it increase the number of employees (and their vehicle miles traveled) nor increase the use of onsite equipment such as loaders and forklifts.

As shown in Table 4.2-9 the estimated operational GHG emission would be approximately 35 metric tons of CO2e, which when added to the construction GHG emissions is 117.7 metric tons of CO2e and well below the significance threshold of 10,000 metric tons of CO2e per year. In addition, the project would be consistent with Valley Water's Climate Change Action Plan, as discussed in part b) below. As such, because the project would generate fewer than 10,000 metric tons CO2e per year and is consistent with a climate change action plan, the project construction and operational GHG emissions would be **less than significant**.

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

The project would have a less than significant effect on the impact described. Plans and policies adopted for reducing GHG emissions in the project site would include AB 32, the CARB's *2022 Scoping Plan*, and Valley Water's *Climate Change Action Plan*. Consistency with each of these plans is discussed in Table 4.2-10.

**Table 4.2-10 Project Consistency with GHG Reduction Plans**

| Plan | Evaluation |
|---|---|
| AB 32 | The CARB implements AB 32 via California's program to collect fees from sources of GHG emissions. These apply to large sources of GHG emissions, including oil refineries, electricity power plants, cement plants, and other industrial sources. AB 32 serves to reduce GHG emissions statewide and does not carry specific requirements with which Valley Water or the project would be required to comply. The project would not conflict with AB 32. |
| CARB *2022 Scoping Plan* | The 2022 Scoping Plan is implemented at the State level, and compliance at a specific plan or project level is not addressed in the plan. The project would use vehicles that would meet current standards at the time of construction and operation and would not conflict with the statewide programs designed to address GHG emissions reduction goals. The project would not conflict with the 2022 Scoping Plan. |
| Valley Water's *Climate Change Action Plan* | The Valley Water Climate Change Action Plan sets goals, strategies, and actions aimed at reducing GHG emissions organization wide. The project would upgrade PWTP facilities to become more efficient and therefore use less energy in its everyday operations, including the reduction of the number of truck trips hauling spoils off the site by improving the dewatering process. The following describes how the project would be consistent with and comply with the goals of the Climate Change Action Plan that are relevant to the proposed project:<br>***Goal 1. Reduce Direct Greenhouse Gas Emissions:*** The project would comply with Action 1.2.3 of Goal 1, which states that Valley Water will develop a plan to reduce truck hauling trips for more efficient use of sediment/soil/spoils, because the project would ultimately reduce the amount of truck trips hauling spoils off site due to the improved efficiency of the PWTP operations.<br>***Goal 2. Expand Renewable Energy Portfolio and Improve Energy Efficiency:*** The project would comply with the 2.2 Strategy 2 by improving the overall efficiency of the PWTP operations by addressing aging infrastructure and associated maintenance issues, capacity, and reliability.<br>***Goal 4 Water Supply Adaptation:*** The project would comply with 4.6 Strategy 6 of Goal 4 by increasing the flexibility and resiliency of the PWTP RMS operations by improving the operational efficiency, capacity, and reliability of the currently constrained plant.<br>The project would not conflict with the Valley Water Climate Change Action Plan. |
| Valley Water Board of Directors Polices | Valley Water Board of Directors Policies, commonly referred to as the Ends Policies, includes Goal 5.1: Minimize greenhouse gas emissions from Valley Water's operations. The project would support this goal by improving the efficiency of the PWTP RMS and reducing the number of truck trips hauling spoils off site. |

The project would also be subject to all relevant provisions of the most recent Building Energy Efficiency Standards (Title 24) and the California Green Building Standards Code (CALGreen), which are implemented to improve efficiency and reduce GHG emissions statewide. As shown in Table 4.2-10, the project would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. As such, the impact would be less than significant.

### Mitigation Measures

No mitigation is required.

### 4.2.9 Hazards and Hazardous Materials

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **9. 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 Section 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? | ☐ | ☐ | ☒ | ☐ |

#### Environmental Settings

**Existing Hazards and Hazardous Materials**

According to the Department of Toxic Substances Control (DTSC) EnviroStor, and State Water Resources Control Board (SWRCB) Geotracker databases, there is one previous leaking underground storage tank (LUST) site with diesel as the potential contaminants of concern on Valley Water property west of Whitman Way. The remediation was completed and the case (T0608501227) has been closed since 1990 (DTSC, n.d.).

A hazardous materials site was previously located approximately 1,300 feet east from the project site. on San Jose Water Company – Dutard Station (60001158), where elemental mercury was found during an excavation for a project. The site was remediated and in 2010 certified to no longer pose a threat to human health or the environment (DTSC 2010).

A Hazardous Substance Liability Assessment (Phase 1 HSLA) was conducted in July 2023 for the project to inform and support preparation of other environmental documents for the project (Locus Technologies [Locus] 2023) (Appendix E). The Phase 1 HSLA identified the following environmental concerns:

- Potential release of chemicals involved in the water treatment process and the potential migration of Sodium Hypochlorite and other halogenated VOCs into the soil, soil vapor, and groundwater underlying the project site.
- Potential for hazardous materials such as asbestos to be present within demolition materials (existing buildings).
- Potential for naturally occurring chrysotile asbestos to be present due to weathering of the serpentine rock, during excavation work.
- Potential for lead to be present due to previous lead findings in the area and the fact that the treatment system was built before lead paint was regulated (pre-1978).
- Potential for agricultural chemicals such as pesticides and herbicides to be present due to the historical agricultural use of the area.

**Schools**

The closest school to the project site is Noble Elementary School, located approximately 0.2 mile to the southwest of the project site.

**Airports**

The Reid-Hillview Airport is located at 2500 Cunningham Avenue, approximately 4 miles south of the project. The Norman Y. Mineta San Jose International Airport is located at 1701 Airport Boulevard, approximately 6 miles west of the project. The project site is not within an airport land use plan area.

**Emergency Response and Evacuation**

The PWTP is listed as a critical facility with Valley Water's Local Hazard Mitigation Plan (Hazard Mitigation Plan). The Hazard Mitigation Plan is a blueprint for how Valley Water may reduce the threats posed by natural hazards that could impact Valley Water's property or facilities. The Hazard Mitigation Plan identifies Highway 101, Interstate 280, Interstate 680, and Interstate 880 as the major freeways that serve as Valley Water's evacuation routes. It also includes the lower-capacity freeways such as State Routes 130 and 152 that are the primary evacuation routes for the PWTP.

The City of San Jose Fire Department provides emergency response services, including hazardous materials response services within the vicinity of the project site.

**Wildfire Hazards**

The project site is located in urban and developed area and is not within a Very High Fire Hazard Severity Zone (CAL FIRE 2024). The project site is within a Local Responsibility Area and is within the City of San Jose's Wildland-Urban Interface (WUI) (Santa Clara County Planning Department, n.d.) as shown in Figure 4.2-7. The project is located approximately 0.4 mile from the nearest high fire hazard severity zone.

The nearest fire station is the City of San Jose Fire Department's Fire Station 19, located at 3292 Sierra Road, San José, CA 95132 (approximately 0.7 mile west of the project site), approximately 4-minutes driving time to the project site.

## Discussion

**a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

and

**b) Would the project 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?**

**Construction**

***Transport and Use of Hazardous Materials***

The project would have a less than significant effect on the impact described. Construction of the project would involve the use of materials that are defined as hazardous, such as paints and other types of coatings, fuels, hydraulic fluids, and coolants for construction equipment. All these materials are commonly used in the construction industry and construction process and their transport, handling, use, and disposal would occur within specifications outlined by their respective manufactures. The project construction may also result in a potential risk of upset or accidental release of fuel (e.g., diesel, gasoline) and/or hydraulic fluid during the use of heavy construction equipment on the project site. Release of fuel or other hazardous materials to the environment during construction could be significant without the BMPs identified below.

As described in the project description, the project would implement BMPs described in Table 2.7-1 to minimize hazardous materials from being released through routine transport, use, and disposal. BMPs HM-7, HM-8, HM-9, and HM-10 would restrict vehicles and equipment from being cleaned, maintained, or refueled in areas that could impact water quality and define procedures to prevent spills from occurring during construction and to address proper cleanup of hazardous materials if a spill does occur. The implementation of the BMPs would avoid a significant hazard to the public or environment and the impact would be **less than significant**.

***Hazardous Materials in Excavated Soils***

The project would have a less than significant effect on the impact described with implementation of mitigation. The project will require excavation up to 35 feet deep for the new facilities. The excavated soils could contain hazardous materials such as pesticide residue and other hazardous materials based on the results of the Phase I ESA. Mitigation Measure HAZ-1

requires implementation of a Sampling and Analysis Plan to characterize the excavated soil materials that would be in the waste stream and support proper handing, transport, and disposal. With the implementation of Mitigation Measures HAZ-1, the excavated soils would not cause a significant hazard to the public or environment and the impact would be **less than significant with mitigation**.

*Naturally Occurring Asbestos*

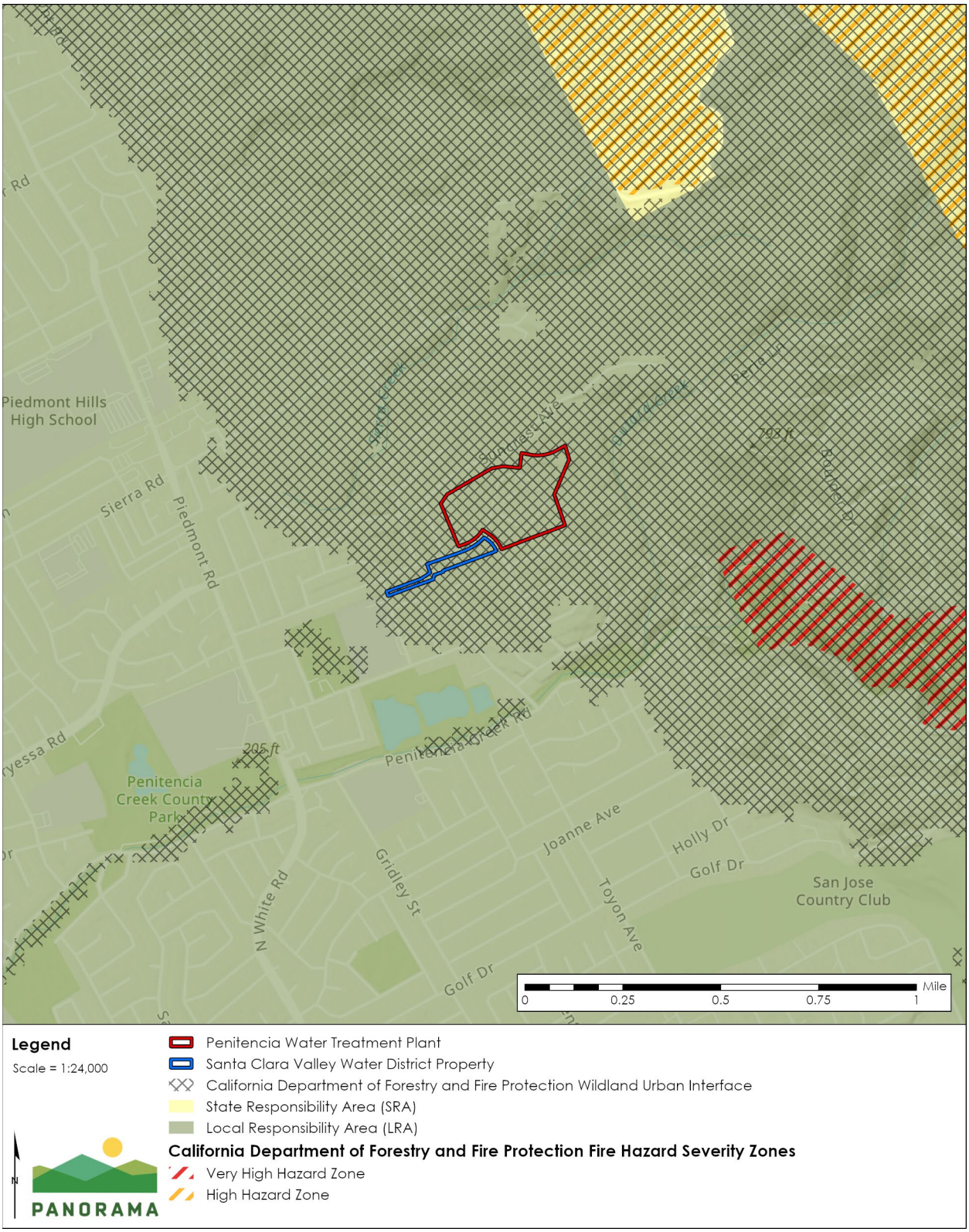
The project would have a less than significant effect on the impact described. The project is located in areas that could contain serpentine soils, which could be a source of naturally occurring asbestos (Locus 2023). To confirm whether naturally occurring asbestos is within the range of excavation for the project, soil samples were obtained from eleven exploration borings around the proposed project excavation areas and analyzed. The results of the soil analysis determined that no naturally occurring asbestos was detected, and therefore naturally occurring asbestos exceeding regulatory thresholds is not anticipated to occur within the excavated soils/materials (Kleinfelder, Inc. 2024). Because a site specific analyses indicated naturally occurring asbestos is not anticipated to occur above any regulatory threshold, the impact from naturally occurring asbestos on the public would be **less than significant**.

*Lead Based Paint and Asbestos*

The project would have a less than significant effect on the impact described with mitigation implemented. According to the Phase 1 HSLA, lead based pain is present on structures at the PWTP and given that the PWTP was built before lead paint and asbestos were regulated (pre-1978), there is a potential presence of lead and asbestos in the building materials that would be demolished at the project site. Project demolition activities could result in a significant hazard to the public or environment if any asbestos or lead based paint in the demolition materials are not properly handled.

Mitigation Measure HAZ-2 defines procedures for any demolition waste that could contain lead or asbestos in compliance with State and federal standards for proper handing, transport, and disposal of lead and asbestos containing material. With the implementation of the Mitigation Measure HAZ-2, the impact from lead and asbestos waste would be **less than significant with mitigation.**

**Figure 4.2-7 Wildfire Risk**



**Operation**

The project would have a less than significant effect on the impact described. During operation of the project, hazardous materials on site would include diesel for the backup generator and sodium hypochlorite for chlorination in the chemical building. Both the diesel and the sodium hypochlorite would include secondary containment to avoid any accidental release. The PWTP has a Hazardous Business Plan (HMBP) as required by State law that includes an inventory of hazardous materials at a facility, emergency response plans and procedures to be followed in the event of a reportable release or threatened release of a hazardous material, safety procedures in the event of a release or threatened release of a hazardous material, including onboarding for new employees and annual refresher courses for existing employees, and a site map that depicts stormwater and sewer drains, access and exit points, emergency shutoffs, evacuation staging areas, hazardous material handling and storage areas, and emergency response equipment. The HMBP would be updated to reflect the project prior to operation.

Additionally, the operation of the project would be required to follow all applicable federal, State, and local regulations pertaining to hazardous materials that would minimize the risk of hazardous material release during routine operations or in the event of an accident. Applicable regulations include but are not limited to requirements imposed by the USEPA, DTSC, and RWQCB. CCR title 8 addresses workplace regulations involving the use, storage, and disposal of hazardous materials. CCR titles 22 and 26 set forth environmental health standards for hazardous materials management. California Health and Safety Code chapter 6.95 sets forth enabling legislation for the application of CCR titles 8, 22, and 26. Safety precautions for the prevention of fire hazards associated with the use and storage of hazardous materials are addressed in the Uniform Fire Code. Compliance with applicable federal, State, and local regulations, including but not limited to CCR titles 8, 22, and 26, the Uniform Fire Code, and California Health and Safety Code chapter 6.95, would ensure that the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or reasonably foreseeable upset and accident conditions. Thus, the impact would be **less than significant**.

**c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**Construction**

The project would have a less than significant effect on the impact described with mitigation implemented. The project site is located within 0.2 mile of Noble Elementary School. Project construction activities would involve handling and transport of hazardous materials from demolition of facilities and excavation of soils that could contain hazardous materials. This could have a significant impact if the hazardous materials and soil were emitted or improperly handled within one-quarter mile from the school. As discussed in the project description, the project would implement BMPs described in Table 2.7-1 to avoid and minimize hazardous materials from being released to the public or environment. BMPs HM-7 through HM-10 would be implemented during construction and would ensure proper vehicle and equipment fueling,

cleaning and maintenance, ensure proper hazardous materials management be implemented and utilize spill prevention measures. While the BMPs would avoid emissions during normal handling of hazardous materials during construction the BMPs do not address impacts from demolition of facilities containing asbestos or lead based paint, which could cause emissions of lead or asbestos within 0.25 mile of a school, which would be a significant impact.

Mitigation Measure HAZ-2 defines procedures for proper testing, handling, containment, and disposal of lead and asbestos containing materials in compliance with State and federal requirements. Through proper handling of lead and asbestos containing materials, the impact associated from handling hazardous materials or emissions of hazardous materials within 0.25 mile of a school would be **less than significant with mitigation**.

**Operations**

The project would have a less than significant effect on the impact described. The project would require the use of hazardous materials such as diesel and sodium hypochlorite and would also involve the transport of hazardous materials along roads adjacent to Noble Elementary School. The volumes of hazardous materials that would be used during operation of the project would be minimal and would not appreciably differ from quantities used for the existing belt-press hydraulic systems and belt conveyor systems that are being replaced by the project. Routine transport, use, storage, and disposal of the polymer, oils, and grease would comply with federal and State regulations as discussed in a) and b) above. In addition, the HMBP for the PWTP would be updated to reflect the hazardous material storage and use for the project. Since the hazardous materials would be stored, handled, and used normally in accordance with strict requirements, they would not result in an increased risk of upset at or around the project site. The project has been designed to comply with State and federal standards for hazardous materials management, including secondary containment, leak detection, and alarm systems where needed to address any leaks of hazardous materials. Also, following any accidental event, proper procedures for the response and cleanup of the site would be conducted in accordance with regulatory guidelines, BMPs, and the HMBP for the project. Therefore, the potential to create a significant hazard to the public from exposure to hazardous materials would be considered **less than significant**.

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

No, the project would not have the impact described. The project site is listed on the Geotracker website as a leaking underground storage tank (LUST) cleanup site (case no. T0608501227). However, the case was completed and has been closed since 1990. The project site would therefore not create a hazard to the public or the environment. Therefore, there would be **no impact**.

**e) Would the project result in a safety hazard or excessive noise for people residing or working in the project area if 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?**

No, the project would not have the impact described. The project site is not located within an airport land use plan or within 2 miles of an airport. The nearest public airport is San Jose Airport located approximately 5 miles from the project site. Because the project is not within 2 miles of a public airport or within an airport land use plan, the project would not result in a safety hazard or excessive noise for people residing or working in the project area and **no impact** would occur.

**f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

The project would have a less than significant effect on the impact described. Construction and operation of the project would not affect an adopted emergency response plan or emergency evacuation plan. All construction activities would occur within the project site and would not require lane or road closures that could interfere with emergency response or evacuations. The project site is not publicly accessible and does not have habitable structures that would need to be evacuated in the event of an emergency. Construction-related employee vehicle trips and truck trips for the project would not impair the ability of emergency responders to reach their destinations or impact evacuation routes. Construction-related traffic would temporary increase traffic in the area, particularly along Whitman Way. Employee vehicle trips would remain the same and would not increase after construction of the project is complete. Access to the project site and surrounding properties would be maintained at all times for fire and emergency response vehicles. The project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and, therefore, the impact would **be less than significant**.

**g) Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?**

**Construction**

The project would have a less than significant effect on the impact described. The project site is within the Wildland Urban Interface Zone (CALFIRE 2019). During construction of the project, mechanized equipment as well as fuels and other potentially flammable substances would be used. Construction would involve use of hot equipment, which has the potential to create sparks and ignite a wildfire.. As described in the project description, the project would implement BMPs described in Table 2.7-1 to avoid and minimize impacts on the environment. BMP HM-12 requires the incorporation of fire prevention measures including having appropriate fire suppression equipment available on site, such as fire extinguishers, and limiting smoking to designated areas that are away from combustible chemicals or vegetation. Implementation of BMP HM-12 would reduce potential for the project to cause a wildland fire, and the resulting impact would be **less than significant.**

**Operation**

The project would have a less than significant effect on the impact described. The project site is within the City of San Jose's Wildland Urban Interface Zone but would not include habitable structures. The operation of the project would not involve the use of equipment on undisturbed land that could ignite a wildfire. All equipment would be operated and contained in paved areas. Since the project would not involve operation in any areas containing flammable vegetation and any flammable materials would be properly contained per the HMBP, operation of the project would not result in an increased risk of wildfire that could expose people or structures to loss or death. The impact would be **less than significant.**

### Mitigation Measures

**Mitigation Measure HAZ-1 – Sampling and Waste Management:** The project would adhere to the following testing, sampling, and handling procedures during construction:

- A soil and groundwater quality investigation shall be conducted to evaluate subsurface conditions in any proposed excavation or construction area to evaluate potential impacts from the project, including evaluation of soil management options for materials produced during exaction and construction and potential health and safety impacts to the project workers. Samples shall be analyzed for petroleum hydrocarbons (including gasoline, diesel, and oil), VOCs, polychlorinated biphenyls, semi-volatile organic compounds, PCBs, organochlorine pesticides, and metals. If groundwater is encountered prior to the final depth, then a groundwater sample shall be taken. Groundwater samples collected from the borings should be analyzed for petroleum hydrocarbons, VOCs, dissolved metals, and pH.
- The results of the soil and groundwater investigation shall be reported to Valley Water. Excavated soil will be segregated, staged, labeled/marked, and properly managed as appropriate per the result of the soil and groundwater investigation in a manner that complies with applicable regulations and to facilitate proper disposal.
- Valley Water will give contractor written notice to dispose of all or a portion of the waste material at a Class I disposal site if the Engineer determines that such disposal is required based on review of contractors waste characterization and the analytical results of samples collected.
- Transport materials and/or wastes in accordance with all local, State, and federal laws, rules, and regulations.
- Contractor shall not assume any soil is approved for offsite reuse. Off-site reuse is only permitted with explicit approval from Valley Water after a careful review of the contractor's proposed reuse and soil testing results.

**Mitigation Measure HAZ-2 - Asbestos and Lead-based Paint:**

Demolition of the project structures and facilities shall comply with the OSHA Standard 1926.6 related to lead abatement and all other applicable State and federal requirements for the safe

handling and disposal of lead-based paint, ACM, and universal wastes. The project contractor shall implement the measures described below.

***Lead-based Paint***

As lead was identified in the paints on existing PWTP facilities, all coated surfaces shall be considered to contain some lead and require demolition dust control procedures and presumed respiratory protection usage for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR section 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the detected presence of any levels of lead.

None of the applicable regulations require removal of lead paint prior to demolition if the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal of the demolition debris in this case can be handled as non-hazardous and non-RCRA waste after the loose and flaking paint have been removed as long as demolition practices do not compromise worker safety and waste stream characterization testing has been performed by the contractor on the entire waste stream for verification.

Conventional demolition techniques shall be employed for all painted surfaces, with the Contractor complying with applicable OSHA and Cal/OSHA statutes regarding the following:

- Worker awareness training
- Exposure monitoring, as needed
- Medical examinations, which may include blood lead level testing
- Establishing a written respiratory protection program

***Asbestos***

Any suspected asbestos material at the project site not sampled or not visually identified as negative by the testing and sampling procedures shall be assumed to contain asbestos and require destructive testing prior to demolition. Inspections in California are required to be conducted by a Certified Asbestos Consultant (CAC) or by a Certified Site Surveillance Technician (CSST) working under a CAC. In the absence of testing, the materials should be assumed to contain asbestos and disposed of in accordance with OSHA standard 1926.6.

## 4.2.10 Hydrology and Water Quality

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **10. HYDROLOGY AND WATER QUALITY. Would the project:** | | | | |
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater 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 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 offsite; | ☐ | ☐ | ☒ | ☐ |
| 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? | ☐ | ☐ | ☒ | ☐ |

### Environmental Settings

#### Surface Water

The proposed project site is located within the Lower Coyote Creek-Frontal San Francisco Bay Estuaries (180500030204) of the USGS delineated Hydrologic Unit Code (HUC) (EPA, n.d.) and within the Coyote subwatershed of the Santa Clara Basin watershed. The project site is within the San Francisco Bay Regional Water Quality Control Board region (SCVURPPP 2019).

The water quality control plan applicable to surface waters in the project site is the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan). The closest surface waters to the project site are Sierra Creek and Dutard Creek, approximately 0.25 mile to west and east, respectively (Figure 4.2-8). Dutard Creek is a tributary to Coyote Creek, which is a Section 303d-listed impaired water for diazinon, trash, and toxicity (SWRCB, n.d.-b)

**Groundwater**

The project site lies within the Santa Clara subbasin of the Santa Clara Valley Basin, which extends from southern San Jose north into Alameda, Contra Costa, and San Mateo counties. Valley Water is the exclusive groundwater sustainability agency (GSA) responsible for sustainable groundwater management within the Santa Clara subbasin. The Santa Clara subbasin is a high priority basin based on criteria that include overlying population, projected growth, number of wells, irrigation acreage, groundwater reliance, and groundwater impacts; however, the subbasin it is not identified as being critically over-drafted. The groundwater sustainability plan, *2021 Groundwater Management Plan for the Santa Clara and Llagas Subbasin* (GWMP) was adopted by Valley Water in 2021 (Valley Water 2021).

**Flood Hazard, Seiche, and Tsunami Zones**

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) indicate the project site is within Zone D, which is an area with possible but undetermined flood hazards. The project site is not within a designated 100-year floodplain, seiche, or tsunami zone.

## Discussion

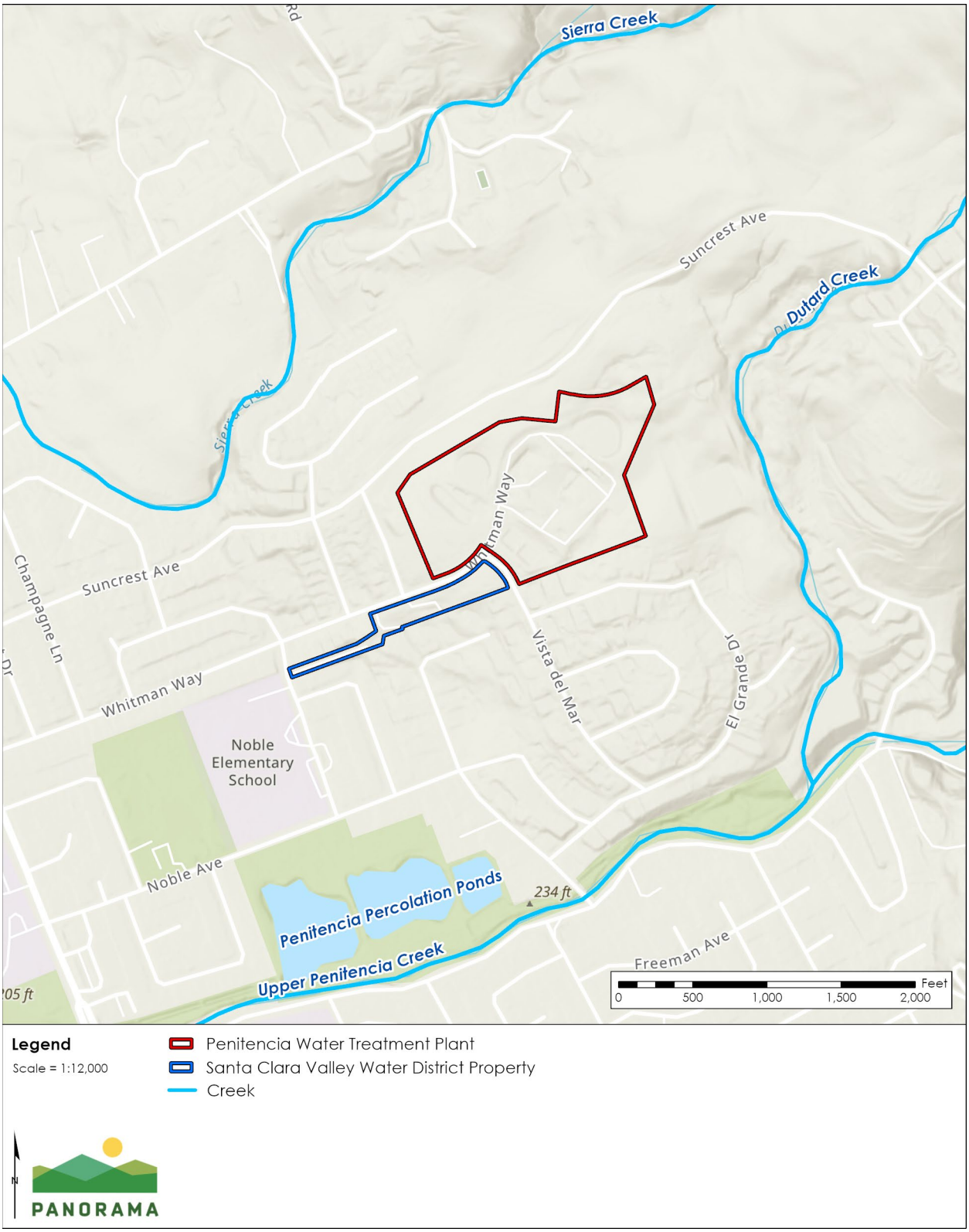
**a) Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?**

**Construction**

***Stormwater Runoff***

The project would have a less than significant effect on the impact described. Construction of the project would require site clearing, excavation, and grading of soils that could increase erosion and sedimentation. Construction would also require fill placement and stockpiling of soils as well as the use of heavy equipment and materials, which could result in spills of fuels or lubricants, and sedimentation that could degrade water quality of surface waters from stormwater discharges. Stormwater runoff from construction activities could degrade surface water quality if the stormwater runoff contained elevated levels of pollutants or sediment.

**Figure 4.2-8 Surface Waters**



The National Pollutant Discharge Elimination System (NPDES) storm water program, implemented by the State Water Resources Control Board (SWRCB), regulates storm water discharges from construction sites that disturb one or more acres of land. The project site is greater than 1.0 acre in size and, therefore, is subject to the NPDES requirements for construction. Construction of the project would be required to comply with the Construction General Permit, which requires preparation of a project-specific SWPPP. In addition, as described in the project description, the project would implement BMPs described in Table 2.7-1 including BMPs HM-7 to HM-10, BMP WQ-4, BMP WQ-5, BMPs WQ-9 to WQ-13, and BMP WQ-16. BMPs HM-7, HM-8, HM-9, and HM-10 include measures to restrict vehicles and equipment from being cleaned, maintained, or refueled in areas that could impact water quality as well as the proper measures to prevent any spills from occurring during construction. BMP WQ-4 would ensure that staging and stockpiled materials are properly contained and maintained to avoid any polluted stormwater runoff. BMP WQ-5, BMP WQ-9, BMP WQ-11, and BMP WQ-16 ensure that the overall construction site is properly maintained and in clean condition and that construction site entrances/exits and all other disturbed ground would be stabilized to prevent sedimentation or erosion impacting stormwater runoff. BMP WQ-13 restricts any substances or materials that could degrade groundwater quality from entering any well or exploratory well during construction. Due to compliance with the Construction General Permit requirements and implementation of BMPs during construction, the stormwater runoff from construction of the proposed would not violate any water quality standards or waste discharge requirements and, therefore, the impact would be **less than significant**.

*Groundwater Dewatering*

The project would have a less than significant effect on the impact described with implementation of mitigation. Construction of the proposed project could involve temporary groundwater dewatering during excavation for the proposed project facilities. Dewatered groundwater has the potential to be contaminated, which could cause a potentially significant impact from violation of water quality standards if not properly treated and discharged. Mitigation Measure HAZ-1 requires sampling of any dewatered groundwater and specifies proper procedures for handling of any contaminated liquids to ensure compliance with water quality standards. Because Mitigation Measure HAZ-1 defines procedures for sampling and proper handling of any contaminated groundwater, the impact from dewatering on water quality would be **less than significant with mitigation.**

**Operation**

The project would have a less than significant effect on the impact described. Valley Water operates under the Municipal Regional Stormwater NPDES Permit (MRP), issued by the Regional Water Quality Control Board (RWQCB). In particular, the project would comply with provision C.3 of the MRP, which requires that new and redeveloped projects include measures to both treat and prevent increases in stormwater runoff. The project would expand the paved driveway around the sludge handling facilities and, to the north, of the new centrifuge building, expanding project facilities by approximately 30,000 square feet to accommodate trucks hauling dewatered solids from the facility. And although, the project's increase of impervious surface

could result in increased stormwater runoff, any impact to water quality or reduction to the amount of groundwater infiltration would be managed in compliance with the requirement in provision C.3 of the MRP. Thus, the impact on water quality standards water quality standards, waste discharge requirements, or surface or groundwater quality would be **less than significant.**

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

**Construction**
The project would have a less than significant effect on the impact described. Water would be used during construction for dust control and compaction during grading and other ground disturbing activities. Water would be obtained from the on-site treatment system, and the total water use for dust control would be minimal. The water at the PWTP comes from surface water sources including the State Water Project.

Groundwater dewatering could be required during the excavation stage to create a dry work area in any areas where groundwater is encountered during excavation. Temporary groundwater wells would be installed around the areas of deep excavations, and pumps would be used to extract the groundwater continuously during the earthwork and concrete work during construction, as needed. Impact on groundwater supplies during construction dewatering would be confined to the vicinity of the excavation. Groundwater levels would return to pre-project conditions after construction is completed and the impact on groundwater supplies from temporary dewatering activities would be **less than significant**.

**Operation**
The project would have a less than significant effect on the impact described. The project would increase the impervious surface area at the project site by about 30,000 square feet by widening the existing roadway around sludge handling ponds to accommodate truck access that would routinely access the roadway to haul off dewater solids from the centrifuge building. The amount of additional impervious surface to the site would not have a substantial impact on the potential groundwater recharge at the site. Because the project would not lower the groundwater table or cause a reduction in groundwater recharge due to impervious surfaces, the impact would be **less than significant.**

**c) Would the Project 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 substantial erosion or siltation on or off site?**

**Construction**
The project would have a less than significant effect on the impact described. The project would not alter the existing drainage pattern of the area or alter the course of a stream or river because the project site would be located largely within the existing impervious surface area and the increase of impervious surface area. The project would be required to prepare and implement a

SWPPP to be in compliance with the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance (Order No. 2022-0057-DWQ, adopted September 8, 2022), which would assist in the management of erosion or sedimentation that could occur during the project's grading and excavation activities. In addition, and as discussed in the project description, the project would implement BMPs described in Table 2.7-1. BMPs WQ-5, WQ-9, WQ-11 and WQ-16 would specifically be implemented to reduce erosion or siltation. BMPs WQ-5, WQ-9, WQ-11, and WQ-16 would ensure that the overall construction site is properly maintained and in clean condition and that construction site entrances/exits and all other disturbed ground would be stabilized to prevent sedimentation or erosion impacting stormwater runoff. With the implementation of the SWPPP, as well as BMPs WQ-5, WQ-9, WQ-11, and WQ-16, the impact from erosion and siltation impacts related to construction would be l**ess than significant.**

**Operation**

The project would have a less than significant effect on the impact described. Implementation of the project would not alter the existing drainage pattern due to the increase in impervious surfaces from the expansion of the pavement around the sludge basin area to accommodate space for truck hauling of dewatered solids. All disturbed staging areas would be stabilized as required by the SWPPP, and all other disturbed areas outside of the paved area would be landscaped to further stabilize and prevent any erosion or sedimentation. Surface runoff from new impervious surfaces would be managed in compliance with C.3 of the MRP and runoff would be directed to landscaped areas to increase infiltration and minimize erosion. Areas that currently drain to the plant facilities would continue to be directed to on-site drains for water treatment and recycling. The project would not result in a change in drainage patterns that would cause substantial erosion or siltation on or off site. The impact would be **less than significant**.

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

The project would have a less than significant effect on the impact described. The project would increase the amount of impervious surface by approximately 30,000 square feet from the expansion of the pavement around the sludge basin area to accommodate space for truck hauling off dewatered solids. However, the project would not substantially increase the rate or amount of surface runoff from this increased impervious areas because the surface runoff from the paved areas of the project site would be directed either to existing stormwater drains on site, off the paved areas onto the vegetated areas with measures in place to avoid erosion, or to existing drains around the solids holding area that would be pumped back up to the headworks to be retreated. Additionally, the project would comply with provision C.3 of the MRP, which requires that new and redeveloped projects include measures to both treat and prevent increases in stormwater runoff. By complying with the requirement in provision C.3 of the MRP, the proposed project impacts on water quality standards would be **less than significant.**

**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?**

**Construction**

The project would have a less than significant effect on the impact described. Construction of the project would disturb more than 1 acre of land and would be required to comply with the Construction Stormwater General Permit, including preparation of a project-specific SWPPP. Compliance with the Construction Stormwater General Permit requirements and implementation of a project-specific SWPPP would avoid generation of polluted runoff from the project site and the impact would be **less than significant.**

**Operation**

The project would have a less than significant effect on the impact described. The project would increase the amount of impervious surface by approximately 30,000 square feet from the expansion of the pavement around the sludge basin area to accommodate space for truck hauling off dewatered solids. As discussed previously, the project would comply with provision C.3 of the MRP, which requires that new and redeveloped projects include measures to both treat and prevent increases in stormwater runoff. With compliance with the requirement in C.3 of the MRP, impacts on contributing to excessive stormwater runoff or provide substantial sources of polluted runoff would be **less than significant.**

**iv. impede or redirect flood flows?**

No, the project would not have the impact described. The project site is not located in a 100-year floodplain. Because the proposed structures would not impede or redirect any flood flows, **no impact** would occur.

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

No, the project would not have the impact described. The project site is not within a flood hazard, tsunami, or seiche zone. Therefore, the proposed project would not risk the release of pollutants due to potential inundation. There would be **no impact**.

**e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

The project would have a less than significant effect on the impact described. The Basin Plan is the water quality control plan for the San Francisco Bay region, including the project site. The project would not result in any direct discharge to any creek or surface water body. Dutard Creek is located downstream of the project site and drains to Coyote Creek, which is listed as impaired for diazinon, trash, and toxicity according to the Basin Plan. The project involves upgrades to water quality treatment infrastructure and would not contribute any sources of diazinon, trash, or toxicity to Dutard Creek or Coyote Creek. The project would not conflict with a water quality control plan and the impact would be **less than significant**.

The project would use the on-site PWTP water source during construction for dust suppression purposes. Although the project would increase impervious surfaces at the project site, the

increased impervious area would be negligible and would not inhibit groundwater recharge. The project would also potentially be required to conduct dewatering during deep excavation during construction. The dewatering during excavation would be temporary and is not expected to be substantial. The groundwater levels would be restored after construction from natural groundwater recharge and, therefore, the dewatering during construction would not have an impact on the sustainability of the groundwater basin. Therefore, the project would not conflict with or obstruct implementation of a sustainable groundwater management plan and the impact would be **less than significant**.

### Mitigation Measures

**Mitigation Measure HAZ-1 (refer to Hazards and Hazardous Materials)**

## 4.2.11 Land Use and Planning

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **11. 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? | ☐ | ☐ | ☐ | ☒ |

### Environmental Setting

The project site is located within the City of Jose and has a land use designation of Public/Quasi Public (PQP) and zoning designation of Low to Medium Residential Based District (R-1-8). The project site is developed within the existing PWTP. Land uses immediately surrounding the site include suburban residential and undeveloped property. Single-family residential uses are located to the south and west, undeveloped private property is located to the north, and undeveloped public property owned by San Jose Water Company to the east of the project site.

### Discussion

**a) Would the project physically divide an established community?**

*Physical division of an established community* typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community or between a community and an outlying area. The project would upgrade the existing residuals management facilities within the existing PWTP property. The project does not involve construction of a physical feature or removal or access that would physically divide an established community. Therefore, **no impact** would occur.

**b) Would the project 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?**

No, the project would not have the impact described. The project would replace existing infrastructure at the PWTP site with infrastructure that serves the same essential purpose and function and located in the same area. There is a proposed project along Suncrest Avenue adjacent to the PWTP that proposes changes to the land use and zoning for the adjacent property. The proposed project is discussed further in Section 4.2.21 as a cumulative project. The project would not conflict with any existing land use plan or policy as it would be replacing existing infrastructure within the PWTP site. Any impacts attributable to future development of adjacent properties would need to be evaluated in the environmental analysis for the adjacent

projects.[5]The project would not cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact. Therefore, **no impact** would occur.

### Mitigation Measures

No mitigation required**.**

[5] The City of San Jose is processing an application for a proposed project that would include a rezone (File No. PDC23-007) and General Plan Amendment (File No. GP18-010). The proposed rezone and General Plan Amendment application includes a subdivision with 56 single-family homes on approximately 39.5 acres located adjacent to the PWTP. This

## 4.2.12 Mineral Resources

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **12. MINERAL RESOURCES. Would the project:** | | | | |
| a) Result in the loss of availability of a known mineral resource that would be of 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? | ☐ | ☐ | ☐ | ☒ |

### Environmental Setting

*Minerals* are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil-bearing rock but excluding geothermal resources, natural gas, and petroleum. Rock, sand, gravel, and earth are also considered minerals by the Department of Conservation when extracted by surface mining operations. Pursuant to the mandate of the Surface Mining and Reclamation Act of 1975 (SMARA), the State Mining and Geology Board has designated the Communications Hill Area (Sector EE), located approximately 7.9 miles southwest of the project site, bounded generally by the Southern Pacific Railroad, Curtner Avenue, State Route 87, and Hillsdale Avenue as containing mineral deposits which are of regional significance as a source of construction aggregate materials. No other areas in San Jose are designated as containing mineral deposits that are either of statewide significance or the significance of which requires further evaluation (City of San Jose 2011).The project site does not contain mineral deposits subject to SMARA.

### Discussion

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

No, the project would not have the impact described. Since the project site is currently developed as a water treatment facility and does not contain any mineral resources, the project activities would not result in the loss of availability of a known mineral resource that would be of value to the region or state. Therefore, **no impact** would occur.

**a) Would the project 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?**

No, the project would not have the impact described. The project site is not identified as a locally important mineral resource recovery site in the general plan, specific plan, or other land use plan. Therefore, **no impact** from loss of availability of a locally important mineral resource would occur.

### Mitigation Measures

No mitigation is required.

## 4.2.13 Noise

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **13. 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 Settings

**Noise Fundamentals**

Noise is defined as unwanted and objectionable sound. Sound levels usually are measured and expressed in decibels (dB), with 0 dB corresponding roughly to the threshold of hearing (Caltrans 2013). Commonly used noise terminology and metrics include (Federal Transit Administration 2018):

- **A-weighted decibel (dBA).** A-weighting is a method used to account for changes in level sensitivity as a function of frequency. A-weighting de-emphasizes the high (6.3 kilohertz [kHz] and above) and low (below 1 kHz) frequencies and emphasizes the frequencies between 1 kHz and 6.3 kHz, to simulate the relative response of the human ear.
- **Community Noise Equivalent Level (CNEL).** CNEL is a 24-hour time-averaged sound exposure level adjusted for average-day sound source operations. The adjustment includes a 5-dB penalty for noise occurring between 7 p.m. and 10 p.m., and a 10-dB penalty for noise occurring between 10 p.m. and 7 a.m., to adjust for the increased impact of nighttime noise on human activities.
- **L50.** This is the median noise level, or level that is exceeded 50 percent of the time.
- **Day-Night Average Sound Level (Ldn).** Ldn describes a receiver's cumulative noise exposure from all events over 24 hours. Events between 10 p.m. and 7 a.m. are increased by 10 dB to account for people's greater nighttime sensitivity to noise.

- **Equivalent Sound Level (Leq**). The Leq describes a receiver's cumulative noise exposure from all events over a specified period. The Leq is a "dosage" type measure and is the basis for the descriptors used in current standards, such as the 24-hour CNEL, used by the State of California.
- **Maximum Sound Level (Lmax)**. The Lmax is the highest sound level measured over a given period.

**Sensitive Noise Receptors**

Noise-sensitive land uses generally include those areas of habitation where the intrusion of noise can adversely affect occupancy, use, or enjoyment of the environment (City of San Jose 2011). Noise sensitive receptors include residential, hotels, motels, hospitals, and residential care. Sensitive receptors that could be exposed to increased noise generated by the project include those receptors within 1,000 feet of the project site as shown on Figure 4.2-4. Sensitive receptors generally include:

- Residences located on El Grande Drive are south and directly adjacent to the PWTP southern fence line.
- The residences along Bay Laurel Lane located as close as approximately 180 west of the PWTP western fence line.
- The residences along Suncrest Avenue located as close as approximately 200 feet north of the PWTP's northern fence line.
- A residence on Vista del Mar adjacent the staging area.

**Groundborne Vibration**

Vibrating objects in contact with the ground radiate energy through the ground. Vibratory motion is commonly described by identifying the peak particle velocity (PPV). PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage (Caltrans 2020).

**Noise Standards**

***Federal and State Guidance***

CEQA does not specify a numerical threshold for "substantial increases" in noise, and no federal regulations that limit overall environmental noise levels have been established; however, federal guidance documents address environmental noise and regulations for specific sources. EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* in 1974, which provides information for State and local governments to use in developing their own ambient noise standards. EPA determined that an Ldn of 55 dBA protects the public from indoor and outdoor activity interference (EPA 1974).

EPA, the Federal Highway Administration (FHWA), and the U.S. Department of Transportation have developed guidelines for noise. Under the authority of the Noise Control Act of 1972, EPA established noise emission criteria and testing methods, published under Title 40 Part 204 of the CFR, that apply to some construction and transportation equipment (e.g., portable air

compressors; medium and heavy-duty trucks). These regulations would apply to trucks that would transport equipment to the project site.

***Local Guidance***

Valley Water is exempt from compliance with the local noise ordinances under California Government Code (CGC) § 53091(d) or (e), which state that county or city building and zoning ordinances do not apply to the construction of facilities for water storage or transmission. This analysis uses applicable policies and regulations from the San Jose General Plan and San Jose Municipal Code for guidance.

***City of San Jose General Plan***

The Envision San Jose 2040 General Plan's Environmental Leadership chapter sets forth policies with the goal of minimizing the impact of noise on people in the City (City of San Jose, 2011). Relevant goals and policies from the Noise and Vibration section of the Environmental Leadership chapter are listed below.

**Policy EC-1.6**: Regulate the effects of operational noise from existing and new industrial and commercial development on adjacent uses through noise standards in the City's Municipal Code.

**Policy EC-1.7**: Require construction operations within San Jose to use best available noise suppression devices and techniques and limit construction hours near residential uses per the City's Municipal Code. The City considers significant construction noise impacts to occur if a project located within 500 feet of residential uses or 200 feet of commercial or office uses would:

- Involve substantial noise generating activities (such as building demolition, grading, excavation, pile driving, use of impact equipment, or building framing) continuing for more than 12 months.

For such large or complex projects, a construction noise logistics plan that specifies hours of construction, noise and vibration minimization measures, posting or notification of construction schedules, and designation of a noise disturbance coordinator who would respond to neighborhood complaints will be required to be in place prior to the start of construction and implemented during construction to reduce noise impacts on neighboring residents and other uses.

**Policy EC-2.3:** Require new development to minimize continuous vibration impacts to adjacent uses during demolition and construction. For sensitive historic structures, including ruins and ancient monuments or building that are documented to be structurally weakened, a continuous vibration limit of 0.08 in/sec PPV (peak particle velocity) will be used to minimize the potential for cosmetic damage to a building. A continuous vibration limit of 0.20 in/sec PPV will be used to minimize the potential for cosmetic damage at buildings of

normal conventional construction. Equipment or activities typical of generating continuous vibration include but are not limited to: excavation equipment; static compaction equipment; vibratory pile drivers; pile-extraction equipment; and vibratory compaction equipment. Avoid use of impact pile drivers within 125 feet of any buildings, and within 300 feet of historical buildings, or buildings in poor condition. On a project-specific basis, this distance of 300 feet may be reduced where warranted by a technical study by a qualified professional that verifies that there will be virtually no risk of cosmetic damage to sensitive buildings from the new development during demolition and construction. Transient vibration impacts may exceed a vibration limit of 0.08 in/sec PPV only when and where warranted by a technical study by a qualified professional that verifies that there will be virtually no risk of cosmetic damage to sensitive buildings from the new development during demolition and construction.

***City of San Jose Municipal Code (Title 20 – Zoning)***

The City of San Jose has noise standards in the City of San Jose Municipal Code Zoning Ordinance (Title 20), which contains noise performance standards that limit noise levels at adjacent properties and applicable hours of construction.

- Chapter 20.30.700(B)(2) states that the sound pressure level generated by any use or combination of uses on a property shall not exceed 55 decibels at the property line of any residential or non-residential use.
- Chapter 20.100.450 (Hours of construction within 500 feet of a residential unit):
  c. Unless otherwise expressly allowed in a development permit or other planning approval, no applicant or agent of an applicant shall suffer or allow any construction activity on a site located within 500 feet of a residential unit before 7:00 a.m. or after 7:00 p.m., Monday through Friday, or at any time on weekends.
  d. Without limiting the scope of Section 20.100.310, no applicant or agent of an applicant shall suffer or allow any construction activity on a site subject to a development permit or other planning approval located within 500 feet of a residential unit at any time when that activity is not allowed under the development permit or planning approval.
  e. This section is applicable whenever a development permit or other planning approval is required for construction activity.

**Methodology**

To quantify existing ambient noise levels in the project site, four long-term (72-hour) and several short-term (10-minute) noise measurements were collected in and around the project site. A Metrosonics db-308 Sound Level Meters calibrated before and after the measurements were used for the long-term noise measurements. A Larson Davis SoundTrack LxT Sound Level Meter calibrated before and after the measurements was used for the short-term measurements.

Figure 4.2-9 shows the noise measurement locations. The existing noise level data collected during short-term and long-term measurements is summarized in Appendix F.

To assess the potential construction noise impacts from the proposed project noise technical analyses were conducted which combined intermittent noise levels from the on-site construction equipment to be used during project construction based on equipment noise data in the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) (Appendix F). Estimates of noise from the construction of the project was based on the maximum amount of construction equipment used on a given day.

Five construction activity scenarios were modeled for construction to represent the noisiest elements (worst case scenario) of the project noise generation in terms of equipment and distance to nearby sensitive receptors. Distances between the construction equipment and the nearest residential façade (sensitive receptor) were modeled for all five scenarios and reflect individual pieces of equipment as well as the combined noise for each scenario. Detailed construction noise calculations are included in Appendix F.

### Discussion

**a) Would the project generate 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?**

#### Construction

The project would have a less than significant effect on the impact described with implementation of mitigation. Construction would result in a temporary increase in ambient noise levels in the vicinity of the project. Construction activities would require the use of various noise generating equipment such as excavating machinery (e.g., excavators, loaders, etc.) and other construction equipment (e.g., scrapers, dozers, compactors, trucks, pile drivers etc.). The noise levels generated by construction equipment would vary depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment, and the prevailing wind direction.

The maximum noise levels for various types of construction equipment that could be used during project construction are provided in Table 4.2-11. Maximum noise levels generated by construction equipment used for the project would range from 77 to 101 dB, Lmax at a distance of 50 feet. Construction of the project would occur between 7 a.m. and 7 p.m., Monday through Friday, consistent with Chapter 20.100.450 of the San Jose Municipal Code. However, extended work hours, such as weekend work and early morning starts for concrete pours would be required and would occur outside of the City's allowable construction hours as discussed under nighttime construction below.

**Figure 4.2-9 Noise Monitoring Locations and Noise Barrier**

**Table 4.2-11 Typical Noise Levels from Construction Equipment**

| Construction equipment | Noise level (dB, $L_{max}$ at 50 feet) |
|---|---|
| Backhoe | 78 |
| Excavator | 81 |
| Dozer | 82 |
| Front End Loader | 79 |
| Forklift | 77 |
| Compactor | 83 |
| Water Truck | 80 |
| Crane | 81 |
| Welder/Torch | 74 |
| Pneumatic Tools | 85 |
| Impact Pile Driver | 101 |
| Vibratory Pile Driver | 95 |
| Auger Drill Rig | 84 |
| Generator | 82 |
| Dump Truck | 77 |
| Haul Truck (Earth Hauler) | 88 |
| Concrete Mixer Truck | 79 |
| Paver | 77 |
| Roller | 80 |

*Source: (Federal Highway Administration 2006)*

### *Daytime Construction*

The project would have a less than significant effect on the impact described following the implementation of mitigation The project's construction noise would generate noise levels between 73.6 and 90.1 dB, Leq at the nearest receptor as shown in Table 4.2-12. Construction noise would last over the construction period (5 years) but may not be continuous over the entire construction duration. The distance to the nearest receptor is based on the construction phase and construction activities would be expected to move further away from the nearest receptor and therefore produce less noise at different phases of construction. The estimated noise levels are based on worst-case scenarios because each scenario assumes that all equipment that is proposed to be used for that activity is present and operating simultaneously at the closest point to the nearest residential façade.

**Table 4.2-12 Noise levels from project construction at nearby sensitive receptors**

| Scenario | Activity | Residential Receptor Location | Principal Noise Sources | Reference Noise Level (dB, Lmax at 50 feet) | Distance to Receptor (feet)[1] | Usage Factor (%) | Leq (h) Level (dB)[2] | Leq (h) Level with Mitigation (dB) |
|---|---|---|---|---|---|---|---|---|
| A1-a | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Impact Pile Driver | 101.3 | 370 | 20 | 76.9 | N/A[3] |
| A1-a | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Excavator | 80.7 | 350 | 40 | 59.8 | N/A[3] |
| A1-a | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Haul Truck (4x) | 88.0 | 350 | 40 | 67.1 | N/A[3] |
| A1-a | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Compactor | 83.2 | 350 | 20 | 59.3 | N/A[3] |
| A1-a | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Front End Loader | 79.1 | 350 | 40 | 58.2 | N/A[3] |
| A1-a | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Dump Truck (2x) | 76.5 | 350 | 40 | 55.6 | N/A[3] |
| **A1-a** | **Demolition of northernmost Sludge Holding Pond** | **Nearest Residence on Suncrest Avenue** | **Combined Total** | - | **350** | - | **78.6** | **N/A[3]** |
| A1-b | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Auger Drill Rig | 84.4 | 370 | 20 | 60.0 | N/A[3] |
| A1-b | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Excavator | 80.7 | 350 | 40 | 59.8 | N/A[3] |
| A1-b | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Haul Truck (4x) | 88.0 | 350 | 40 | 67.1 | N/A[3] |

| Scenario | Activity | Residential Receptor Location | Principal Noise Sources | Reference Noise Level (dB, Lmax at 50 feet) | Distance to Receptor (feet)[1] | Usage Factor (%) | Leq (h) Level (dB)[2] | Leq (h) Level with Mitigation (dB) |
|---|---|---|---|---|---|---|---|---|
| A1-b | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Compactor | 83.2 | 350 | 20 | 59.3 | N/A[3] |
| A1-b | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Front End Loader | 79.1 | 350 | 40 | 58.2 | N/A[3] |
| A1-b | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Dump Truck (2x) | 76.5 | 350 | 40 | 55.6 | N/A[3] |
| **A1-b** | **Demolition of northernmost Sludge Holding Pond** | **Nearest Residence on Suncrest Avenue** | **Combined Total** | - | **350** | - | **73.9** | **N/A[3]** |
| A1-c | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Vibratory Pile Driver | 95.0 | 370 | 20 | 70.6 | N/A[3] |
| A1-c | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Excavator | 80.7 | 350 | 40 | 59.8 | N/A[3] |
| A1-c | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Haul Truck (4x) | 88.0 | 350 | 40 | 67.1 | N/A[3] |
| A1-c | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Compactor | 83.2 | 350 | 20 | 59.3 | N/A[3] |
| A1-c | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Front End Loader | 79.1 | 350 | 40 | 58.2 | N/A[3] |
| A1-c | Demolition of northernmost Sludge Holding Pond | Nearest Residence on Suncrest Avenue | Dump Truck (2x) | 76.5 | 350 | 40 | 55.6 | N/A[3] |

| Scenario | Activity | Residential Receptor Location | Principal Noise Sources | Reference Noise Level (dB, Lmax at 50 feet) | Distance to Receptor (feet)[1] | Usage Factor (%) | Leq (h) Level (dB)[2] | Leq (h) Level with Mitigation (dB) |
|---|---|---|---|---|---|---|---|---|
| **A1-c** | **Demolition of northernmost Sludge Holding Pond** | **Nearest Residence on Suncrest Avenue** | **Combined Total** | - | **350** | - | **75.5** | **N/A[3]** |
| A2-a | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Impact Pile Driver | 101.3 | 100 | 20 | 88.3 | 76.3[4] |
| A2-a | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Excavator | 80.7 | 90 | 40 | 71.6 | 59.6[4] |
| A2-a | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Haul Truck (4x) | 88.0 | 90 | 40 | 78.9 | 66.9[4] |
| A2-a | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Compactor | 83.2 | 90 | 20 | 71.1 | 59.1[4] |
| A2-a | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Front End Loader | 79.1 | 90 | 40 | 70.0 | 58.0[4] |
| A2-a | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Dump Truck (2x) | 76.5 | 90 | 40 | 67.4 | 55.4[4] |
| **A2-a** | **Demolition of southernmost Washwater Recovery Pond** | **Nearest Residence on El Grande Drive** | **Combined Total** | - | **90** | - | **90.1** | **78.1[4]** |
| A2-b | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Auger Drill Rig | 84.4 | 100 | 20 | 71.3 | 59.3[4] |
| A2-b | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Excavator | 80.7 | 90 | 40 | 71.6 | 59.6[4] |
| A2-b | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Haul Truck (4x) | 88.0 | 90 | 40 | 78.9 | 66.9[4] |

| Scenario | Activity | Residential Receptor Location | Principal Noise Sources | Reference Noise Level (dB, Lmax at 50 feet) | Distance to Receptor (feet)[1] | Usage Factor (%) | Leq (h) Level (dB)[2] | Leq (h) Level with Mitigation (dB) |
|---|---|---|---|---|---|---|---|---|
| A2-b | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Compactor | 83.2 | 90 | 20 | 71.1 | 59.1[4] |
| A2-b | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Front End Loader | 79.1 | 90 | 40 | 70.0 | 58.0[4] |
| A2-b | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Dump Truck (2x) | 76.5 | 90 | 40 | 67.4 | 55.4[4] |
| **A2-b** | **Demolition of southernmost Washwater Recovery Pond** | **Nearest Residence on El Grande Drive** | **Combined Total** | **-** | **90** | **-** | **85.7** | **73.7**[4] |
| A2-c | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Vibratory Pile Driver | 95.0 | 100 | 20 | 82.0 | 70.0[4] |
| A2-c | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Excavator | 80.7 | 90 | 40 | 71.6 | 59.6[4] |
| A2-c | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Haul Truck (4x) | 88.0 | 90 | 40 | 78.9 | 66.9[4] |
| A2-c | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Compactor | 83.2 | 90 | 20 | 71.1 | 59.1[4] |
| A2-c | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Front End Loader | 79.1 | 90 | 40 | 70.0 | 58.0[4] |
| A2-c | Demolition of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Dump Truck (2x) | 76.5 | 90 | 40 | 67.4 | 55.4[4] |
| **A2-c** | **Demolition of southernmost Washwater Recovery Pond** | **Nearest Residence on El Grande Drive** | **Combined Total** | **-** | **90** | **-** | **87.1** | **75.1**[4] |

| Scenario | Activity | Residential Receptor Location | Principal Noise Sources | Reference Noise Level (dB, Lmax at 50 feet) | Distance to Receptor (feet)[1] | Usage Factor (%) | Leq (h) Level (dB)[2] | Leq (h) Level with Mitigation (dB) |
|---|---|---|---|---|---|---|---|---|
| A3 | Paving of southern project site – Directly south of Washwater Recovery Ponds | Nearest Residence on El Grande Drive | Paver | 77.2 | 80 | 50 | 70.1 | 58.1[4] |
| A3 | Paving of southern project site – Directly south of Washwater Recovery Ponds | Nearest Residence on El Grande Drive | Compactor | 83.2 | 80 | 20 | 72.2 | 60.2[4] |
| A3 | Paving of southern project site – Directly south of Washwater Recovery Ponds | Nearest Residence on El Grande Drive | Roller | 80.0 | 80 | 20 | 68.9 | 56.9[4] |
| A3 | Paving of southern project site – Directly south of Washwater Recovery Ponds | Nearest Residence on El Grande Drive | Haul Truck (3x) | 88.0 | 80 | 40 | 79.9 | 67.9[4] |
| A3 | Paving of southern project site – Directly south of Washwater Recovery Ponds | Nearest Residence on El Grande Drive | Concrete Mixer Truck | 78.8 | 80 | 40 | 70.7 | 58.7[4] |
| **A3** | **Paving of southern project site – Directly south of Washwater Recovery Ponds** | **Nearest Residence on El Grande Drive** | **Combined Total** | **-** | **80** | **-** | **85.3** | **73.3**[4] |
| A4 | Concrete pours for foundation of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Pickup Truck (2x) | 75.0 | 90 | 40 | 65.9 | 53.9[4] |
| A4 | Concrete pours for foundation of southernmost Washwater Recovery Pond | Nearest Residence on El Grande Drive | Concrete Mixer Truck (2x) | 78.8 | 100 | 40 | 68.8 | 56.8[4] |

| Scenario | Activity | Residential Receptor Location | Principal Noise Sources | Reference Noise Level (dB, Lmax at 50 feet) | Distance to Receptor (feet)[1] | Usage Factor (%) | Leq (h) Level (dB)[2] | Leq (h) Level with Mitigation (dB) |
|---|---|---|---|---|---|---|---|---|
| **A4** | **Concrete pours for foundation of southernmost Washwater Recovery Pond** | **Nearest Residence on El Grande Drive** | **Combined Total** | **-** | **90** | **-** | **73.6** | **61.6[4]** |
| A5 | Use of Staging Area | Nearest Residence on Vista Del Mar | Pickup Truck (3x) | 75.0 | 90 | 40 | 65.9 | N/A[5] |
| A5 | Use of Staging Area | Nearest Residence on Vista Del Mar | Backhoe | 77.6 | 90 | 40 | 68.5 | N/A[5] |
| A5 | Use of Staging Area | Nearest Residence on Vista Del Mar | Forklift | 77.0 | 90 | 40 | 67.9 | N/A[5] |
| **A5** | **Use of Staging Area** | **Nearest Residence on Vista Del Mar** | **Combined Total** | **-** | **90** | **-** | **74.0** | **N/A[5]** |

NOTES:

1 Some pieces of equipment are listed closer to the nearest residential façade because they are mobile and would be located along the access roads on-site which are located closer to residences on both the north and south side of the project site while in use.

2 The hourly Leq level is adjusted for distance from nearest sensitive receptor and percentage of usage.

3 Noise from the demolition of the northernmost Sludge Holding Pond would be reduced by the existing topography and distance between the nearest residences on Suncrest Avenue. Due to the distance between this activity and the nearest residences, no temporary sound barrier is proposed for construction occurring on the north side of the project site.

4 Implementation of Mitigation Measure NOI-1 would result in an approximate 12 dB reduction of noise from construction reaching the nearest residences on El Grande Drive. This reduction would come from installation of a temporary 12-foot-tall construction noise barrier that would be located directly east, south, and west of the Washwater Recovery Ponds and located as close as feasible to construction activities.

5 No temporary sound barriers are proposed adjacent to the staging area.

*Source: (RCH Group 2024)*

Activities generating the most amount of noise (i.e., demolition, grading, excavation and pile driving) would occur within 500 feet of several residential homes for 5 years, a period that would exceed the 12-month duration threshold set forth in City of San Jose General Plan Policy EC-1.7. Generation of construction noise in proximity to receptors for more than 12 months would be a potentially significant impact. The City General Plan's Policy EC-1.7 states that for such large or complex projects, a construction noise logistics plan that specifies hours of construction, noise and vibration minimization measures, posting or notification of construction schedules, and designation of a noise disturbance coordinator who would respond to neighborhood complaints would be required to be in place prior to the start of construction and implemented during construction to reduce noise impacts on neighboring residents and other uses.

The project would implement Mitigation Measures NOI-1 and NOI-2, which would implement the required noise logistics plan to reduce construction noise at nearby sensitive receptors. Mitigation Measure NOI-1 would require the installation of a 12-foot-tall temporary construction noise barrier adjacent to the construction occurring at the washwater recovery ponds. This temporary construction noise barrier would effectively reduce construction noise levels at residences on El Grande Drive by approximately 12 dB (see mitigated construction noise levels for Scenarios A2-A4 in Appendix F). Mitigation Measure NOI-2 requires written notification to all residential units within 500 feet of the construction to before construction activities). As such, with the implementation of Mitigation Measures NOI-1 and NOI-2, construction noise would comply with local standards and would be **less than significant with mitigation**.

*Night-time Construction*

The project would have a less than significant effect on the impact described following the implementation of mitigation. Consistent with Chapter 20.100.450 of the San Jose Municipal Code, construction within 500 feet of a residential unit is limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday unless expressly allowed in a development permit or other planning approval. While construction is planned to occur within the approved construction hours consistent with San Jose Municipal Code, construction could occur during early morning hours or outside normal working hours for specified construction activities such as concrete delivery and pours. The extended workdays for concrete delivery and pours would be approximately 16 hours long. The total number of extended workdays would occur for a total of 3 weeks, nonconsecutively over the course of the 5-year construction period. Noise levels during concrete pours would be equivalent to those indicated in Scenario A4 in Table 4.2-12 and would be up 73.6 dB Leq without mitigation at the nearest receptor. Early morning concrete work occurring during nighttime hours could potentially cause annoyances at the residences along El Grande Drive during nighttime hours and would exceed the approved work hours, which would be a significant impact. Mitigation Measures NOI-1 would implement a sound barrier as shown in Figure 4.2-9, which would effectively reduce noise levels during concrete pours by 12 dB at adjacent receptor to 61.6 dB Leq. Valley Water would also implement Mitigation Measure NOI-2, which requires notification of nearby receptors prior to extended

workdays for concrete pours. As such, due to the very infrequency and short duration of extended concrete pours over the project duration, the impact from extended work hours for concrete pours would be **less than significant with mitigation**.

*Staging Area Noise*

The project would have a less than significant effect on the impact described. Construction staging and stockpiling would occur within the staging areas shown in Figure 2.3-1 or within one or more disturbed or developed areas within 10 miles of the PWTP. As shown in Table 4.2-12, the use of the staging area adjacent the PWTP would generate a maximum noise level of 74 dB, Leq at the nearest receptor. The estimated noise levels shown in Table 4.2-12 are very conservative because it is assumed that all equipment that is proposed to be used in the staging area is present and operating simultaneously, which will never be the case. The noise level generated from the use of a staging area would be much lower than the noise levels presented in Table 4.2-12. Therefore, the same can be assumed for use of other staging areas on Valley Water property or use of off-site staging areas. It is assumed that use of any staging sites within 10 miles of the PWTP would comply with the local jurisdiction's construction noise ordinance (i.e., hours of construction or construction noise limits). As such, off-site staging area noise impacts would be **less than significant**.

**Operation**

The project would have a less than significant effect on the impact described. The project facilities would be very similar to the existing RMS facilities that are currently on-site and would not generate a substantial permanent increase in ambient noise levels in the vicinity of the project site. The project would include new pumps, which would be a source of new stationary noise-generating equipment. The closest new pump would be approximately 200 feet north of the nearest residential property line on El Grande Drive.

To analyze potential operational noise impacts, operational noise levels from the existing equipment was recorded as a reference noise level on June 26, 2023. The noise levels recorded from the operating sludge drying beds and equipment was a constant 68 dB, Leq at a distance of 20 feet away. Using the reference noise level, attenuation modeling was conducted to predict the resulting noise levels from the proposed pump operational noise at the nearest residential property line.

**Table 4.2-13 Noise levels from proposed sludge transfer pump station**

| Noise Source | Reference Noise Level (dB, Leq at 20 feet) | Distance to Receptor (feet) | Leq (h) Level (dB)[1] | Threshsold (dB, Lmax)[2] | Exceeds Noise Threshold? |
|---|---|---|---|---|---|
| Noise from proposed sludge transfer pump station | 68 | 200 | 48 | 55 | **No** |

Notes:

1. Assumes a 6 dB reduction from standard distance attenuation

2. San Jose Municipal Code, Part 7, Chapter 20.30.700 prohibits noise levels from the Project site to exceed 55 dB, Lmax at the nearest residential property line.

*Source: (RCH Group 2024)*

As shown in Table 4.2-13 noise from the proposed operational pumps would be 48 dB, Leq at the nearest property line of a residential use (located approximately 200 feet away). This noise level would not exceed the 55 dB, Lmax limit outlined in San Jose Municipal Code, Part 7, Chapter 20.30.700. As such, operational noise from proposed pumps would be **less than significant.**

#### b) Would the project generate excessive groundborne vibration or groundborne noise levels?

The project would have a less than significant effect on the impact described following the implementation of mitigation. Construction activities could result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. In most cases, vibration induced by typical construction equipment does not result in adverse effects on people or structures (Caltrans 2013). Construction equipment noise is address in Impact a) and construction equipment would not be a source of groundborne noise. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. City of San Jose Policy EC-2.3 sets a threshold of 0.08 in/sec. PPV for sensitive historic structures, including ruins and ancient monuments or buildings that are documented to be structurally weakened, and a continuous vibration limit of 0.20 in/sec PPV for buildings of normal conventional construction. Policy EC-2.3 also restricts use of impact pile drivers within 125 feet of any buildings, and within 300 feet of historical buildings, or buildings in poor condition.

Construction of the project would involve use of heavy equipment that would temporarily generate groundborne vibration levels in proximity to residential structures, including potential use of impact pile drivers. Depending on the location of construction, several pieces of heavy equipment that would be used for demolition and construction could be as near as 90 feet from the nearest residential structure. Other pieces of mobile equipment could be as near as 80 feet from the nearest residential structure. Most of the construction would occur at distances much greater than 80 and 90 feet throughout the duration of project construction. Construction would require the use of either an impact pile driver, a vibratory pile driver, or an auger drill to install beams to support the deep excavations at the washwater basins. Other heavy equipment would include a roller that would be used for paving. The estimated PPV for heavy construction equipment that could be used at 80 and 90 feet is summarized in Table 4.2-14.

**Table 4.2-14 Vibration (PPV) Levels During Construction**

| Construction Equipment/Type of Construction | PPV at 25 feet (in/sec) | Distance to Nearest Receptor (feet) | PPV at nearest receptors to the project (in/sec) | Exceeds 0.2 in/sec PPV Threshold? |
|---|---|---|---|---|
| Pile Driver (Impact) (Upper Range) | 1.518 | 90 | **0.22** | **Yes** |
| Pile Driver (Vibratory) (Typical Range) | 0.644 | 90 | 0.09 | No |
| Caisson Drilling (Auger Drilling) | 0.089 | 90 | 0.01 | No |
| Roller/Paving | 0.21 | 80 | 0.04 | No |

Notes: Bold indicates an exceedance of a threshold

*Source:*

As shown in Table 4.2-14, the predicted vibration levels from construction activities would exceed the City of San Jose's 0.2 PPV threshold during use of an impact hammer at a distance of 90 feet from the nearest residential structure and the resulting vibration impact on nearby structures is potentially significant. Implementation of Mitigation Measures NOI-3 requires a minimum setback of 125 feet from the nearest residence and would ensure that construction vibration from the use of an impact pile driver would be below the 0.2 PPV significance threshold and would not exceed the vibration thresholds set by the City of San Jose. As presented in Table 4.2-12, all other pile driver options would not exceed the vibration threshold at the nearest residential structure. As such, vibration impacts from construction would be **less than significant with mitigation**.

**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?**

No, the project would not have the impact described. No public airports or private airstrips are within 2 miles of the project site. The nearest airport is the Reid-Hillview Airport located approximately 4 miles south of the project. As such, **no impact** would occur.

### Mitigation Measures

**Mitigation Measure NOI-1: Noise Barriers**

Prior to demolition occurring at the Washwater Recovery Ponds, Valley Water will install a temporary 12-foot-tall construction noise barrier as close as feasible to the southernmost Washwater Recovery Pond demolition and construction activities to shield the residential receptors to the south on El Grande Drive. The noise barrier shall be equipped with exterior-rated quilted sound blankets that are a minimum of 2 inches thick. There may be some periods

of construction when the noise barrier may be temporarily moved or dismantled to accommodate the movement of heavy equipment and work crews within the immediate project construction area. Valley Water will schedule any dismantling or moving of the noise barrier to coincide with periods when construction activities will occur within the adopted construction hours of the City of San Jose (7:00 a.m. to 7:00 p.m.) and fall within the local noise requirements. The location of the temporary noise barrier is shown on Figure 4.2-9 or functional equivalent.

**Mitigation Measure NOI-2: Notification**
Prior to the start of construction activities (major phases), Valley Water will provide written notification to all residents within 500 feet of the construction site. The notice shall include information on the estimated start date and duration of construction activities, hours of construction, and contact information (i.e., telephone number and email address)for the VW Construction Manager or assigned staff (e.g., Construction Noise Coordinator).Additional written notification to all residential units within 500 feet of the construction site shall be provided prior to nighttime construction activities (before 7:00 a.m. or after 7:00 p.m.) informing them of the estimated start date, duration, and hours of construction for nighttime construction activities. Written notification shall be provided at least one week prior to any nighttime construction activity.

The VW Construction Manager or assigned staff (Construction Noise Coordinator) will be responsible for responding to any local complaints about construction noise or vibration. Contact information (i.e., telephone number and email address) for the Construction Noise Coordinator shall be conspicuously posted along public roads adjacent to the construction site in addition to any written notifications to area residents.

**Mitigation Measure NOI-3: Impact Pile Driver Setback**
Impact pile driver use shall be limited to locations 125 feet or greater from any off-site structure. Prior to use of any impact pile driver at the site, the contractor shall submit a pile driving plan to Valley Water that includes information on the type of pile drivers to be used and the location of the pile driver to demonstrate that the pile driver will be greater than 125 feet from any off-site residence. This measure does not apply to Vibratory Pile Drivers, Caisson Drilling, or Roller/Paving equipment.

## 4.2.14 Population and Housing

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **14. 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? | ☐ | ☐ | ☐ | ☒ |

### Environmental Setting

The project site is an existing developed water treatment facility within the City of San Jose. The project site is surrounded by single-family residential uses to the south and west, undeveloped private property to the north, and undeveloped public property to the east.

### Discussion

**a) Would the project 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)?**

No, the project would not have the impact described. The project would include upgrades to the existing PWTP facilities that would improve the efficiency of the residual management process that would allow the plant to operate at its design capacity but would not increase the permitted capacity of the plant. The project would not induce substantial unplanned population growth in the area because the project would not include any new housing; new commercial or industrial facilities or extend infrastructure or public facilities. The project would not generate additional permanent employment opportunities because the project would replace existing infrastructure and would automate processes that are currently manual. The project would generate a small number of short-term construction jobs, which are expected to come from the local or regional labor force. The project would not directly or indirectly induce population growth because it would not create any housing or increase infrastructure capacity. Therefore, **no impact** would occur.

**b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?**

No, the project would not have the impact described. Implementation of the project would not displace any residents or housing units because no housing exists on the project site. **No impact** would occur.

### Mitigation Measures

No mitigation required.

## 4.2.15 Public Services

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **15. PUBLIC SERVICES.** | | | | |
| a) Would the project 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? | ☐ | ☐ | ☐ | ☒ |

### Environmental Setting

The project site is located within the City of San Jose and is under the jurisdiction of the San Jose Fire Department and San Jose Police Department. The nearest fire station is City of San Jose Fire Department's Fire Station 19, located at 3292 Sierra Road, San José, CA 95132 (approximately 0.7 mile west of the Project site), approximately 4-minutes driving time to the project site. The San Jose Police Station is located at 201 W Mission Street, San Jose, CA 95110 (approximately 5 miles southwest of the Project site), approximately 15-minute driving time to the project site.

The project is within Berryessa Union School District and East Side Unified High School District. The closest school to the project site is Noble Elementary School, located approximately 0.2 mile to the southwest of the project site. The closest parks to the project site are Noble Park, located approximately 0.4 mile to the southwest of the project site, and Alum Rock Park, located approximately 0.4 mile to the southeast of the project site.

## Discussion

**a) Would the project 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:**

**i. Fire protection?**

No, the project would not have the impact described. The project would not increase demand for fire protection services that would necessitate the need for new or physically altered facilities because the project would not increase the number of employees on the project site or increase the local population. The project would replace existing residual management facilities with new facilities that provide the same function. **No impact** would occur.

**ii. Police protection?**

No, the project would not have the impact described. The project would not increase demand for police services that would necessitate the need for new or physically altered facilities, because the project would not increase the number of employees on the project site or increase the local population. The project would replace existing residual management facilities with new facilities that provide the same function. **No impact** would occur.

**iii. Schools?**

No, the project would not have the impact described. The project would not result in population growth that would increase demand for schools because the project would not increase the local population. The project would replace existing residual management facilities with new facilities that provide the same function. **No impact** would occur.

**iv. Parks?**

No, the project would not have the impact described. The project would not result in population growth that would increase demand for parks, because the project would not increase the local population. The project would replace existing residual management facilities with new facilities that provide the same function. **No impact** would occur.

**v. Other public facilities?**

No, the project would not have the impact described. The project would not result in population growth or other land use modifications that would increase demand for other facilities. The project would replace existing residual management facilities with new facilities that provide the same function. Therefore, **no impact** would occur.

## Mitigation Measures

No mitigation required.

### 4.2.16 Recreation

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **16. 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? | ☐ | ☐ | ☐ | ☒ |

#### Environmental Setting

The project site is located within the City of San Jose, which manages approximately 3,520 acres of parks (regional/city-wide and neighborhood/community), community gardens and open space lands (City of San Jose 2011). The closest parks to the project are Noble Park, which is approximately 0.4 mile to the southwest of the project site, and Alum Rock Park, which is also approximately 0.4 mile to the southeast of the project site.

#### Discussion

**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?**

No, the project would not have the impact described. The project would consist of improvements to an existing water treatment facility. The project would allow the PWTP to operate at its permitted capacity but would not expand the treatment capacity of the plant and would not induce population growth. The project would not propose any residential use that would increase the use of existing neighborhood and regional parks or other recreational facilities in the project vicinity. Therefore, **no impact** would occur.

**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?**

No, the project would not have the impact described. The project consists of improvements to an existing water treatment facility. The project would not include recreational facilities, nor would the project induce population growth and demand for recreational facilities requiring the construction or expansion of recreational facilities. Therefore, **no impact** would occur.

#### Mitigation Measures

No mitigation required.

## 4.2.17 Transportation

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **17. 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 section 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? | ☐ | ☐ | ☒ | ☐ |

### Environmental Setting

The project site is located on Whitman Way, at Vista Del Mar in the City of San Jose. Whitman Way and Vista Del Mar are residential two-lane roads that provide local access to nearby residences. Regional access to the project site is available from Interstate 680 via Berryessa Road and Piedmont Road. Berryessa Road and Piedmont Road are four-lane roadways. Berryessa Road has a Class 2 (Basic) bike lane, and Piedmont Road has a Class 2 (Buffered) bike lane[6] (City of San Jose 2021). The Valley Transportation Authority runs bus line 71 along Piedmont Road and bus line 61 along Berryessa Road (Valley Transportation Authority, n.d.).

### Discussion

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

#### Construction

The project would have a less than significant effect on the impact described. Construction of the project would generate a temporary increase in vehicle trips by construction workers and by trucks transporting material to and from the project site. Over the course of the 5-year construction period, the number of truck trips would vary, but for purposes of this analysis, it is assumed there would be approximately 3 truck trips per day on average. Trucks and vehicles would use Whitman Way, Piedmont Road, and Berryessa Road to access the project site. The

[6] Class II (basic) bike lanes provide dedicated on-street space for bicyclists in the roadway, delineated with painted pavement stripes and symbols on the roadway surface. Class II (buffered) bike lanes have a striped buffer area between bicycle and general-purpose travel lanes (City of San Jose 2020).

project would not require full or partial closure of any streets or their associated bicycle routes and public transportation facilities. Equipment and vehicle staging would occur within the project site and on an established offsite staging area, and no material staging would occur within public roads. There would be no temporary closure or disruption of roads, lanes, bicycle lanes, or public transportations routes as a result of project construction. Project construction would not conflict with policies, plans, ordinances, or programs addressing the performance of the circulation system, and impacts would be **less than significant**.

**Operation**

No, the project would not have the impact described. The project facilities would replace existing RMS facilities, and operation of the project would not change the number of employees on the project site. Implementation of the project would reduce the volume of dewatered solids for off-site disposal, which would require fewer off-haul truck trips during operation. Because operation of the project would not generate any operational traffic or affect any roadways, the project would not conflict with a program, plan, ordinance, or policy addressing the circulation system including transit, roadway, bicycle or pedestrian facilities. **No impact** would occur.

#### b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

The project would have a less than significant effect on the impact described. During project construction, vehicle miles traveled would temporarily increase because of construction worker vehicles trips, truck trips, and equipment transport. The project would require an average of 30 workers onsite per day during construction. Construction would temporarily generate 60 vehicle trips per day as workers would travel to the site in the morning and leave the site in the afternoon. Operation of the project would require the same number of employees as the existing RMS facilities, and operation would not generate any additional vehicle trips. According to the Governor's Office of Planning and Research, small projects that generate or attract fewer than 110 trips per day may be assumed to cause a less than significant impact in regards to vehicle miles traveled per CEQA Guidelines section 15064.3(b) (Governor's Office of Planning and Research 2018). Because the construction would temporarily generate 60 vehicle trips per day and operation would generate no increase in vehicle trips, the project would generate fewer than 110 trips per day. Therefore, the project would not generate an increase in vehicle miles traveled that would conflict or be inconsistent with CEQA Guidelines section 15064.3(b). The impact would be **less than significant**.

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

No, the project would not have the impact described. The project would be accessed from existing public roads and would not alter the physical configuration of the existing roadway network serving the area and would not introduce unsafe design features. Construction of the project would temporarily increase traffic to the site by up to approximately 3 truck trips per day on average but would not include any design features that would introduce incompatible uses that might introduce a safety hazard to circulation. No new roadways or access roads

would be constructed for the project. Therefore, the project would not result in an increase of hazards due to design features or incompatible uses. **No impact** would occur.

#### d) Result in inadequate emergency access?

No, the project would not have the impact described. Construction of the project would occur within the project site at the existing PWTP. No lane closures or detours would be required and emergency access to the project site, and the surrounding vicinity would be maintained. The temporary increase in traffic due to project construction would not cause a significant increase in traffic volume on roadways in the area. The project would not require the partial or full closure of any public roads. Project operation would not increase the amount of traffic to the site that could affect any emergency access to the area and would not generate impacts on the transportation network that could impact emergency access. For those reasons, the project would have **no impact**.

### Mitigation Measures

No mitigation required.

## 4.2.18 Tribal Cultural Resources

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **18. 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 section 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | ☐ | ☐ | ☐ | ☒ |

### Environmental Settings

Effective July 2015, Assembly Bill (AB52) requires (1) a lead agency to provide notice to any California Native American tribes that have requested notice of projects proposed by the lead agency, and (2) if a tribe requests consultation within 30 days upon receipt of the notice, the lead agency to consult with the tribe. ~~As of this time, Valley Water has not received written requests from any California Native American Tribes to receive such notifications~~.

CEQA section 21074.2 requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on a national, State, or local register of historical resources.

Two California Native American tribes, specifically Muwekma Ohlone Indian Tribe and Tamien Nation, had previously requested to be notified of Valley Water projects. Valley Water sent notification to these two tribes on August 25, 2023 in compliance with AB 52. The notification

letters are provided in Appendix G. No responses were received from ~~any~~ the tribes. Therefore, no AB 52 consultation is required for the project.

### Discussion

**a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

No, the project would not have the impact described.

Based on the response from the NAHC and absence of any comments from Native Americans noting the presence of tribal cultural resources within the project site, no tribal cultural resources are known to occur within the site. In addition, the project would be located primarily within the existing disturbance footprint of the existing facilities that would be replaced by the project. Due to the absence of tribal cultural resources within the project site, the project would have **no impact** on tribal cultural resources.

### Mitigation Measures

No mitigation required.

### 4.2.19 Utilities and Service Systems

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **19. 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 wastewater 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? | ☐ | ☐ | ☒ | ☐ |

#### Environmental Settings

The project site is located in the City of San Jose. Existing utility service to the site includes electrical service by Pacific Gas & Electric. The PWTP is an existing water treatment facility and water is supplied to the project on site. Wastewater service is provided by the San Jose-Santa Clara Regional Wastewater Facility. The landfills and transfer station that serve the City of San Jose include California Waste Solutions, Guadalupe Rubbish Disposal Company, Kirby Canyon Landfill, Newby Island Sanitary Landfill, and Zanker Road Landfill. The nearest landfill to the project site is Newby Island Sanitary Landfill, located 6.4 miles from the site.

The California Integrated Waste Management Act of 1989 (Public Resources Code, Division 30), enacted through Assembly Bill 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by 2000, and to divert at least 75 percent of generated waste (based on per capita disposal rates) by 2020. A jurisdiction's diversion rate is the percentage of the total waste that a jurisdiction diverts from disposal through reduction and recycling programs. The law

requires all California counties, in coordination with their respective cities, to develop and implement integrated waste management plans. As part of these plans, counties must ensure that a minimum of 15 years of disposal capacity is available to serve the county and its cities.

### Discussion

**a) Would the Project 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?**

**Water**

The project would have a less than significant effect on the impact described. The project would upgrade the existing RMS facilities at PWTP. Upgrades of the RMS facilities would allow the PWTP to operate at its permitted design capacity and would not expand the treatment capacity of the PWTP as the project would not change any treatment process infrastructure. The project would result in increased recycling and efficiency in water treatment operations. The impact on water utilities would be beneficial and **less than significant**.

**Wastewater**

No, the project would not have the impact described. The project would not generate any wastewater. Solids removed during the dewatering process would be thickened and removed from the site by truck and would not create any wastewater. Process water recycled in the RMS process would be returned to the PWTP for treatment to increase water recycling and efficiency. The project would have **no impact** on wastewater facilities.

**Stormwater Drainage**

The project would have a less than significant effect on the impact described. The existing storm water drainage infrastructure is located off site, and the project would not modify the stormwater drainage. The project would comply with the Stormwaer Construction General Permit and MRP.3 requirements and would not result in increased stormwater drainage. The project would have a **less than significant** impact on stormwater drainage facilities.

**Electrical Power**

The project would have a less than significant effect on the impact described. Operation of the project would require approximately 300,000 kWh annually relative to existing conditions of electric power. Power would be supplied from the existing PG&E electrical distribution lines serving the PWTP. The increased energy demand for the project would not require any new or expanded electrical service. The project would have a **less than significant impact** on electrical power facilities.

**Natural Gas**

No, the project would not have the impact described. Construction of the project would require the use of generators to power some construction equipment. During operation of the project, a new separate standby generator, using up to 500 horsepower motors, would provide backup power for critical equipment in the event of power interruptions, for the sludge holding and dewatering facilities. An existing on-site standby generator would provide backup power for

the sedimentation basin and washwater handling and treatment facilities. The standby generators would be tested monthly for 2 hours. No other natural gas would be used or required during operation of the project, and therefore no expansion of new natural gas services would be required. The project would have **no impact** on natural gas facilities.

**Telecommunication Facilities**
No, the project would not have the impact described. The project would not modify any telecommunication facilities or require new telecommunication facilities. The project would have **no impact** on telecommunication facilities.

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

No, the project would not have the impact described. During construction, the project would use a small amount of water from the on-site treatment system for dust control during grading and to support compaction during excavation. Operation of the project would increase efficiency of the RMS facilities by reducing the amount of water in the thickened solids and resulting in increased recycling of water at the facility. Operation of the project would not require more water than the existing RMS facilities. The project would not affect existing water supply entitlements, nor would it require new or expanded entitlements. Accordingly, **no impact** would occur.

**c) Would the project result in a determination by the wastewater 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?**

No, the project would not have the impact described. The project would consist of upgrading existing RMS facilities and would not generate any wastewater. Because the project would not produce any wastewater, it would not affect wastewater capacity and there would be **no impact**.

**d) and Would the project 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?**

The project would have a less than significant effect on the impact described. Construction of the project would generate approximately 16,000 cubic yards of soil during excavation and approximately 1,050 cubic yards of solid waste during demolition of facilities. Waste generated by the project would be processed at the Newby Island Sanitary Landfill located approximately 6.4 miles from the project site. The Newby Island Sanitary Landfill has a permitting capacity of 4,000 tons per day and accepts contaminated soil, green materials, tires, sludge, mixed municipal waste, industrial waste, construction/demolition waste. The landfill is permitted to operate until 2041 (CalRecycle, n.d.). The project would not significantly impact the 4,000 ton daily permitted capacity at the Newby Island Sanitary Landfill. Construction waste may generate hazardous waste including used oil or grease and lead and asbestos from structure demolition.

The project would improve the RMS thickening and dewatering processes and reduce the volume of dewatered solids for off-site disposal compared to the existing operation.

The project would not generate solid waste in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals; therefore, impacts would be **less than significant**.

**e) Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

The project would have a less than significant effect on the impact described. Construction of the project would generate demolition waste including concrete, asphalt, piping, metals, and wood waste, as summarized in Table 2.5-1 in the project description. At least 65 percent of the demolition waste would be recycled as required by California Green Building Standards Code (Building Standards Commission 2022). All hazardous waste would be required to be disposed of at the nearest Class I landfill that is authorized to accept hazardous waste (see details on the management and transportation of hazardous waste in Section 3.2.9 Hazards and Hazardous Materials). The project would comply with federal, State and local management and reduction statutes and regulations related to solid waste; therefore, the impact would be **less than significant**.

### Mitigation Measures

No mitigation required.

### 4.2.20 Wildfire

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **20. 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? | ☐ | ☐ | ☐ | ☒ |

#### Environmental Settings

The project site is not located within a state responsibility area or lands classified as a very high fire hazard severity zone (CAL FIRE, n.d.). Areas classified as high fire hazard severity zone are located approximately 0.65 mile northwest of the project site, and areas of very high fire hazard severity zone in a Local Responsibility Area are located approximately 0.41 mile west of the site (California Department of Forestry and Fire Protection (CAL FIRE)), n.d.). The project site is located within the City of San Jose's Wildland-Urban Interface, which is a transitional area between development and undeveloped wildland that are vulnerable to fires given their proximity to vegetative fuels and an indicator to residents who reside within the WUI to take actions to prepare for a potential wildfire (City of San Jose, n.d.-c).

### Discussion

a) **Would the Project 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) **Would the Project 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?**

No, the project would not have the impact described. The project site is not within or near a state responsibility area or within a very high fire hazard severity zone. As such, the project will have **no impact** to issues a-d. Refer to Section 4.2.8 for potential impacts from wildfire during construction and operation of the project.

### Mitigation Measures

No mitigation required.

## 4.2.21 Mandatory Findings of Significance

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **21. 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? | ☐ | ☒ | ☐ | ☐ |

### Discussion

**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?**

The project would have a less than significant effect on the impact described with implementation of mitigation. Please refer to the impact discussions presented in Sections 4.2.1 through 4.2.20, in particular the impact analysis for Biological Resources (Section 4.2.4), Cultural Resources (Section 4.2.5), and Tribal Cultural Resources (Section 4.2.18). Valley Water's implementation of applicable biological BMPs, HVP conditions, and mitigation measures as proposed in this Mitigated Negative Declaration would avoid or minimize these impacts such that the project would not 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. Therefore, with mitigation measures BIO-1, BIO-2, BIO-3 and CUL-1, BMPs, and VHP conditions, the impact would be **less than significant with mitigation**.

**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)?**

The project would have a less than significant effect on the impact described with implementation of mitigation. Section 15064(h)(1) of CEQA Guidelines states that a lead agency shall consider whether the cumulative impact is significant, and the incremental effects of the project are cumulatively considerable. A lead agency may determine that a project's incremental contribution would be less-than-cumulatively considerable when one or more of the following occur: 1) the contribution would be rendered less-than-cumulatively considerable through implementation of mitigation measures; 2) the project would comply with the requirements of a previously approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the project's cumulative effects; and/or 3) the project's incremental effects would be so small that the environmental conditions would be essentially the same regardless of whether the project is implemented.

The project could contribute to cumulative impacts of other projects within the City of San Jose. Cumulative projects located in proximity to the proposed project include the following:

- Valley Water security upgrades at the PWTP including CCTV and access control systems, replacement of the fence around the PWTP with tight weave climb/tamper resistant material and barbed wire, and improved lighting within the facility. The security upgrades at the PWTP are scheduled to occur in 2027. The security upgrades would be subject to separate future CEQA review and separate approval by Valley Water.
- Valley Water addition of an additional sulfuric acid injection point at the PWTP for water treatment. The project would add a new vault, aboveground raw water pipeline, and pump for the injection point. Construction is estimated to start in June 2026 and would last one year.
- Hengli 6, LLC, Suncrest Avenue Planned Development Project: The Suncrest Avenue Planned Development Project includes development of 15 residential lots directly adjacent the PWTP site boundary/fenceline and south of Suncrest Avenue and an additional 33 residential lots north of Suncrest Avenue with a new street and extension of infrastructure to serve the residential development. The timeframe for development of the Suncrest Avenue Planned Development Project is unknown. The applicant has filed plans, but the CEQA review process for the project has not started.
- 905 North Capitol Avenue Project, approximately 1.6 miles southwest of the project site. The 905 North Capitol Avenue project includes the construction of a seven-story 350-unit apartment building and a three-story, 32-unit townhome building (City of San Jose, n.d.-a). The 905 North Capitol Avenue Project is currently under pre-construction review.

The analysis in this Initial Study indicates the project would have no impact on agricultural and forestry resources, land use and planning, mineral resources, population and housing, public services, recreation, tribal cultural resources, or wildfire and would thus not contribute to any cumulative impacts on those resources. The potential for cumulative impacts on the remaining resource topics is addressed below.

**Aesthetics**

The Suncrest Avenue Planned Development includes lots on the south side of Suncrest Avenue, residential development in the area would block views of the project from Suncrest Avenue due to the height of residential structures and closer proximity to the public road viewpoint. Because the residential development would block views of the project, the project would not contribute to cumulative impacts on aesthetics when considered in combination with cumulative projects and the cumulative impact would be **less than significant.**

**Air Quality and Greenhouse Gases**

Air quality and greenhouse gases are cumulative impacts by their nature. The thresholds established by BAAQMD for air quality and greenhouse gases consider cumulative impacts. Because the project would not exceed any threshold established by BAAQMD for air quality or greenhouse gases, the project would not contribute considerably to any regional or global cumulative impact on air quality or greenhouse gases and the impact would be **less than significant**.

**Biological Resources**

The project would involve minor extension of the developed PWTP infrastructure into an area containing serpentine bunchgrass grasslands. The security project at the PWTP is a linear project that would replace an existing fence and would not impact biological resources. The sulfuric acid injection project would be located in developed areas and would not impact biological resources. The 905 Capitol Avenue building is in a developed area and would not result in impacts on biological resources. The types of vegetation communities that occur within the project impact area likely also occur within the Suncrest Avenue Planned Development Project. The project is a covered activity under the VHP and the Suncrest Avenue Planned Development Project would also require coverage under the VHP. Because the VHP provides regional mitigation for impacts on biological resources, including special status species and serpentine bunchgrass grassland, the cumulative impact on special status species and serpentine bunchgrass grassland would be **less than significant**.

**Cultural Resources**

No cultural resources have been recorded in the project site or in the cumulative project development area for the PWTP security upgrades, sulfuric acid injection, or the Suncrest Avenue Planned Development. Because no cultural resources are known to occur in the area, **no cumulative impact** on cultural resources would occur.

**Energy**
Operation of the project would result in increased efficiency and reduced truck travel through increased dewatering of solids. Because the project would increase efficiency, **no cumulative impact** on energy resources would occur.

**Geology and Soils**
A cumulative impact on geology and soils could occur if the project in combination with one or more cumulative projects exacerbated a geologic hazard. The security project at the PWTP involves replacement of a fence and would not contribute to cumulative impacts on geology or soils. The sulfuric acid injection project would only involve a small vault and would not impact geologic resources. The project at 905 Capitol Avenue does not have the potential to contribute to cumulative geology and soils impacts in combination with the project due to the distance between the project and the 905 Capitol Avenue. The project and Suncrest Avenue Development could cause a significant cumulative impact on geology and soils if the projects were to exacerbate the existing landslide in the area or cause substantial erosion and the potential exists for a significant cumulative impact as a result of the Suncrest Avenue Development.

As discussed in the geology and soils section, the project would implement geotechnical engineering measures to ensure the design addresses the existing landslide conditions in the area. The project and Suncrest Avenue Development will not be constructed concurrently and would not contribute to cumulative construction related impacts on erosion. The project would also implement C.3 hydrologic design requirements to avoid erosion during operation. Because the project incorporates proper design measures to address landslide hazards and C.3. permit requirements, the project's contribution to a cumulative impact on geology and soils would be less than cumulatively considerable and therefore **less than significant**.

**Hazards and Hazardous Materials**
Impacts on hazards and hazardous materials would only be cumulative within a 1-mile area because hazardous materials typically do not transfer in soil or groundwater over 1 mile. The project and cumulative projects would not create any new substantial sources of hazards or hazardous materials. Construction of each project would be subject to State of California and federal laws governing use of hazardous materials. Because the projects would be expected to comply with State and federal laws, the cumulative impact on hazards and hazardous materials would be **less than significant**.

**Hydrology and Water Quality**
Construction of the project would potentially overlap with construction of the security upgrades at the PWTP. Both the project and security upgrades at the PWTP would implement Valley Water BMPs including BMPs WQ-4, WQ-5 WQ-9, WQ-11, and WQ-16. BMP WQ-4 would ensure that staging and stockpiled materials are properly contained and maintained to avoid any soil erosion from stockpiles. BMPs WQ-5, BMP WQ-9, BMP WQ-11, and BMP WQ-16 would ensure that the overall construction site is properly maintained and in clean condition and that construction entrances/exits and all other disturbed ground would be stabilized to

prevent sedimentation or erosion. With implementation of Valley Water BMPs, the cumulative impact during construction would be **less than significant**.

Future operation of the project would include a small increase in the impervious surface at the project site. As discussed in the project description and Hydrology and Water Quality sections, the project would comply with C.3 permit requirements. Because the project would comply with C.3 permit requirements, the project would have a less than considerable contribution on any future water quality impact and the cumulative impact would be **less than significant**.

**Noise**

The project would generate noise from heavy equipment operation during construction. Construction of the project may overlap with the security upgrades at the PWTP and the sulfuric acid injection project construction. The project will be coordinated with the PWTP security upgrades and sulfuric acid injection to ensure that the construction happens in a safe manner and the upgrades would not occur in the same areas as the project construction at the same time. Because noise and vibration attenuate with distance and the project would implement Mitigation Measure NOI-1 and NOI-2, the project and security upgrades would result in a **less than significant** cumulative impact on noise with implementation of the project mitigation measures.

**Transportation**

The temporary increase in truck traffic generated during construction of the project could potentially overlap with the construction of the PWTP security upgrades and sulfuric acid injection project. Replacement of the security fence and installation of increased security systems at the PWTP and construction of the sulfuric acid injection project would generate a very low volume of traffic. Neither the project, the PWTP security upgrades, nor the sulfuric acid injection project would be located within any road or would require any road closure. The impact from the project construction in combination with the PWTP security upgrades and sulfuric acid injection project on transportation would be **less than significant**.

**Utilities and Service Systems**

The project would generate a small volume of solid waste during construction. The project operation would result in a net decrease in waste generation due to the increased dewatering of solids. Because of the small volume of waste generated during construction and the net decrease in waste generation during operation, **no cumulative impact** on utilities or service systems would occur.

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

The project would have a less than significant effect on the impact described with implementation of mitigation. The above analysis shows that the project would not result in significant impacts with the incorporation of mitigation measures. While the analysis finds that the project would result in some adverse impacts to air quality, noise, geology and soils, hazards and hazardous materials, and hydrology and water quality, mitigation measures along

with BMPs have been identified to reduce the impact to a less than significant level. Therefore, the proposed project would not indirectly or directly result in significant adverse effects on human beings, either indirectly or directly. As such, the project would have a less than significant effect on human beings following implementation of aforementioned mitigation measures.

### Mitigation Measures

Mitigation Measures AQ-1, AQ-2, BIO-1, BIO-2, BIO-3, CUL-1, HAZ-1, HAZ-2, NOI-1, and NOI-2.

# 5 List of Preparers

## 5.1 List of Preparers

**Table 5.1-1 Valley Water Contributors**

| Contributor | Role |
|---|---|
| Mike Coleman | Project Manager, Environmental Planner |
| Katrina Jessop, PE | Senior Engineer, Program Manager |
| Donnalyn Steffani, PE | Assistant Engineer II |

**Table 5.1-2 Third Party Consultant Preparers**

| Contributor | Role |
|---|---|
| Susanne Heim | Project Manager: QA/QC, Project Description, Mandatory Findings of Significance |
| Charlotte Hummer | Deputy Project Manager: Aesthetics, Air Quality, Cultural Resources, Energy, Geology and Soils, GHG, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Tribal Cultural Resources |
| Cassidy Cunningham | Agricultural and Forestry Resources, Biological Resources, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, Transportation, Utilities and Service Systems, Wildfire, Mandatory Findings of Significance |
| HT Harvey | Biological Resources |
| Far Western | Cultural Resources |
| RCH | Air Quality, Greenhouse Gases, Noise |

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Santa Clara Valley Water District

# Penitencia Water Treatment Plant (PWTP) Residuals Management Project

# Final Initial Study/Mitigated Negative Declaration

## Volume II – Appendices

**December 2024**

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# APPENDIX A

## Mitigation Monitoring and Reporting Plan

**Table 1 Mitigation Monitoring and Reporting Program**

| Impact Area | Mitigation Measure | Responsibility for Implementation | Responsibility for Monitoring and/or Enforcement | Timing of Implementation |
|---|---|---|---|---|
| **Air Quality** | | | | |
| **Impact AIR-B:** Would the project 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? | **Mitigation Measure AQ-1: Dust Control**<br>The contractor shall implement the following dust control measures consistent with BAAQMD Guidelines:<br>• All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.<br>• All trucks and equipment, including their tires, shall be washed off prior to leaving the site.<br>• Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted wood chips, mulch, or gravel. | • Contractor | • Valley Water | • Construction |
| **Impact AIR-C:** Would the project expose sensitive receptors to substantial pollutant concentrations? | **Mitigation Measure AQ-2: Construction Equipment Air Quality Standards**<br>The contractor shall implement the following measures during construction to reduce construction exhaust emissions:<br>• All construction equipment larger than 50 horsepower used at the project site for more than two continuous days or 20 hours total shall utilize diesel engines that are USEPA certified "Tier 4 final" emission standards for particulate matter and equipped with CARB-certified Level 3 Diesel Particulate Filters. The construction contractor shall submit specifications of the equipment to be used during construction and Valley Water shall confirm the equipment meets this requirement/standard.<br>• Equipment such as air compressors, concrete/industrial saws, forklifts, light stands, manlifts, pumps, and welders shall be electric or alternative-fueled (i.e., non-diesel), where feasible. Pole power shall be utilized at the earliest feasible point in time and shall be used to the maximum extent feasible in lieu of generators. If stationary construction equipment, such as diesel-powered generators, must be operated continuously, such equipment must be Tier 4 Final construction equipment or better and located at least 100 feet from air quality sensitive land uses (e.g., residences, schools, childcare centers, hospitals, parks, or similar uses), whenever possible.<br>• At a minimum, construction vendors, contractors, and/or haul truck operators commit to using 2010 model year trucks (e.g., material delivery trucks and soil import/export with a gross vehicle weight rating of at least 14,001 pounds), that meet CARB's 2010 engine emissions standards or newer, cleaner trucks. | • Contractor | • Valley Water | • Construction |
| **Biological Resources** | | | | |
| **Impact BIO-A**: Would the Project 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 Game or U.S. Fish and Wildlife Service?<br>**Impact BIO-B:** Would the Project 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 Game or US Fish and Wildlife Service?<br>**Impact BIO-C:** Would the Project 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?<br>and<br>**Impact BIO-D:** Would the Project 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? | **Mitigation Measure BIO-1: Off-Site Staging Areas**<br>Valley Water shall conduct a pre-activity biological resource survey of any off-site staging area containing vegetation. The pre-activity survey will document the presence or absence of suitable habitat for special status plants and wildlife, riparian areas, sensitive vegetation communities, or native wildlife nursery sites. Any suitable habitat for special status plants or wildlife, riparian areas, sensitive vegetation communities, wetlands, or wildlife nursery sites within the staging area shall be delineated for avoidance by staging activities. If any breeding activity for special status wildlife species is observed within or in proximity to the staging area, a no activity buffer from the special status species shall be defined by a qualified biologist. Staging activities shall not be allowed within the no activity buffer until the nesting activity has ceased as documented by a qualified biologist. | • Valley Water | • Qualified Biologist | • Prior to Construction |
| **Impact BIO-A**: Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in | **Mitigation Measure BIO-2: Crotch's Bumble Bee Avoidance**<br>Two nesting surveys shall be conducted for Crotch's bumble bee with focus on detecting active nesting colonies within one week and 24-hours immediately prior to ground disturbing activities during the flight season (February to October). If an active | • Valley Water | • Qualified Biologist | • Prior to Construction |

| Impact Area | Mitigation Measure | Responsibility for Implementation | Responsibility for Monitoring and/or Enforcement | Timing of Implementation |
|---|---|---|---|---|
| local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | Crotch's bumble bee nest is detected, an appropriate no disturbance buffer zone (including foraging resources and flight corridors essential for supporting the colony) shall be established around the nest to reduce the risk of disturbance or accidental take. Nest avoidance buffers may be removed at the completion of the flight season and/or once the qualified biologist deems the nesting colony is no longer active and CDFW has provided concurrence of that determination. If no nests are found but the species is present, a full-time qualified biological monitor shall be present during vegetation removal or ground disturbing activities that are scheduled to occur during the queen flight period (February through March), colony active period (March through September), and/or gyne flight period (September through October). | | | |
| **Impact BIO-A**: Would the Project 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 Game or U.S. Fish and Wildlife Service? | **Mitigation Measure BIO-3: San Francisco Dusky Footed Woodrat Avoidance**<br>A preconstruction survey will be performed by a qualified biologist within seven days prior to the start of ground-disturbing activities to identify the locations of active San Francisco dusky-footed woodrat nests within the project boundary. Any woodrat nests detected will be mapped and flagged for avoidance by the qualified biologists. If active nests are determined to be present, avoidance measures will be implemented first. Because San Francisco dusky-footed woodrats are year-round residents, avoidance mitigation is limited to restricting project activities to avoid direct impacts to San Francisco dusky-footed woodrats and their active nests to the extent feasible. A minimum 10-foot buffer should be maintained between project construction activities and each nest to avoid disturbance. In some situations, a smaller buffer may be allowed if, in the opinion of the qualified biologist, removing the nest would be a greater impact than that anticipated as a result of project activities.<br>If an unoccupied woodrat nest is found within the site and it cannot be avoided, the nest should be disassembled by hand by the qualified biologist. The nest materials should be relocated off site outside of the wildlife exclusion fencing to prevent rebuilding. If occupied nests are found within the site, and a litter of young is found or suspected, the nest shall be left alone for two to three weeks before a recheck to verify that young are capable of independent survival before proceeding with nest dismantling. Dismantling shall be done by hand, allowing any animals to escape either along existing woodrat trails or toward other available habitat. Valley Water will notify CDFW of any nests, unoccupied or occupied, before they are dismantled. | • Valley Water | • Qualified Biologist | • Prior to Construction |
| **Cultural Resources** | | | | |
| **Impact CUL-A:** Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to section 15064.5?<br>and<br>**Impact CUL-B:** Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? | **Mitigation Measure CUL-1 Pre-Activity Survey of Off-Site Staging Area**: Prior to use of any undeveloped off-site staging area, a qualified archaeologist shall conduct a pedestrian cultural resource survey of the staging area. If any archaeological resources including historic era or pre-contact resources are identified within the staging area, an environmentally sensitive area, including a minimum 15-foot buffer from the outer limits of any cultural resource, shall be delineated and excluded from staging activities. The environmentally sensitive area shall be staked and marked for avoidance to ensure avoidance of damage to cultural resources | • Valley Water | • Qualified Archeologist | • Prior to Construction |
| **Geology and Soils** | | | | |
| **Impact GEO-F:** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | **MM GEO-1: Unanticipated Discovery of Paleontological Resources**<br>Preconstruction worker awareness training will be conducted for the awareness and accidental discovery of paleontological resources during construction. If paleontological resources are discovered during construction, all work must halt within a 100-foot radius of the discovery, and a qualified paleontologist will be retained to evaluate the find. The paleontologist shall notify Valley Water if the find is significant. The paleontologist shall evaluate the significance of the find and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The qualified paleontologist will evaluate the significance of the find and recommend appropriate measures for the disposition of the find (e.g., fossil recovery, curation, data recovery, monitoring). Construction activities may continue on other parts of the construction site while evaluation and treatment of the paleontological resource takes place. | • Contractor | • Valley Water | • Prior to Construction |
| **Hazards and Hazardous Materials** | | | | |
| **Impact HAZ-A:** Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?<br>and | **Mitigation Measure HAZ-1 – Sampling and Waste Management:** The project would adhere to the following testing, sampling, and handling procedures during construction:<br>• A soil and groundwater quality investigation shall be conducted to evaluate subsurface conditions in any proposed excavation or construction area to evaluate potential impacts from the project, including evaluation of soil management options for materials produced during exaction and construction and potential health and safety impacts to the project workers. Samples | • Contractor | • Valley Water | • Construction |

| Impact Area | Mitigation Measure | Responsibility for Implementation | Responsibility for Monitoring and/or Enforcement | Timing of Implementation |
|---|---|---|---|---|
| **Impact HAZ-B:** Would the project 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? | shall be analyzed for petroleum hydrocarbons (including gasoline, diesel, and oil), VOCs, polychlorinated biphenyls, semi-volatile organic compounds, PCBs, organochlorine pesticides, and metals. If groundwater is encountered prior to the final depth, then a groundwater sample shall be taken. Groundwater samples collected from the borings should be analyzed for petroleum hydrocarbons, VOCs, dissolved metals, and pH.<br>• The results of the soil and groundwater investigation shall be reported to Valley Water. Excavated soil will be segregated, staged, labeled/marked, and properly managed as appropriate per the result of the soil and groundwater investigation in a manner that complies with applicable regulations and to facilitate proper disposal.<br>• Valley Water will give contractor written notice to dispose of all or a portion of the waste material at a Class I disposal site if the Engineer determines that such disposal is required based on review of contractors waste characterization and the analytical results of samples collected.<br>• Transport materials and/or wastes in accordance with all local, State, and federal laws, rules, and regulations.<br>• Contractor shall not assume any soil is approved for offsite reuse. Off-site reuse is only permitted with explicit approval from Valley Water after a careful review of the contractor's proposed reuse and soil testing results. | | | |
| **Impact HAZ-A:** Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?<br>**Impact HAZ-B:** Would the project 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?<br>and<br>**Impact HAZ-C:** Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | **Mitigation Measure HAZ-2 - Asbestos and Lead-based Paint:**<br>Demolition of the project structures and facilities shall comply with the OSHA Standard 1926.6 related to lead abatement and all other applicable State and federal requirements for the safe handling and disposal of lead-based paint, ACM, and universal wastes. The project contractor shall implement the measures described below.<br>***Lead-based Paint***<br>As lead was identified in the paints on existing PWTP facilities, all coated surfaces shall be considered to contain some lead and require demolition dust control procedures and presumed respiratory protection usage for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR section 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the detected presence of any levels of lead.<br>None of the applicable regulations require removal of lead paint prior to demolition if the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal of the demolition debris in this case can be handled as non-hazardous and non-RCRA waste after the loose and flaking paint have been removed as long as demolition practices do not compromise worker safety and waste stream characterization testing has been performed by the contractor on the entire waste stream for verification.<br>Conventional demolition techniques shall be employed for all painted surfaces, with the Contractor complying with applicable OSHA and Cal/OSHA statutes regarding the following:<br>• Worker awareness training<br>• Exposure monitoring, as needed<br>• Medical examinations, which may include blood lead level testing<br>• Establishing a written respiratory protection program<br>***Asbestos***<br>Any suspected asbestos material at the project site not sampled or not visually identified as negative by the testing and sampling procedures shall be assumed to contain asbestos and require destructive testing prior to demolition. Inspections in California are required to be conducted by a Certified Asbestos Consultant (CAC) or by a Certified Site Surveillance Technician (CSST) working under a CAC. In the absence of testing, the materials should be assumed to contain asbestos and disposed of in accordance with OSHA standard 1926.6. | • Contractor | • Valley Water | • Construction |
| **Hydrology and Water Quality** | | | | |
| **Impact HYD-A:** Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? | **Mitigation Measure HAZ-1 – Sampling and Waste Management:** The project would adhere to the following testing, sampling, and handling procedures during construction:<br>• A soil and groundwater quality investigation shall be conducted to evaluate subsurface conditions in any proposed excavation or construction area to evaluate potential impacts from the project, including evaluation of soil management options for materials produced during exaction and construction and potential health and safety impacts to the project workers. Samples shall be analyzed for petroleum hydrocarbons (including gasoline, diesel, and oil), VOCs, polychlorinated biphenyls, semi-volatile organic compounds, PCBs, organochlorine pesticides, and metals. If groundwater is encountered prior to the final | • Contractor | • Valley Water | • Construction |

| Impact Area | Mitigation Measure | Responsibility for Implementation | Responsibility for Monitoring and/or Enforcement | Timing of Implementation |
|---|---|---|---|---|
| | depth, then a groundwater sample shall be taken. Groundwater samples collected from the borings should be analyzed for petroleum hydrocarbons, VOCs, dissolved metals, and pH.<br>• The results of the soil and groundwater investigation shall be reported to Valley Water. Excavated soil will be segregated, staged, labeled/marked, and properly managed as appropriate per the result of the soil and groundwater investigation in a manner that complies with applicable regulations and to facilitate proper disposal.<br>• Valley Water will give contractor written notice to dispose of all or a portion of the waste material at a Class I disposal site if the Engineer determines that such disposal is required based on review of contractors waste characterization and the analytical results of samples collected.<br>• Transport materials and/or wastes in accordance with all local, State, and federal laws, rules, and regulations.<br>• Contractor shall not assume any soil is approved for offsite reuse. Off-site reuse is only permitted with explicit approval from Valley Water after a careful review of the contractor's proposed reuse and soil testing results. | | | |
| **Noise** | | | | |
| **Impact NOI-A:** Would the project generate 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? | **Mitigation Measure NOI-1: Noise Barriers**<br>Prior to demolition occurring at the Washwater Recovery Ponds, Valley Water will install a temporary 12-foot-tall construction noise barrier as close as feasible to the southernmost Washwater Recovery Pond demolition and construction activities to shield the residential receptors to the south on El Grande Drive. The noise barrier shall be equipped with exterior-rated quilted sound blankets that are a minimum of 2 inches thick. There may be some periods of construction when the noise barrier may be temporarily moved or dismantled to accommodate the movement of heavy equipment and work crews within the immediate project construction area. Valley Water will schedule any dismantling or moving of the noise barrier to coincide with periods when construction activities will occur within the adopted construction hours of the City of San Jose (7:00 a.m. to 7:00 p.m.) and fall within the local noise requirements. The location of the temporary noise barrier is shown on Figure 4.2-9 or functional equivalent. | • Contractor | • Valley Water | • Prior to Construction |
| **Impact NOI-A:** Would the project generate 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? | **Mitigation Measure NOI-2: Notification**<br>Prior to the start of construction activities (major phases), Valley Water will provide written notification to all residents within 500 feet of the construction site. The notice shall include information on the estimated start date and duration of construction activities, hours of construction, and contact information (i.e., telephone number and email address)for the VW Construction Manager or assigned staff (e.g., Construction Noise Coordinator).Additional written notification to all residential units within 500 feet of the construction site shall be provided prior to nighttime construction activities (before 7:00 a.m. or after 7:00 p.m.) informing them of the estimated start date, duration, and hours of construction for nighttime construction activities. Written notification shall be provided at least one week prior to any nighttime construction activity.<br>The VW Construction Manager or assigned staff (Construction Noise Coordinator) will be responsible for responding to any local complaints about construction noise or vibration. Contact information (i.e., telephone number and email address) for the Construction Noise Coordinator shall be conspicuously posted along public roads adjacent to the construction site in addition to any written notifications to area residents. | • Valley Water | • Valley Water | • Prior to Construction |
| **Impact NOI-B:** Would the project generate excessive groundborne vibration or groundborne noise levels? | **Mitigation Measure NOI-3: Impact Pile Driver Setback**<br>Impact pile driver use shall be limited to locations 125 feet or greater from any off-site structure. Prior to use of any impact pile driver at the site, the contractor shall submit a pile driving plan to Valley Water that includes information on the type of pile drivers to be used and the location of the pile driver to demonstrate that the pile driver will be greater than 125 feet from any off-site residence. This measure does not apply to Vibratory Pile Drivers, Caisson Drilling, or Roller/Paving equipment. | • Contractor | • Valley Water | • Prior to Construction |

**Table 2 Valley Water Best Management Monitoring and Reporting**

| Impact | Best Management Practice | Responsibility for Implementation | Responsibility for Monitoring and/or Enforcement | Timing of Implementation |
|---|---|---|---|---|
| **Impact AIR-B:** Would the project 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 AQ B: Would the project 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? | **AQ-1 Use Dust Control Measures**<br>The following Bay Area Air Quality Management District (BAAQMD) Dust Control Measures will be implemented:<br>1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.<br>2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.<br>3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.<br>4. Water used to wash the various exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, etc.) will not be allowed to enter waterways.<br>5. All vehicle speeds on unpaved roads shall be limited to 15 mph.<br>6. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.<br>7. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure CCR Title 13, Section 2485), and this requirement shall be clearly communicated to construction workers (such as verbiage in contracts and clear signage at all access points).<br>8. All construction equipment shall be maintained and properly tuned in accordance with manufacturers specifications, and all equipment shall be checked by a certified visible emissions evaluator.<br>9. Correct tire inflation shall be maintained in accordance with manufacturers specifications on wheeled equipment and vehicles to prevent excessive rolling resistance.<br>10. Post a publicly visible sign with a telephone number and contact person at the lead agency to address dust complaints; any complaints shall be responded to and take corrective action within 48 hours. In addition, a BAAQMD telephone number with any applicable regulations will be included. | • Contractor | • Valley Water | • Construction |
| **Impact BIO-A:** Would the Project 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 Game or U.S. Fish and Wildlife Service? | **BI-5 Avoid Impacts to Nesting Migratory Birds**<br>Nesting birds are protected by state and federal laws. The District will protect nesting birds and their nests from abandonment, loss, damage, or destruction. Nesting bird surveys will be performed by a qualified biologist prior to any activity that could result in the abandonment, loss, damage, or destruction of birds, bird nests, or nesting migratory birds. Inactive bird nests may be removed with the exception of raptor nests. Birds, nests with eggs, or nests with hatchlings will be left undisturbed | • Valley Water | • Valley Water | • Construction |
| **Impact BIO-A:** Would the Project 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 Game or U.S. Fish and Wildlife Service? | **BI-6 Avoid Impacts to Nesting Migratory Birds from Pending Construction**<br>Nesting exclusion devices may be installed to prevent potential establishment or occurrence of nests in areas where construction activities would occur. All nesting exclusion devices will be maintained throughout the nesting season or until completion of work in an area makes the devices unnecessary. All exclusion devices will be removed and disposed of when work in the area is complete. | • Contractor | • Valley Water | • Construction |
| **Impact CUL-B:** Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?<br>and<br>**Impact CUL-C:** Would the Project disturb any human remains, including those interred outside of formal cemeteries | **CU-1 Accidental Discovery of Archaeological Artifacts, Tribal Cultural Resources, or Burial Remains**<br>If historical or unique archaeological artifacts or tribal cultural resources are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Work at the location of the find will halt immediately within 100 feet of the find. A "no work" zone shall be established utilizing appropriate flagging to delineate the boundary of this zone. A Consulting Archaeologist will visit the discovery site as soon as practicable for identification and evaluation pursuant to PRC section 21083.2 and CCR section 15126.4. If the archaeologist determines that the artifact is not significant, construction may resume. If the archaeologist determines that the artifact is significant, the archaeologist will determine if the artifact can be avoided and, if so, will detail avoidance procedures. If the artifact cannot be avoided, the archaeologist will develop within 48 hours an Action Plan, which will include provisions to minimize impacts and, if required, a Data Recovery Plan for recovery of artifacts in accordance with PRC section 21083.2 and Section 15126.4 of the CEQA Guidelines. If a tribal cultural resource cannot be avoided, the Action Plan will include notification of the appropriate Native American tribe and consultation with the tribe regarding acceptable recovery options. | • Contractor/ Valley Water | • Valley Water<br>• Qualified Archeologist | • Construction |

| Impact | Best Management Practice | Responsibility for Implementation | Responsibility for Monitoring and/or Enforcement | Timing of Implementation |
|---|---|---|---|---|
| | If burial finds are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Upon discovering any burial site as evidenced by human skeletal remains, the County Coroner will be immediately notified, and the field crew supervisor shall take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent. No further excavation or disturbance within 100 feet of the site or any nearby area reasonably suspected to overlie adjacent remains may be made except as authorized by the County Coroner, California Native American Heritage Commission, and/or the County Coordinator of Indian Affairs. | | | |
| **Impact HAZ-A:** Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?<br>**And Impact HAZ B:** Would the project 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? | **HM-7 Restrict Vehicle and Equipment Cleaning to Appropriate Locations**<br>Vehicles and equipment may be washed only at approved areas. No washing of vehicles or equipment will occur at job sites. | • Contractor | • Valley Water | • Construction |
| **Impact HAZ-A:** Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?<br>**And Impact HAZ B:** Would the project 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? | **HM-8 Ensure Proper Vehicle and Equipment Fueling and Maintenance**<br>No fueling or servicing will be done in a waterway or immediate flood plain unless equipment stationed in these locations is not readily relocated (i.e., pumps, generators).<br>1. For stationary equipment that must be fueled or serviced on site, containment will be provided in such a manner that any accidental spill will not be able to come in direct contact with soil, surface water, or the storm drainage system.<br>2. All fueling or servicing done at the site will provide containment to the degree that any spill will be unable to enter any waterway or damage riparian vegetation.<br>3. All vehicles and equipment will be kept clean. Excessive build-up of oil and grease will be prevented.<br>4. All equipment used in the bay or flood basin will be inspected for leaks each day prior to initiation of work. Maintenance, repairs, or other necessary actions will be taken to prevent or repair leaks, prior to use.<br>If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location will be done in a waterway or flood plain. | • Contractor | • Valley Water | • Construction |
| **Impact HAZ-A:** Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?<br>**And Impact HAZ B:** Would the project 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? | **HM-9 Ensure Proper Hazardous Materials Management**<br>Measures will be implemented to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.<br>1. Prior to entering the work site, all field personnel will know how to respond when toxic materials are discovered.<br>2. Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage.<br>3. Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials will not contact soil and not be allowed to enter surface waters or the storm drainage system.<br>4. All toxic materials, including waste disposal containers, will be covered when they are not in use and located as far away as possible from a direct connection to the storm drainage system or surface water.<br>5. Quantities of toxic materials, such as equipment fuels and lubricants, will be stored with secondary containment that is capable of containing 110 percent of the primary container(s).<br>6. The discharge of any hazardous or non-hazardous waste as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations will be conducted in accordance with applicable State and federal regulations.<br>In the event of any hazardous material emergencies or spills, personnel will call the Chemical Emergencies/Spills Hotline at 1-800-510-5151. | • Contractor | • Valley Water | • Prior to Construction<br>• Construction |
| **Impact GEO-B:** Result in substantial soil erosion or the loss of topsoil? | **WQ-9 Use Seeding for Erosion Control, Weed Suppression, and Site Improvement**<br>Disturbed areas shall be seeded with native seed as soon as is appropriate after activities are complete. An erosion control seed mix will be applied to exposed soils down to the ordinary high water mark in streams.<br>1. The seed mix should consist of California native grasses, (for example Hordeum brachyantherum; Elymus glaucus; and annual Vulpia microstachyes) or annual, sterile hybrid seed mix (e.g., Regreen™, a wheat x wheatgrass hybrid). | • Contractor | • Valley Water | • Construction |

| Impact | Best Management Practice | Responsibility for Implementation | Responsibility for Monitoring and/or Enforcement | Timing of Implementation |
|---|---|---|---|---|
| | 2. Temporary earthen access roads may be seeded when site and horticultural conditions are suitable, or have other appropriate erosion control measures in place. | | | |
| **Impact GEO-B:** Result in substantial soil erosion or the loss of topsoil? | **WQ-11 Maintain Clean Conditions at Work Sites**<br>The work site, areas adjacent to the work site, and access roads will be maintained in an orderly condition, free and clear from debris and discarded materials on a daily basis. Personnel will not sweep, grade, or flush surplus materials, rubbish, debris, or dust into storm drains or waterways.<br>For activities that last more than one day, materials or equipment left on the site overnight will be stored as inconspicuously as possible, and will be neatly arranged. Any materials and equipment left on the site overnight will be stored to avoid erosion, leaks, or other potential impacts to water quality<br>Upon completion of work, all building materials, debris, unused materials, concrete forms, and other construction-related materials will be removed from the work site. | • Construction | • Valley Water | • Construction |
| **Impact HYDRO-A:** Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? | **WQ-13 Protect Groundwater from Contaminates Via Wells or Exploratory Borings**<br>Any substances or materials that may degrade groundwater quality will not be allowed to enter any well or boring. Lubricants used on drill bits, drill pipe, or tremie pipe will not be comprised of oily or greasy substances or other materials that may degrade groundwater quality.<br>Well openings or entrances will be sealed or secured in such a way as to prevent the introduction of contaminants. | • Contractor | • Valley Water | • Construction |
| **Impact GEO-B:** Result in substantial soil erosion or the loss of topsoil? | **WQ-16 Prevent Storm Water Pollution**<br>To prevent stormwater pollution, the following measures will be implemented:<br>**1.** Soils exposed due to project activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. Areas below the ordinary high-water mark of the flood basin or below the mean higher high water line of the bay are exempt from this BMP.<br>**2.** The preference for erosion control fabrics will be to consist of natural fibers; however, steeper slopes and areas that are highly erodible may require more structured erosion control methods. No non-porous fabric will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff, but only if there are no indications that special status species would be impacted by the application.<br>**3.** Erosion control measures will be installed according to manufacturer specifications.<br>**4.** To prevent stormwater pollution, measures to be implemented as appropriate will include, but not be limited to, the following:<br>**i.** Silt fences<br>**ii.** Straw bale barriers<br>**iii.** Brush or rock filters<br>**iv.** Storm drain Inlet protection<br>**v.** Sediment traps or sediment basins<br>**vi.** Erosion control blankets and/or mats<br>**vii.** Soil stabilization (e.g., tackified straw with seed, jute, or geotextile blankets)<br>**viii.** Straw mulch<br>**5.** All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g. silt fences).<br>6. Surface barrier applications installed as a method of animal conflict management, such as chain link fencing, woven geotextiles, and other similar materials, will be installed no longer than 300 feet, with at least an equal amount of open area prior to another linear installation. | • Contractor | • Valley Water | • Construction |

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**Figure 4.2-1 Noise Monitoring Locations and Noise Barrier**

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# APPENDIX B

## Air Quality and Greenhouse Gas Modeling

# Appendix B

## Construction and Operational Emissions Inventory Supporting Information

- **Construction Summary**
- **Construction Employee and Haul Trucks**
- **Construction Offroad Equipment – Unmitigated**
- **Construction Offroad Equipment – Mitigated**
- **Operational Generator**

**Daily Unmitigated Emissions (pounds) - 2025**

| | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| Offroad | 0.23 | 5.26 | 4.13 | 0.21 | 0.19 |
| Onroad | 0.01 | 0.98 | 0.19 | 0.04 | 0.02 |
| Fugitive | 16.0 | | | 45.7 | 9.56 |
| Total | 16.3 | 6.23 | 4.32 | 46.0 | 9.76 |
| CEQA Thresholds | 54 | | 54 | 82 | 54 |
| | No | | No | No | No |

**Daily Mitigated Emissions (pounds) - 2025**

| | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| Offroad | 0.20 | 20.1 | 2.57 | 0.06 | 0.05 |
| Onroad | 0.01 | 0.98 | 0.19 | 0.04 | 0.02 |
| Fugitive | 16.0 | | | 11.7 | 2.43 |
| Total | 16.2 | 21.1 | 2.76 | 11.8 | 2.50 |
| CEQA Thresholds | 54 | | 54 | 82 | 54 |
| | No | | No | No | No |

**Daily Unmitigated Emissions (pounds) - 2026**

| | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| Offroad | 0.36 | 4.93 | 3.06 | 0.16 | 0.15 |
| Onroad | 0.01 | 0.98 | 0.19 | 0.04 | 0.02 |
| Fugitive | 16.0 | | | 45.7 | 9.56 |
| Total | 16.4 | 5.90 | 3.25 | 45.9 | 9.72 |
| CEQA Thresholds | 54 | | 54 | 82 | 54 |
| | No | | No | No | No |

**Daily Mitigated Emissions (pounds) - 2026**

| | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| Offroad | 0.33 | 17.7 | 2.33 | 0.05 | 0.04 |
| Onroad | 0.01 | 0.98 | 0.19 | 0.04 | 0.02 |
| Fugitive | 16.0 | | | 11.7 | 2.43 |
| Total | 16.4 | 18.7 | 2.52 | 11.8 | 2.49 |
| CEQA Thresholds | 54 | | 54 | 82 | 54 |
| | No | | No | No | No |

**Daily Unmitigated Emissions (pounds) - 2027**

| | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| Offroad | 0.20 | 5.42 | 3.18 | 0.16 | 0.14 |
| Onroad | 0.01 | 0.98 | 0.19 | 0.04 | 0.02 |
| Fugitive | 16.0 | | | 45.7 | 9.56 |
| Total | 16.2 | 6.40 | 3.37 | 45.9 | 9.72 |
| CEQA Thresholds | 54 | | 54 | 82 | 54 |
| | No | | No | No | No |

**Daily Mitigated Emissions (pounds) - 2027**

| | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| Offroad | 0.19 | 19.5 | 2.52 | 0.06 | 0.05 |
| Onroad | 0.01 | 0.98 | 0.19 | 0.04 | 0.02 |
| Fugitive | 16.0 | | | 11.7 | 2.43 |
| Total | 16.2 | 20.5 | 2.71 | 11.8 | 2.50 |
| CEQA Thresholds | 54 | | 54 | 82 | 54 |
| | No | | No | No | No |

**Daily Unmitigated Emissions (pounds) - 2028**

| | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| Offroad | 0.27 | 4.13 | 1.98 | 0.10 | 0.09 |
| Onroad | 0.01 | 0.98 | 0.19 | 0.04 | 0.02 |
| Fugitive | 16.0 | | | 45.7 | 9.56 |
| Total | 16.3 | 5.11 | 2.17 | 45.9 | 9.66 |
| CEQA Thresholds | 54 | | 54 | 82 | 54 |
| | No | | No | No | No |

**Daily Mitigated Emissions (pounds) - 2028**

| | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| Offroad | 0.28 | 14.7 | 2.37 | 0.04 | 0.03 |
| Onroad | 0.01 | 0.98 | 0.19 | 0.04 | 0.02 |
| Fugitive | 16.0 | | | 11.7 | 2.43 |
| Total | 16.3 | 15.7 | 2.56 | 11.8 | 2.48 |
| CEQA Thresholds | 54 | | 54 | 82 | 54 |
| | No | | No | No | No |

| Unmitigated | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| 2025 | 16.3 | 6.23 | 4.32 | 46.0 | 9.76 |
| 2026 | 16.4 | 5.90 | 3.25 | 45.9 | 9.72 |
| 2027 | 16.2 | 6.40 | 3.37 | 45.9 | 9.72 |
| 2028 | 16.3 | 5.11 | 2.17 | 45.9 | 9.66 |

| Mitigated | ROG | CO | NOX | PM10 | PM2.5 |
|---|---|---|---|---|---|
| 2025 | 16.2 | 21.1 | 2.76 | 11.8 | 2.50 |
| 2026 | 16.4 | 18.7 | 2.52 | 11.8 | 2.49 |
| 2027 | 16.2 | 20.5 | 2.71 | 11.8 | 2.50 |
| 2028 | 16.3 | 15.7 | 2.56 | 11.8 | 2.48 |

**Motor Vehicle Combustion Emissions**

| | | | Emission Factor (g/mile) | | | | | | | | Daily Emissions (pounds/day) | | | | | Annual Emissions (tons/year) | | | | | | | | Annual Emissions (metric tons/year) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vehicles | VMT | ROG | CO | NOX | CO2 | CH4 | N2O | PM10 | PM2.5 | ROG | CO | NOX | PM10 | PM2.5 | ROG | CO | NOX | CO2 | CH4 | N2O | PM10 | PM2.5 | CO2e |
| Pickup Trucks | 3 | 60 | 0.01 | 0.81 | 0.07 | 327 | 0.00 | 0.01 | 0.02 | 0.01 | 0.00 | 0.11 | 0.01 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 19 | 0.00 | 0.00 | 0.00 | 0.00 | 17 |
| Employee Vehicles | 30 | 648 | 0.01 | 0.68 | 0.05 | 272 | 0.00 | 0.00 | 0.02 | 0.01 | 0.01 | 0.97 | 0.07 | 0.02 | 0.01 | 0.01 | 0.42 | 0.03 | 167 | 0.00 | 0.00 | 0.01 | 0.00 | 152 |
| Haul Trucks | 4 | 152 | 0.01 | 0.03 | 0.37 | 1,036 | 0.00 | 0.16 | 0.06 | 0.02 | 0.00 | 0.01 | 0.12 | 0.02 | 0.01 | 0.00 | 0.00 | 0.05 | 149 | 0.00 | 0.02 | 0.01 | 0.00 | 141 |
| Total | | | | | | | | | | | 0.01 | 0.98 | 0.19 | 0.04 | 0.02 | 0.01 | 0.42 | 0.08 | 316 | 0.00 | 0.03 | 0.02 | 0.01 | 293 |

**Project Construction Emissions**

| Project Phase | Project activity (Stage) | Equipment | ID | No. of equipment | Average hours/day | Equipment size (horsepower each) | Off-road equipment (yes/no) | Average duration (months) | Overall Start Date | Overall End Date | Year | Days | Emission Factor (g/hp-hr or g/mile) ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | Emissions (tons/yr) ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **All-Phases** | | | | | | | | **36** | Start Date | End Date | | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 12 | 1/1/2025 | 12/31/2025 | 2025 | 288 | 0.01 | 0.81 | 0.07 | 327.32 | 0.02 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 6.23 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 1/1/2025 | 12/31/2025 | 2025 | 43 | 0.19 | 2.04 | 1.89 | 318.64 | 0.05 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 12 | 1/1/2025 | 12/31/2025 | 2025 | 288 | 0.05 | 0.66 | 0.48 | 117.95 | 0.03 | 0.03 | 0.00 | 0.00 | 0.06 | 0.04 | 10.00 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 1/1/2025 | 12/31/2025 | 2025 | 173 | 0.10 | 0.90 | 0.74 | 118.21 | 0.02 | 0.02 | 0.00 | 0.00 | 0.02 | 0.02 | 3.11 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 12 | 1/1/2025 | 12/31/2025 | 2025 | 288 | 0.10 | 1.25 | 0.80 | 218.90 | 0.04 | 0.03 | 0.00 | 0.01 | 0.14 | 0.09 | 23.91 | 0.00 | 0.00 | 0.00 |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 12 | 1/1/2026 | 5/15/2026 | 2026 | 288 | 0.01 | 0.76 | 0.06 | 319.42 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 6.08 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 1/1/2026 | 5/15/2026 | 2026 | 43 | 0.17 | 2.02 | 1.84 | 318.55 | 0.04 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 12 | 1/1/2026 | 5/15/2026 | 2026 | 288 | 0.05 | 0.67 | 0.42 | 121.25 | 0.03 | 0.03 | 0.00 | 0.00 | 0.06 | 0.04 | 10.28 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 1/1/2026 | 5/15/2026 | 2026 | 173 | 0.09 | 0.90 | 0.72 | 118.17 | 0.02 | 0.02 | 0.00 | 0.00 | 0.02 | 0.02 | 3.11 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 12 | 1/1/2026 | 5/15/2026 | 2026 | 288 | 0.08 | 1.25 | 0.66 | 221.62 | 0.03 | 0.03 | 0.00 | 0.01 | 0.14 | 0.07 | 24.20 | 0.00 | 0.00 | 0.00 |
| **Phase 1** | | | | | | | | **16.5** | | | | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx |
| | Demolition and excavation | 10-yard dump trucks | | 2 | 7 | 450 | No | 0.3 | 1/1/2025 | 2/15/2025 | 2025 | 7 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.15 | 0.00 | 0.00 | 0.00 |
| | | Excavator | 8 | 1 | 8 | 158 | Yes | 0.45 | 1/1/2025 | 2/15/2025 | 2025 | 11 | 0.08 | 1.17 | 0.56 | 195.39 | 0.02 | 0.02 | 0.00 | 0.00 | 0.02 | 0.01 | 2.94 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 8 | 2 | 450 | No | 0.3 | 1/1/2025 | 2/15/2025 | 2025 | 7 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.32 | 0.00 | 0.00 | 0.00 |
| | | Water truck | | 1 | 1 | 400 | No | 0.15 | 1/1/2025 | 2/15/2025 | 2025 | 4 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 |
| | | Plate compactors | 12 | 1 | 2 | 8 | Yes | 0.15 | 1/1/2025 | 2/15/2025 | 2025 | 4 | 0.28 | 23.53 | 0.48 | 254.36 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 4 | 97 | Yes | 1.2 | 1/1/2025 | 2/15/2025 | 2025 | 29 | 0.11 | 1.27 | 0.98 | 212.98 | 0.07 | 0.06 | 0.00 | 0.00 | 0.02 | 0.01 | 2.62 | 0.00 | 0.00 | 0.00 |
| | | Pyle Driver | 13 | 1 | 8 | 300 | Yes | 0.15 | 1/1/2025 | 2/15/2025 | 2025 | 4 | 0.12 | 0.60 | 1.08 | 255.82 | 0.05 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 2.44 | 0.00 | 0.00 | 0.00 |
| | Install slabs and walls | Crane | 6 | 1 | 7 | 231 | Yes | 2 | 2/16/2025 | 7/15/2025 | 2025 | 48 | 0.04 | 0.27 | 0.47 | 149.07 | 0.02 | 0.01 | 0.00 | 0.00 | 0.02 | 0.04 | 12.75 | 0.00 | 0.00 | 0.00 |
| | | Concrete mixer trucks | | 15 | 3 | 450 | No | 0.5 | 2/16/2025 | 7/15/2025 | 2025 | 12 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 6.17 | 0.00 | 0.00 | 0.00 |
| | | Cement and mortar mixers | 2 | 1 | 3 | 89 | Yes | 0.5 | 2/16/2025 | 7/15/2025 | 2025 | 12 | 0.10 | 1.78 | 0.60 | 287.86 | 0.03 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 1.02 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 3 | 97 | Yes | 3 | 2/16/2025 | 7/15/2025 | 2025 | 72 | 0.11 | 1.27 | 0.98 | 212.98 | 0.07 | 0.06 | 0.00 | 0.00 | 0.03 | 0.02 | 4.92 | 0.00 | 0.00 | 0.00 |
| | Install structures and equipment (other) | Crane | 6 | 1 | 3 | 231 | Yes | 2.6 | 7/16/2025 | 12/31/2025 | 2025 | 62 | 0.04 | 0.27 | 0.47 | 149.07 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 | 0.02 | 7.11 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 1 | 2 | 450 | No | 1.3 | 7/16/2025 | 12/31/2025 | 2025 | 31 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.71 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (For delivery of centrifuge, chem tanks, etc.) | | 1 | 1 | 400 | No | 0.65 | 7/16/2025 | 12/31/2025 | 2025 | 16 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 2 | 97 | Yes | 3.9 | 7/16/2025 | 12/31/2025 | 2025 | 94 | 0.11 | 1.27 | 0.98 | 212.98 | 0.07 | 0.06 | 0.00 | 0.00 | 0.03 | 0.02 | 4.26 | 0.00 | 0.00 | 0.00 |
| | Install structures and equipment (other) | Crane | 6 | 1 | 3 | 231 | Yes | 2.6 | 1/1/2026 | 1/31/2026 | 2026 | 62 | 0.04 | 0.28 | 0.43 | 149.07 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 | 0.02 | 7.11 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 1 | 2 | 450 | No | 1.3 | 1/1/2026 | 1/31/2026 | 2026 | 31 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (For delivery of centrifuge, chem tanks, etc.) | | 1 | 1 | 400 | No | 0.65 | 1/1/2026 | 1/31/2026 | 2026 | 16 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 2 | 97 | Yes | 3.9 | 1/1/2026 | 1/31/2026 | 2026 | 94 | 0.10 | 1.27 | 0.86 | 215.92 | 0.06 | 0.06 | 0.00 | 0.00 | 0.03 | 0.02 | 4.32 | 0.00 | 0.00 | 0.00 |
| | Yard piping and utilities | 10-yard dump truck | | 1 | 3 | 450 | No | 0.4 | 2/1/2026 | 3/31/2026 | 2026 | 10 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 | 0.00 |
| | | Haul truck | | 1 | 2 | 450 | No | 0.4 | 2/1/2026 | 3/31/2026 | 2026 | 10 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 5 | 97 | Yes | 1.2 | 2/1/2026 | 3/31/2026 | 2026 | 29 | 0.10 | 1.27 | 0.86 | 215.92 | 0.06 | 0.06 | 0.00 | 0.00 | 0.02 | 0.01 | 3.32 | 0.00 | 0.00 | 0.00 |
| | Site grading and drainage | Dozer | 7 | 1 | 4 | 97 | Yes | 0.1 | 4/1/2026 | 4/30/2026 | 2026 | 2 | 0.15 | 1.44 | 1.18 | 245.81 | 0.10 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 |
| | | Compactor | 3 | 1 | 4 | 45 | Yes | 0.1 | 4/1/2026 | 4/30/2026 | 2026 | 2 | 0.19 | 1.73 | 1.43 | 245.73 | 0.04 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 5 | 97 | Yes | 0.6 | 4/1/2026 | 4/30/2026 | 2026 | 14 | 0.10 | 1.27 | 0.86 | 215.92 | 0.06 | 0.06 | 0.00 | 0.00 | 0.01 | 0.01 | 1.66 | 0.00 | 0.00 | 0.00 |
| | Site paving | Paving equipment | 11 | 1 | 7 | 132 | Yes | 0.4 | 5/1/2026 | 5/15/2026 | 2026 | 6 | 0.06 | 1.10 | 0.40 | 186.11 | 0.02 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 1.14 | 0.00 | 0.00 | 0.00 |
| | | Compactor/roller | 4 | 1 | 7 | 80 | Yes | 0.25 | 5/1/2026 | 5/15/2026 | 2026 | 6 | 0.12 | 1.34 | 1.04 | 233.47 | 0.08 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.86 | 0.00 | 0.00 | 0.00 |
| | | Asphalt haul trucks | | 3 | 4 | 450 | No | 0.25 | 5/1/2026 | 5/15/2026 | 2026 | 6 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.81 | 0.00 | 0.00 | 0.00 |
| | | Cement and mortar mixers | 2 | 1 | 3 | 89 | Yes | 0.25 | 5/1/2026 | 5/15/2026 | 2026 | 6 | 0.10 | 1.79 | 0.56 | 287.86 | 0.03 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.51 | 0.00 | 0.00 | 0.00 |
| **All-Phases** | | | | | | | | **36** | Start Date | End Date | | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 12 | 1/1/2027 | 12/31/2027 | 2027 | 288 | 0.01 | 0.72 | 0.05 | 312.10 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 5.94 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 1/1/2027 | 12/31/2027 | 2027 | 43 | 0.16 | 2.01 | 1.78 | 318.50 | 0.03 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 12 | 1/1/2027 | 12/31/2027 | 2027 | 288 | 0.04 | 0.67 | 0.37 | 120.54 | 0.03 | 0.02 | 0.00 | 0.00 | 0.06 | 0.03 | 10.22 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 1/1/2027 | 12/31/2027 | 2027 | 173 | 0.08 | 0.89 | 0.69 | 118.13 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.02 | 3.11 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 12 | 1/1/2027 | 12/31/2027 | 2027 | 288 | 0.08 | 1.26 | 0.60 | 221.10 | 0.03 | 0.03 | 0.00 | 0.01 | 0.14 | 0.07 | 24.15 | 0.00 | 0.00 | 0.00 |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 12 | 1/1/2028 | 5/15/2028 | 2028 | 288 | 0.01 | 0.69 | 0.05 | 305.38 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 5.82 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 1/1/2028 | 5/15/2028 | 2028 | 43 | 0.15 | 1.99 | 1.73 | 318.38 | 0.03 | 0.02 | 0.00 | 0.00 | 0.01 | 0.01 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 12 | 1/1/2028 | 5/15/2028 | 2028 | 288 | 0.04 | 0.70 | 0.30 | 131.80 | 0.02 | 0.02 | 0.00 | 0.00 | 0.06 | 0.03 | 11.17 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 1/1/2028 | 5/15/2028 | 2028 | 173 | 0.08 | 0.89 | 0.68 | 118.10 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.02 | 3.10 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 12 | 1/1/2028 | 5/15/2028 | 2028 | 288 | 0.07 | 1.27 | 0.46 | 226.79 | 0.02 | 0.02 | 0.00 | 0.01 | 0.14 | 0.05 | 24.77 | 0.00 | 0.00 | 0.00 |
| **Phase 2** | | | | | | | | **16.5** | | | | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx |
| | Demolition and excavation | 10-yard dump trucks | | 2 | 7 | 450 | No | 0.3 | 1/1/2027 | 2/15/2027 | 2027 | 7 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.10 | 0.00 | 0.00 | 0.00 |
| | | Excavator | 8 | 1 | 8 | 158 | Yes | 0.45 | 1/1/2027 | 2/15/2027 | 2027 | 11 | 0.08 | 1.18 | 0.45 | 195.50 | 0.02 | 0.02 | 0.00 | 0.00 | 0.02 | 0.01 | 2.94 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 8 | 2 | 450 | No | 0.3 | 1/1/2027 | 2/15/2027 | 2027 | 7 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.26 | 0.00 | 0.00 | 0.00 |
| | | Water truck | | 1 | 1 | 400 | No | 0.15 | 1/1/2027 | 2/15/2027 | 2027 | 4 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 12 | 1 | 4 | 97 | Yes | 0.15 | 1/1/2027 | 2/15/2027 | 2027 | 4 | 0.22 | 18.45 | 0.37 | 198.58 | 0.01 | 0.01 | 0.00 | 0.00 | 0.03 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (For haul off of belt press, chem tanks, etc.) | 1 | 1 | 1 | 400 | No | 1.2 | 1/1/2027 | 2/15/2027 | 2027 | 29 | 0.09 | 1.27 | 0.77 | 215.45 | 0.06 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 |
| | | Pyle Driver | 13 | 1 | 8 | 300 | Yes | 0.15 | 1/1/2027 | 2/15/2027 | 2027 | 4 | 0.11 | 0.58 | 0.77 | 254.22 | 0.03 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 2.42 | 0.00 | 0.00 | 0.00 |
| | Install slabs and walls | Crane | 6 | 1 | 7 | 231 | Yes | 2 | 2/16/2027 | 7/15/2027 | 2027 | 48 | 0.04 | 0.28 | 0.40 | 149.07 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.03 | 12.75 | 0.00 | 0.00 | 0.00 |
| | | Concrete mixer trucks | | 15 | 3 | 450 | No | 0.5 | 2/16/2027 | 7/15/2027 | 2027 | 12 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 5.90 | 0.00 | 0.00 | 0.00 |
| | | Cement and mortar mixers | 2 | 1 | 3 | 89 | Yes | 0.5 | 2/16/2027 | 7/15/2027 | 2027 | 12 | 0.10 | 1.79 | 0.53 | 287.86 | 0.03 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 1.02 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 3 | 97 | Yes | 3 | 2/16/2027 | 7/15/2027 | 2027 | 72 | 0.09 | 1.27 | 0.77 | 215.45 | 0.06 | 0.05 | 0.00 | 0.00 | 0.03 | 0.02 | 4.98 | 0.00 | 0.00 | 0.00 |
| | Install structures and equipment (other) | Crane | 6 | 1 | 3 | 231 | Yes | 2.6 | 7/16/2027 | 12/31/2027 | 2027 | 62 | 0.04 | 0.28 | 0.40 | 149.07 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.02 | 7.11 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 1 | 2 | 450 | No | 1.3 | 7/16/2027 | 12/31/2027 | 2027 | 31 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.68 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (for delivery of plate settlers, chem tanks, etc.) | | 1 | 1 | 400 | No | 0.65 | 7/16/2027 | 12/31/2027 | 2027 | 16 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 2 | 97 | Yes | 3.9 | 7/16/2027 | 12/31/2027 | 2027 | 94 | 0.09 | 1.27 | 0.77 | 215.45 | 0.06 | 0.05 | 0.00 | 0.00 | 0.03 | 0.02 | 4.31 | 0.00 | 0.00 | 0.00 |
| | Install structures and equipment (other) | Crane | 6 | 1 | 3 | 231 | Yes | 2.6 | 1/1/2028 | 1/31/2028 | 2028 | 62 | 0.04 | 0.28 | 0.37 | 149.07 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.02 | 7.11 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 1 | 2 | 450 | No | 1.3 | 1/1/2028 | 1/31/2028 | 2028 | 31 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.66 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (for delivery of plate settlers, chem tanks, etc.) | | 1 | 1 | 400 | No | 0.65 | 1/1/2028 | 1/31/2028 | 2028 | 16 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 2 | 97 | Yes | 3.9 | 1/1/2028 | 1/31/2028 | 2028 | 94 | 0.08 | 1.29 | 0.63 | 224.12 | 0.05 | 0.04 | 0.00 | 0.00 | 0.03 | 0.01 | 4.49 | 0.00 | 0.00 | 0.00 |
| | Yard piping and utilities | 10-yard dump truck | | 1 | 3 | 450 | No | 0.6 | 2/1/2028 | 3/31/2028 | 2028 | 14 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.46 | 0.00 | 0.00 | 0.00 |
| | | Haul truck | | 1 | 2 | 450 | No | 0.4 | 2/1/2028 | 3/31/2028 | 2028 | 10 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 5 | 97 | Yes | 1.2 | 2/1/2028 | 3/31/2028 | 2028 | 29 | 0.08 | 1.29 | 0.63 | 224.12 | 0.05 | 0.04 | 0.00 | 0.00 | 0.02 | 0.01 | 3.45 | 0.00 | 0.00 | 0.00 |
| | Site grading and drainage | Dozer | 7 | 1 | 4 | 97 | Yes | 0.1 | 4/1/2028 | 4/30/2028 | 2028 | 2 | 0.11 | 1.45 | 0.76 | 263.12 | 0.06 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.27 | 0.00 | 0.00 | 0.00 |
| | | Compactor | 3 | 1 | 4 | 45 | Yes | 0.1 | 4/1/2028 | 4/30/2028 | 2028 | 2 | 0.19 | 1.78 | 1.41 | 245.73 | 0.03 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 5 | 97 | Yes | 0.6 | 4/1/2028 | 4/30/2028 | 2028 | 14 | 0.08 | 1.29 | 0.63 | 224.12 | 0.05 | 0.04 | 0.00 | 0.00 | 0.01 | 0.00 | 1.73 | 0.00 | 0.00 | 0.00 |
| | Site paving | Paving equipment | 11 | 1 | 7 | 132 | Yes | 0.4 | 5/1/2028 | 5/15/2028 | 2028 | 10 | 0.06 | 1.10 | 0.30 | 186.82 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 1.83 | 0.00 | 0.00 | 0.00 |
| | | Compactor/roller | 4 | 1 | 7 | 80 | Yes | 0.4 | 5/1/2028 | 5/15/2028 | 2028 | 10 | 0.10 | 1.38 | 0.76 | 250.90 | 0.06 | 0.05 | 0.00 | 0.00 | 0.01 | 0.00 | 1.49 | 0.00 | 0.00 | 0.00 |
| | | Asphalt haul trucks | | 3 | 4 | 450 | No | 0.4 | 5/1/2028 | 5/15/2028 | 2028 | 10 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.22 | 0.00 | 0.00 | 0.00 |
| | | Cement and mortar mixers | 2 | 1 | 3 | 89 | Yes | 0.4 | 5/1/2028 | 5/15/2028 | 2028 | 10 | 0.10 | 1.80 | 0.49 | 287.86 | 0.02 | 0.02 | 0.00 | 0.00 | 0.01 | 0.00 | 0.81 | 0.00 | 0.00 | 0.00 |
| **Closeout** | | | | | | | | **3** | | | | | | | | | | | | | | | | | | |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 3 | 5/16/2028 | 8/15/2028 | 2028 | 72 | 0.01 | 0.69 | 0.05 | 305.38 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.45 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 5/16/2028 | 8/15/2028 | 2028 | 43 | 0.15 | 1.99 | 1.73 | 318.38 | 0.03 | 0.02 | 0.00 | 0.00 | 0.01 | 0.01 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 3 | 5/16/2028 | 8/15/2028 | 2028 | 72 | 0.04 | 0.70 | 0.30 | 131.80 | 0.02 | 0.02 | 0.00 | 0.00 | 0.01 | 0.01 | 2.79 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 5/16/2028 | 8/15/2028 | 2028 | 173 | 0.08 | 0.89 | 0.68 | 118.10 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.02 | 3.10 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 3 | 5/16/2028 | 8/15/2028 | 2028 | 72 | 0.07 | 1.27 | 0.46 | 226.79 | 0.02 | 0.02 | 0.00 | 0.00 | 0.03 | 0.01 | 6.19 | 0.00 | 0.00 | 0.00 |

| | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| tons per year | | 0.11 | 1.52 | 0.93 | 333 | 0.05 | 0.04 | 0.00 | 302 |
| pounds per day | | 0.28 | 3.83 | 2.35 | 842 | 0.12 | 0.11 | 0.01 | |
| | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | CO2e |
| tpy | 2025 | 0.03 | 0.38 | 0.30 | 92 | 0.02 | 0.01 | 0.00 | 84 |
| ppd | 2025 | 0.23 | 5.26 | 4.13 | 1,280 | 0.21 | 0.19 | 0.01 | |
| tpy | 2026 | 0.02 | 0.33 | 0.20 | 66 | 0.01 | 0.01 | 0.00 | 60 |
| ppd | 2026 | 0.36 | 4.93 | 3.06 | 1,007 | 0.16 | 0.15 | 0.01 | |
| tpy | 2027 | 0.03 | 0.39 | 0.23 | 90 | 0.01 | 0.01 | 0.00 | 81 |
| ppd | 2027 | 0.20 | 5.42 | 3.18 | 1,246 | 0.16 | 0.14 | 0.01 | |
| tpy | 2028 | 0.03 | 0.42 | 0.20 | 85 | 0.01 | 0.01 | 0.00 | 77 |
| ppd | 2028 | 0.27 | 4.13 | 1.98 | 833 | 0.10 | 0.09 | 0.01 | |

**Project Construction Emissions**

| Project Phase | Project activity (Stage) | Equipment | ID | No. of equipment | Average hours/day | Equipment size (horsepower each) | Off-road equipment (yes/no) | Average duration (months) | Overall | Overall | Year | Days | Emission Factor (g/hp-hr or g/mile) | | | | | | | Emissions (tons/yr) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **All-Phases** | | | | | | | | **36** | Start Date | End Date | | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 12 | 1/1/2025 | 12/31/2025 | 2025 | 288 | 0.01 | 0.81 | 0.07 | 327.32 | 0.02 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 6.23 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 1/1/2025 | 12/31/2025 | 2025 | 43 | 0.06 | 3.70 | 0.26 | 318.64 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 12 | 1/1/2025 | 12/31/2025 | 2025 | 288 | 0.06 | 3.70 | 0.26 | 117.95 | 0.01 | 0.01 | 0.00 | 0.01 | 0.31 | 0.02 | 10.00 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 1/1/2025 | 12/31/2025 | 2025 | 173 | 0.12 | 4.10 | 2.75 | 118.21 | 0.01 | 0.01 | 0.00 | 0.00 | 0.11 | 0.07 | 3.11 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 12 | 1/1/2025 | 12/31/2025 | 2025 | 288 | 0.06 | 3.70 | 0.26 | 218.90 | 0.01 | 0.01 | 0.00 | 0.01 | 0.40 | 0.03 | 23.91 | 0.00 | 0.00 | 0.00 |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 12 | 1/1/2026 | 5/15/2026 | 2026 | 288 | 0.01 | 0.76 | 0.06 | 319.42 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 6.08 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 1/1/2026 | 5/15/2026 | 2026 | 43 | 0.06 | 3.70 | 0.26 | 318.64 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 12 | 1/1/2026 | 5/15/2026 | 2026 | 288 | 0.06 | 3.70 | 0.26 | 117.95 | 0.01 | 0.01 | 0.00 | 0.01 | 0.31 | 0.02 | 10.00 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 1/1/2026 | 5/15/2026 | 2026 | 173 | 0.12 | 4.10 | 2.75 | 118.21 | 0.01 | 0.01 | 0.00 | 0.00 | 0.11 | 0.07 | 3.11 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 12 | 1/1/2026 | 5/15/2026 | 2026 | 288 | 0.06 | 3.70 | 0.26 | 218.90 | 0.01 | 0.01 | 0.00 | 0.01 | 0.40 | 0.03 | 23.91 | 0.00 | 0.00 | 0.00 |
| **Phase 1** | | | | | | | | **16.5** | | | | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx |
| | Demolition and excavation | 10-yard dump trucks | | 2 | 7 | 450 | No | 0.3 | 1/1/2025 | 2/15/2025 | 2025 | 7 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.15 | 0.00 | 0.00 | 0.00 |
| | | Excavator | 8 | 1 | 8 | 158 | Yes | 0.45 | 1/1/2025 | 2/15/2025 | 2025 | 11 | 0.06 | 3.70 | 0.26 | 195.39 | 0.01 | 0.01 | 0.00 | 0.00 | 0.06 | 0.00 | 2.94 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 8 | 2 | 450 | No | 0.3 | 1/1/2025 | 2/15/2025 | 2025 | 7 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.32 | 0.00 | 0.00 | 0.00 |
| | | Water truck | | 1 | 1 | 400 | No | 0.15 | 1/1/2025 | 2/15/2025 | 2025 | 4 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 |
| | | Plate compactors | 12 | 1 | 2 | 8 | Yes | 0.15 | 1/1/2025 | 2/15/2025 | 2025 | 4 | 0.28 | 23.53 | 0.48 | 254.36 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 4 | 97 | Yes | 1.2 | 1/1/2025 | 2/15/2025 | 2025 | 29 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.05 | 0.00 | 2.62 | 0.00 | 0.00 | 0.00 |
| | | Pyle Driver | 13 | 1 | 8 | 300 | Yes | 0.15 | 1/1/2025 | 2/15/2025 | 2025 | 4 | 0.06 | 2.20 | 0.26 | 255.82 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 2.44 | 0.00 | 0.00 | 0.00 |
| | Install slabs and walls | Crane | 6 | 1 | 7 | 231 | Yes | 2 | 2/16/2025 | 7/15/2025 | 2025 | 48 | 0.06 | 2.20 | 0.26 | 149.07 | 0.01 | 0.01 | 0.00 | 0.01 | 0.19 | 0.02 | 12.75 | 0.00 | 0.00 | 0.00 |
| | | Concrete mixer trucks | | 15 | 3 | 450 | No | 0.5 | 2/16/2025 | 7/15/2025 | 2025 | 12 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 6.17 | 0.00 | 0.00 | 0.00 |
| | | Cement and mortar mixers | 2 | 1 | 3 | 89 | Yes | 0.5 | 2/16/2025 | 7/15/2025 | 2025 | 12 | 0.06 | 3.70 | 0.26 | 287.86 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 1.02 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 3 | 97 | Yes | 3 | 2/16/2025 | 7/15/2025 | 2025 | 72 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.09 | 0.01 | 4.92 | 0.00 | 0.00 | 0.00 |
| | Install structures and equipment (other) | Crane | 6 | 1 | 3 | 231 | Yes | 2.6 | 7/16/2025 | 12/31/2025 | 2025 | 62 | 0.06 | 2.20 | 0.26 | 149.07 | 0.01 | 0.01 | 0.00 | 0.00 | 0.10 | 0.01 | 7.11 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 1 | 2 | 450 | No | 1.3 | 7/16/2025 | 12/31/2025 | 2025 | 31 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.71 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (For delivery of centrifuge, chem tanks, etc.) | | 1 | 1 | 400 | No | 0.65 | 7/16/2025 | 12/31/2025 | 2025 | 16 | 0.01 | 0.03 | 0.37 | 1,036.21 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 2 | 97 | Yes | 3.9 | 7/16/2025 | 12/31/2025 | 2025 | 94 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.07 | 0.01 | 4.26 | 0.00 | 0.00 | 0.00 |
| | Install structures and equipment (other) | Crane | 6 | 1 | 3 | 231 | Yes | 2.6 | 1/1/2026 | 1/31/2026 | 2026 | 62 | 0.06 | 2.20 | 0.26 | 149.07 | 0.01 | 0.01 | 0.00 | 0.00 | 0.10 | 0.01 | 7.11 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 1 | 2 | 450 | No | 1.3 | 1/1/2026 | 1/31/2026 | 2026 | 31 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.70 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (For delivery of centrifuge, chem tanks, etc.) | | 1 | 1 | 400 | No | 0.65 | 1/1/2026 | 1/31/2026 | 2026 | 16 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 2 | 97 | Yes | 3.9 | 1/1/2026 | 1/31/2026 | 2026 | 94 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.07 | 0.01 | 4.26 | 0.00 | 0.00 | 0.00 |
| | Yard piping and utilities | 10-yard dump truck | | 1 | 3 | 450 | No | 0.4 | 2/1/2026 | 3/31/2026 | 2026 | 10 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 | 0.00 |
| | | Haul truck | | 1 | 2 | 450 | No | 0.4 | 2/1/2026 | 3/31/2026 | 2026 | 10 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.21 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 5 | 97 | Yes | 1.2 | 2/1/2026 | 3/31/2026 | 2026 | 29 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.06 | 0.00 | 3.28 | 0.00 | 0.00 | 0.00 |
| | Site grading and drainage | Dozer | 7 | 1 | 4 | 97 | Yes | 0.1 | 4/1/2026 | 4/30/2026 | 2026 | 2 | 0.06 | 3.70 | 0.26 | 240.87 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 |
| | | Compactor | 3 | 1 | 4 | 45 | Yes | 0.1 | 4/1/2026 | 4/30/2026 | 2026 | 2 | 0.12 | 4.10 | 2.75 | 245.73 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 5 | 97 | Yes | 0.6 | 4/1/2026 | 4/30/2026 | 2026 | 14 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.03 | 0.00 | 1.64 | 0.00 | 0.00 | 0.00 |
| | Site paving | Paving equipment | 11 | 1 | 7 | 132 | Yes | 0.4 | 5/1/2026 | 5/15/2026 | 2026 | 6 | 0.06 | 3.70 | 0.26 | 185.63 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 1.13 | 0.00 | 0.00 | 0.00 |
| | | Compactor/roller | 4 | 1 | 7 | 80 | Yes | 0.25 | 5/1/2026 | 5/15/2026 | 2026 | 6 | 0.06 | 3.70 | 0.26 | 224.69 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.83 | 0.00 | 0.00 | 0.00 |
| | | Asphalt haul trucks | | 3 | 4 | 450 | No | 0.25 | 5/1/2026 | 5/15/2026 | 2026 | 6 | 0.01 | 0.03 | 0.34 | 1,015.04 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.81 | 0.00 | 0.00 | 0.00 |
| | | Cement and mortar mixers | 2 | 1 | 3 | 89 | Yes | 0.25 | 5/1/2026 | 5/15/2026 | 2026 | 6 | 0.06 | 3.70 | 0.26 | 287.86 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.51 | 0.00 | 0.00 | 0.00 |
| **All-Phases** | | | | | | | | **36** | Start Date | End Date | | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 12 | 1/1/2027 | 12/31/2027 | 2027 | 288 | 0.01 | 0.72 | 0.05 | 312.10 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 5.94 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 1/1/2027 | 12/31/2027 | 2027 | 43 | 0.06 | 3.70 | 0.26 | 318.64 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 12 | 1/1/2027 | 12/31/2027 | 2027 | 288 | 0.06 | 3.70 | 0.26 | 117.95 | 0.01 | 0.01 | 0.00 | 0.01 | 0.31 | 0.02 | 10.00 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 1/1/2027 | 12/31/2027 | 2027 | 173 | 0.12 | 4.10 | 2.75 | 118.21 | 0.01 | 0.01 | 0.00 | 0.00 | 0.11 | 0.07 | 3.11 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 12 | 1/1/2027 | 12/31/2027 | 2027 | 288 | 0.06 | 3.70 | 0.26 | 218.90 | 0.01 | 0.01 | 0.00 | 0.01 | 0.40 | 0.03 | 23.91 | 0.00 | 0.00 | 0.00 |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 12 | 1/1/2028 | 5/15/2028 | 2028 | 288 | 0.01 | 0.69 | 0.05 | 305.38 | 0.02 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 5.82 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 1/1/2028 | 5/15/2028 | 2028 | 43 | 0.06 | 3.70 | 0.26 | 318.64 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 12 | 1/1/2028 | 5/15/2028 | 2028 | 288 | 0.06 | 3.70 | 0.26 | 117.95 | 0.01 | 0.01 | 0.00 | 0.01 | 0.31 | 0.02 | 10.00 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 1/1/2028 | 5/15/2028 | 2028 | 173 | 0.12 | 4.10 | 2.75 | 118.21 | 0.01 | 0.01 | 0.00 | 0.00 | 0.11 | 0.07 | 3.11 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 12 | 1/1/2028 | 5/15/2028 | 2028 | 288 | 0.06 | 3.70 | 0.26 | 218.90 | 0.01 | 0.01 | 0.00 | 0.01 | 0.40 | 0.03 | 23.91 | 0.00 | 0.00 | 0.00 |
| **Phase 2** | | | | | | | | **16.5** | | | | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx |
| | Demolition and excavation | 10-yard dump trucks | | 2 | 7 | 450 | No | 0.3 | 1/1/2027 | 2/15/2027 | 2027 | 7 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.10 | 0.00 | 0.00 | 0.00 |
| | | Excavator | 8 | 1 | 8 | 158 | Yes | 0.45 | 1/1/2027 | 2/15/2027 | 2027 | 11 | 0.06 | 3.70 | 0.26 | 195.39 | 0.01 | 0.01 | 0.00 | 0.00 | 0.06 | 0.00 | 2.94 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 8 | 2 | 450 | No | 0.3 | 1/1/2027 | 2/15/2027 | 2027 | 7 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.26 | 0.00 | 0.00 | 0.00 |
| | | Water truck | | 1 | 1 | 400 | No | 0.15 | 1/1/2027 | 2/15/2027 | 2027 | 4 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 12 | 1 | 4 | 97 | Yes | 0.15 | 1/1/2027 | 2/15/2027 | 2027 | 4 | 0.06 | 3.70 | 0.26 | 254.36 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.39 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (For haul off of belt press, chem tanks, etc.) | 1 | 1 | 1 | 400 | No | 1.2 | 1/1/2027 | 2/15/2027 | 2027 | 29 | 0.09 | 1.27 | 0.77 | 215.45 | 0.06 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 |
| | | Pyle Driver | 13 | 1 | 8 | 300 | Yes | 0.15 | 1/1/2027 | 2/15/2027 | 2027 | 4 | 0.06 | 2.20 | 0.26 | 255.82 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 2.44 | 0.00 | 0.00 | 0.00 |
| | Install slabs and walls | Crane | 6 | 1 | 7 | 231 | Yes | 2 | 2/16/2027 | 7/15/2027 | 2027 | 48 | 0.06 | 2.20 | 0.26 | 149.07 | 0.01 | 0.01 | 0.00 | 0.01 | 0.19 | 0.02 | 12.75 | 0.00 | 0.00 | 0.00 |
| | | Concrete mixer trucks | | 15 | 3 | 450 | No | 0.5 | 2/16/2027 | 7/15/2027 | 2027 | 12 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 5.90 | 0.00 | 0.00 | 0.00 |
| | | Cement and mortar mixers | 2 | 1 | 3 | 89 | Yes | 0.5 | 2/16/2027 | 7/15/2027 | 2027 | 12 | 0.06 | 3.70 | 0.26 | 287.86 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 1.02 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 3 | 97 | Yes | 3 | 2/16/2027 | 7/15/2027 | 2027 | 72 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.09 | 0.01 | 4.92 | 0.00 | 0.00 | 0.00 |
| | Install structures and equipment (other) | Crane | 6 | 1 | 3 | 231 | Yes | 2.6 | 7/16/2027 | 12/31/2027 | 2027 | 62 | 0.06 | 2.20 | 0.26 | 149.07 | 0.01 | 0.01 | 0.00 | 0.00 | 0.10 | 0.01 | 7.11 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 1 | 2 | 450 | No | 1.3 | 7/16/2027 | 12/31/2027 | 2027 | 31 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.68 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (for delivery of plate settlers, chem tanks, etc.) | | 1 | 1 | 400 | No | 0.65 | 7/16/2027 | 12/31/2027 | 2027 | 16 | 0.01 | 0.03 | 0.31 | 991.14 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 2 | 97 | Yes | 3.9 | 7/16/2027 | 12/31/2027 | 2027 | 94 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.07 | 0.01 | 4.26 | 0.00 | 0.00 | 0.00 |
| | Install structures and equipment (other) | Crane | 6 | 1 | 3 | 231 | Yes | 2.6 | 1/1/2028 | 1/31/2028 | 2028 | 62 | 0.06 | 2.20 | 0.26 | 149.07 | 0.01 | 0.01 | 0.00 | 0.00 | 0.10 | 0.01 | 7.11 | 0.00 | 0.00 | 0.00 |
| | | Haul trucks | | 1 | 2 | 450 | No | 1.3 | 1/1/2028 | 1/31/2028 | 2028 | 31 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.66 | 0.00 | 0.00 | 0.00 |
| | | Flatbed truck (for delivery of plate settlers, chem tanks, etc.) | | 1 | 1 | 400 | No | 0.65 | 1/1/2028 | 1/31/2028 | 2028 | 16 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 2 | 97 | Yes | 3.9 | 1/1/2028 | 1/31/2028 | 2028 | 94 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.07 | 0.01 | 4.26 | 0.00 | 0.00 | 0.00 |
| | Yard piping and utilities | 10-yard dump truck | | 1 | 3 | 450 | No | 0.6 | 2/1/2028 | 3/31/2028 | 2028 | 14 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.46 | 0.00 | 0.00 | 0.00 |
| | | Haul truck | | 1 | 2 | 450 | No | 0.4 | 2/1/2028 | 3/31/2028 | 2028 | 10 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 5 | 97 | Yes | 1.2 | 2/1/2028 | 3/31/2028 | 2028 | 29 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.06 | 0.00 | 3.28 | 0.00 | 0.00 | 0.00 |
| | Site grading and drainage | Dozer | 7 | 1 | 4 | 97 | Yes | 0.1 | 4/1/2028 | 4/30/2028 | 2028 | 2 | 0.06 | 3.70 | 0.26 | 240.87 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 |
| | | Compactor | 3 | 1 | 4 | 45 | Yes | 0.1 | 4/1/2028 | 4/30/2028 | 2028 | 2 | 0.12 | 4.10 | 2.75 | 245.73 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 |
| | | Backhoe/tractors/loaders | 1 | 1 | 5 | 97 | Yes | 0.6 | 4/1/2028 | 4/30/2028 | 2028 | 14 | 0.06 | 3.70 | 0.26 | 212.98 | 0.01 | 0.01 | 0.00 | 0.00 | 0.03 | 0.00 | 1.64 | 0.00 | 0.00 | 0.00 |
| | Site paving | Paving equipment | 11 | 1 | 7 | 132 | Yes | 0.4 | 5/1/2028 | 5/15/2028 | 2028 | 10 | 0.06 | 3.70 | 0.26 | 185.63 | 0.01 | 0.01 | 0.00 | 0.00 | 0.04 | 0.00 | 1.82 | 0.00 | 0.00 | 0.00 |
| | | Compactor/roller | 4 | 1 | 7 | 80 | Yes | 0.4 | 5/1/2028 | 5/15/2028 | 2028 | 10 | 0.06 | 3.70 | 0.26 | 224.69 | 0.01 | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 1.33 | 0.00 | 0.00 | 0.00 |
| | | Asphalt haul trucks | | 3 | 4 | 450 | No | 0.4 | 5/1/2028 | 5/15/2028 | 2028 | 10 | 0.01 | 0.03 | 0.29 | 963.43 | 0.06 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 1.22 | 0.00 | 0.00 | 0.00 |
| | | Cement and mortar mixers | 2 | 1 | 3 | 89 | Yes | 0.4 | 5/1/2028 | 5/15/2028 | 2028 | 10 | 0.06 | 3.70 | 0.26 | 287.86 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.81 | 0.00 | 0.00 | 0.00 |
| **Closeout** | | | | | | | | **3** | | | | | | | | | | | | | | | | | | |
| | General: project management | Pickup trucks | | 3 | 2 | 300 | No | 3 | 5/16/2028 | 8/15/2028 | 2028 | 72 | 0.01 | 0.69 | 0.05 | 305.38 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 1.45 | 0.00 | 0.00 | 0.00 |
| | | Generator sets | 10 | 1 | 1 | 84 | Yes | 1.8 | 5/16/2028 | 8/15/2028 | 2028 | 43 | 0.06 | 3.70 | 0.26 | 318.64 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 1.27 | 0.00 | 0.00 | 0.00 |
| | | Forklift | 9 | 1 | 3 | 89 | Yes | 3 | 5/16/2028 | 8/15/2028 | 2028 | 72 | 0.06 | 3.70 | 0.26 | 117.95 | 0.01 | 0.01 | 0.00 | 0.00 | 0.08 | 0.01 | 2.50 | 0.00 | 0.00 | 0.00 |
| | | Welders | 14 | 3 | 1 | 46 | Yes | 7.2 | 5/16/2028 | 8/15/2028 | 2028 | 173 | 0.12 | 4.10 | 2.75 | 118.21 | 0.01 | 0.01 | 0.00 | 0.00 | 0.11 | 0.07 | 3.11 | 0.00 | 0.00 | 0.00 |
| | | Construction equipment (other) | 5 | 1 | 2 | 172 | Yes | 3 | 5/16/2028 | 8/15/2028 | 2028 | 72 | 0.06 | 3.70 | 0.26 | 218.90 | 0.01 | 0.01 | 0.00 | 0.00 | 0.10 | 0.01 | 5.98 | 0.00 | 0.00 | 0.00 |

| | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | CO2e |
|---|---|---|---|---|---|---|---|---|---|
| tons per year | | 0.11 | 5.51 | 0.76 | 329 | 0.02 | 0.01 | 0.00 | 298 |
| pounds per day | | 0.27 | 13.9 | 1.92 | 831 | 0.04 | 0.04 | 0.01 | |
| | | ROG | CO | NOx | CO2 | PM10 | PM2.5 | SOx | CO2e |
| tpy | 2025 | 0.03 | 1.45 | 0.18 | 92 | 0.00 | 0.00 | 0.00 | 84 |
| ppd | 2025 | 0.20 | 20.1 | 2.57 | 1,280 | 0.06 | 0.05 | 0.01 | |
| tpy | 2026 | 0.02 | 1.17 | 0.15 | 66 | 0.00 | 0.00 | 0.00 | 60 |
| ppd | 2026 | 0.33 | 17.7 | 2.33 | 996 | 0.05 | 0.04 | 0.01 | |
| tpy | 2027 | 0.03 | 1.40 | 0.18 | 89 | 0.00 | 0.00 | 0.00 | 81 |
| ppd | 2027 | 0.19 | 19.5 | 2.52 | 1,240 | 0.06 | 0.05 | 0.01 | |
| tpy | 2028 | 0.03 | 1.50 | 0.24 | 82 | 0.00 | 0.00 | 0.00 | 74 |
| ppd | 2028 | 0.28 | 14.7 | 2.37 | 801 | 0.04 | 0.03 | 0.01 | |

| Tier 4 | EF (g/hp-hr) | HP | Annual Emissions (tons) | Daily Emissions (lbs) | | |
|---|---|---|---|---|---|---|
| NOx | 0.50 | 670 | 0.04 | 1.48 | 100 | hours per year |
| CO | 2.60 | 670 | 0.19 | 7.68 | 2 | hours per day |
| SOx | 1.84 | 670 | 0.14 | 5.42 | | |
| PM10/PM2.5 | 0.03 | 670 | 0.00 | 0.09 | | |
| CO2 | 526 | 670 | 38.9 | 1,554 | 35.3 | metric tons |
| TOC (ROG) | 0.19 | 670 | 0.01 | 0.56 | | |

Source:
http://www.ourair.org/dice/emission-factors-2/
Nonroad CI Engine Emission Standards from Title 13, California Code of Regulations, Section 2423

| | EF (lb/hp-hr) | EF (g/hp-hr) | | |
|---|---|---|---|---|
| | | | 3,473 | gallons |
| NOx (Uncontrolled) | 0.024 | 10.88623 | | |
| NOx (Controlled) | 0.013 | 5.896708 | 10.15 | kg/CO2/gal |
| CO | 0.0055 | 2.494761 | | |
| SOx | 0.000809 | 0.366957 | | |
| PM10/PM2.5 | 0.0007 | 0.317515 | | |
| CO2 | 1.16 | 526.1678 | | |
| TOC (ROG) | 0.000705 | 0.319783 | | |

Source: USEPA AP-42 Section 3.4

**Attachment B**

**Health Risk Assessment Results**

- **Construction - Unmitigated**
- **Construction – Mitigated**
- **Operations – Generator**

# Attachment B

# Health Risk Assessment Methodology and Assumptions

A health risk assessment (HRA) is accomplished in four steps: 1) hazards identification, 2) exposure assessment, 3) toxicity assessment, and 4) risk characterization. These steps cover the estimation of air emissions, the estimation of the air concentrations resulting from a dispersion analysis, the incorporation of the toxicity of the pollutants emitted, and the characterization of the risk based on exposure parameters such as breathing rate, age adjustment factors, and exposure duration; each depending on receptor type (i.e., residence, school, daycare centers, hospitals, senior care facilities, recreational areas, adult, infant, child).

This HRA was conducted in accordance with technical guidelines developed by federal, state, and regional agencies, including U.S. Environmental Protection Agency (USEPA), California Environmental Protection Agency (CalEPA), California Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*[1] and the Bay Area Air Quality Management District (BAAQMD) *Health Risk Screening Analysis Guidelines*.[2] This HRA addresses the emissions from construction activities including onsite equipment and haul trucks. Specific focus is on diesel particulate matter (DPM) and particulate matter equal to or less than 2.5 micrometers (fine particulate or $PM_{2.5}$) emissions. Gasoline-fueled vehicles emit air toxics in much smaller quantities and toxicity levels compared to DPM. Thus, gasoline-fueled emission sources were not included in the HRA. Secondly, air toxics emissions from project operations is not expected to be substantial (as shown in Section 7 of the Air Quality Technical Report incremental increases in operational emissions due to employee vehicles, and delivery trucks would be well below significance thresholds and not a large source of air toxics) and thus, the HRA focused on construction equipment emissions of DPM.

According to CalEPA, a HRA should not be interpreted as the expected rates of cancer or other potential human health effects, but rather as estimates of potential risk or likelihood of adverse effects based on current knowledge, under a number of highly conservative assumptions and the best assessment tools currently available.

## TERMS AND DEFINITIONS

As the practice of conducting an HRA is particularly complex and involves concepts that are not altogether familiar to most people, several terms and definitions are provided that are considered essential to the understanding of the approach, methodology and results:

> *Acute effect* – a health effect (non-cancer) produced within a short period of time (few minutes to several days) following an exposure to toxic air contaminants (TAC).

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[1] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, March 6, 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html.

[2] Bay Area Air Quality Management District, *Health Risk Screening Analysis Guidelines*, January 2010, http://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx

*Cancer risk* – the probability of an individual contracting cancer from a lifetime (i.e., 70 year) exposure to TAC such as DPM in the ambient air.

*Chronic effect* – a health effect (non-cancer) produced from a continuous exposure occurring over an extended period (weeks, months, years).

*Hazard Index (HI)* – the unitless ratio of an exposure level over the acceptable reference dose. The HI can be applied to multiple compounds in an additive manner.

*Hazard Quotient (HQ)* – the unitless ratio of an exposure level over the acceptable reference dose. The HQ is applied to individual compounds.

*Toxic Air Contaminants* – any air pollutant that can cause short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). The current California list of TAC lists approximately 200 compounds, including particulate emissions from diesel-fueled engines.

*Human Health Effects* - comprise disorders such as eye watering, respiratory or heart ailments, and other (i.e., non-cancer) related diseases.

*Health Risk Assessment* – an analysis designed to predict the generation and dispersion of TAC in the outdoor environment, evaluate the potential for exposure of human populations, and to assess and quantify both the individual and population-wide health risks associated with those levels of exposure.

*Incremental* – under CEQA, the net difference (or change) in conditions or impacts when comparing the baseline to future year project conditions.

*Maximum exposed individual (MEI)* – an individual assumed to be located at the point where the highest concentrations of TAC, and therefore, health risks are predicted to occur.

*Non-cancer risks* – health risks such as eye watering, respiratory or heart ailments, and other non-cancer related diseases.

*Receptors* – the locations where potential health impacts or risks are predicted (i.e., schools, residences, and recreational sites).

## LIMITATIONS AND UNCERTAINTIES

There are several important limitations and uncertainties commonly associated with an HRA due to the wide variability of human exposures to TAC, the extended timeframes over which the exposures are evaluated, and the inability to verify the results. Limitations and uncertainties associated with the HRA and identified by the CalEPA include: (a.) lack of reliable monitoring data; (b.) extrapolation of toxicity data in animals to humans; (c.) estimation errors in calculating TAC emissions; (d.) concentration prediction errors with dispersion models; and (e.) the variability in lifestyles, fitness and other confounding factors of the human population. This HRA was performed using the best available data and methodologies, notwithstanding the following uncertainties:

- There are uncertainties associated with the estimation of emissions from project activities. Where project-specific data, such as emission factors, are not available, default assumptions in emission models were used.
- The limitations of the air dispersion model provide a source of uncertainty in the estimation of exposure concentrations. According to USEPA, errors due to the limitation of the algorithms implemented in the air dispersion model in the highest estimated concentrations of +/- 10 percent to 40 percent are typical.[3]
- The source parameters used to model emission sources add uncertainty. For all emission sources, the source parameters used source-specific, recommended as defaults, or expected to produce more conservative results. Discrepancies might exist in actual emissions characteristics of an emission source and its representation in the dispersion model.
- The exposure duration estimates do not consider that people do not usually reside at the same location for 30 years and that other exposures (i.e., school children) are also of much shorter durations than was assumed in this HRA. This exposure duration is a highly conservative assumption, since most people do not remain at home all day and on average residents change residences every 11 to 12 years. In addition, this assumption adopts that residents are experiencing outdoor concentrations for the entire exposure period.
- For the risk and hazards calculations as well as the cumulative health impact, numerous assumptions must be made in order to estimate human exposure to pollutants. These assumptions include parameters such as breathing rates, exposure time and frequency, exposure duration, and human activity patterns. While a mean value derived from scientifically defensible studies is the best estimate of central tendency, most of the exposure variables used in this HRA are high-end estimates. The combination of several high-end estimates used as exposure parameters may substantially overestimate pollutant intake. The excess lifetime cancer risks calculated in this HRA are therefore likely to be higher than may be required to be protective of public health.
- The Cal/EPA cancer potency factor for DPM was used to estimate cancer risks associated with exposure to DPM emissions from construction activities. However, the cancer potency factor derived by Cal/EPA for DPM is highly uncertain in both the estimation of response and dose. In the past, due to inadequate animal test data and epidemiology data on diesel exhaust, the International Agency for Research on Cancer (IARC), a branch of the World Health Organization, had classified DPM as Probably Carcinogenic to Humans (Group 2); the USEPA had also concluded that the existing data did not provide an adequate basis for quantitative risk assessment.[4] However, based on two recent scientific studies,[5] IARC recently re-classified DPM

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[3] US Environmental Protection Agency, *Guideline on Air Quality Models (Revised), 40 Code of Federal Regulations, Part 51, Appendix W,* November 2005, https://www3.epa.gov/scram001/guidance/guide/appw_05.pdf

[4] US Environmental Protection Agency, *Health Assessment Document for Diesel Engine Exhaust*, May 2002, https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=29060

as Carcinogenic to Humans to Group 1,[6] which means that the agency has determined that there is "sufficient evidence of carcinogenicity" of a substance in humans and represents the strongest weight-of-evidence rating in IARC's carcinogen classification scheme. This determination by the IARC may provide additional impetus for the USEPA to identify a quantitative dose-response relationship between exposure to DPM and cancer.

In summary, the estimated health impacts are based primarily on a series of conservative assumptions related to predicted environmental concentrations, exposure, and chemical toxicity. The use of conservative assumptions tends to produce upper-bound estimates of risk. BAAQMD acknowledges this uncertainty by stating: "the methods used [to estimate risk] are conservative, meaning that the real risks from the source may be lower than the calculations, but it is unlikely that they will be higher." The USEPA notes that the conservative assumptions used in a HRA are intended to assure that the estimated risks do not underestimate the actual risks posed by a site and that the estimated risks do not necessarily represent actual risks experienced by populations at or near a site.[7]

## HAZARDS IDENTIFICATION

California Air Resources Board (CARB) has developed a list of TAC, where a TAC is "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health (California Health and Safety Code Section 39655). All USEPA hazardous air pollutants are TAC. CARB administers the Air Toxics "Hot Spots" program under Assembly Bill 2588 "Hot Spots" Information and Assessment Act, which requires periodic local review of facilities which emit TAC. Local air agencies periodically must prioritize stationary sources of TAC and prepare health risk assessments for high-priority sources.

Diesel exhaust is a complex mixture of numerous individual gaseous and particulate compounds emitted from diesel-fueled combustion engines. Diesel particulate matter is formed primarily through the incomplete combustion of diesel fuel. DPM is removed from the atmosphere through physical processes including atmospheric fall-out and washout by rain. Humans can be exposed to airborne DPM by deposition on water, soil, and vegetation; although the main pathway of exposure is inhalation. Cal/EPA has concluded that potential cancer risk from inhalation exposure to whole diesel exhaust outweigh the multi-pathway cancer risk from the speciated components.

In August 1998, the CARB identified DPM as an air toxic. CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel- Fueled Engines and Vehicles* and *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* and approved these documents on

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[5] Attfield MD, Schleiff PL, Lubin JH, Blair A, Stewart PA, Vermeulen R, Coble JB, Silverman DT, *The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust*, June 2012, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3369553/

[6] International Agency for Research on Cancer, *Diesel Engine Exhaust Carcinogenic*, June 2012, https://www.iarc.fr/en/media-centre/pr/2012/pdfs/pr213_E.pdf

[7] US Environmental Protection Agency, *Risk Assessment Guidance for Superfund Human Health Risk Assessment*, December 1989, https://www.epa.gov/sites/production/files/2015-09/documents/rags_a.pdf

September 28, 2000.[8] [9] The documents represent proposals to reduce DPM emissions, with the goal of reducing emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020. The program aimed to require the use of state-of-the-art catalyzed DPM filters and ultra-low-sulfur diesel fuel.

In 2001, CARB assessed the state-wide health risks from exposure to diesel exhaust and to other toxic air contaminants. It is difficult to distinguish the health risks of diesel emissions from those of other air toxics, since diesel exhaust contains approximately 40 different TAC. The CARB study detected diesel exhaust by using ambient air carbon soot measurements as a surrogate for diesel emissions. The study reported that the state-wide cancer risk from exposure to diesel exhaust was about 540 per million population as compared to a total risk for exposure to all ambient air toxics of 760 per million. This estimate, which accounts for about 70 percent of the total risk from TAC, included both urban and rural areas in the state. The estimate can also be considered an average worst-case for the state, since it assumes constant exposure to outdoor concentrations of diesel exhaust and does not account for expected lower concentrations indoors, where most of time is spent. DPM is estimated to increase statewide cancer risk by 520 cancers per million residents exposed over a lifetime.[10]

Exposure to DPM results in a greater incidence of chronic non-cancer health effects, such as cough, labored breathing, chest tightness, wheezing, and bronchitis. Individuals particularly vulnerable to DPM are children, whose lung tissue is still developing, the elderly and people with illnesses who may have other serious health problems that can be aggravated by exposure to DPM. In general, children are more vulnerable than adults to air pollutants because they have higher inhalation rates, narrower airways, and less mature immune systems. In addition, children with allergies may have an enhanced allergic response when exposed to diesel exhaust.

## EXPOSURE ASSESSMENT

Dispersion is the process by which atmospheric pollutants disseminate due to wind and vertical stability. The results of a dispersion analysis are used to assess pollutant concentrations at or near an emission source. The results of an analysis allow predicted concentrations of pollutants to be compared directly to air quality standards and other criteria such as health risks based on modeled concentrations.

A rising pollutant plume reacts with the environment in several ways before it levels off. First, the plume's own turbulence interacts with atmospheric turbulence to entrain ambient air. This mixing process reduces and eventually eliminates the density and momentum differences that cause the plume to rise. Second, the wind transports the plume during its rise and entrainment process. Higher winds mix the plume more rapidly, resulting in a lower final rise. Third, the plume interacts with the vertical temperature stratification of the atmosphere, rising as a result of buoyancy in the unstable-to-neutrally

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[8] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles,* October 2000, http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf

[9] California Air Resources Board, *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines,* October 2000, https://www.arb.ca.gov/diesel/documents/rmgFinal.pdf

[10] California Air Resources Board, *Summary: Diesel Particulate Matter Health Impacts*, April 12, 2016, https://www.arb.ca.gov/research/diesel/diesel-health_summ.htm

stratified mixed layer. However, after the plume encounters the mixing lid and the stably stratified air above, its vertical motion is dampened.

Molecules of gas or small particles injected into the atmosphere will separate from each other as they are acted on by turbulent eddies. The Gaussian mathematical model such as AERMOD simulates the dispersion of the gas or particles within the atmosphere. The formulation of the Gaussian model is based on the following assumptions:

- The predictions are not time-dependent (all conditions remain unchanged with time)
- The wind speed and direction are uniform, both horizontally and vertically, throughout the region of concern
- The rate of diffusion is not a function of position
- Diffusion in the direction of the transporting wind is negligible when compared to the transport flow

**Dispersion Modeling Approach**

Air dispersion modeling was performed to estimate the downwind dispersion of DPM exhaust emissions resulting from construction activities. The following sections present the fundamental components of an air dispersion modeling analysis including air dispersion model selection and options, receptor locations, meteorological data, and source exhaust parameters.

**Model Selection and Options**

AERMOD (Version 23132)[11] was used for the dispersion analysis. AERMOD is the USEPA preferred atmospheric dispersion modeling system for general industrial sources. The model can simulate point, area, volume, and line sources. AERMOD is the appropriate model for this analysis based on the coverage of simple, intermediate, and complex terrain. It also predicts both short-term and long-term (annual) average concentrations. The model was executed using the regulatory default options (stack-tip downwash, buoyancy-induced dispersion, and final plume rise), default wind speed profile categories, default potential temperature gradients, and assuming no pollutant decay.

The selection of the appropriate dispersion coefficients depends on the land use within three kilometers (km) of the project site. The types of land use were based on the classification method defined by Auer (1978); using pertinent United States Geological Survey (USGS) 1:24,000 scale (7.5 minute) topographic maps of the area. If the Auer land use types of heavy industrial, light-to-moderate industrial, commercial, and compact residential account for 50 percent or more of the total area, the USEPA *Guideline on Air Quality Models*[12] recommends using urban dispersion coefficients; otherwise, the appropriate rural coefficients can be used. Based on observation of the area surrounding the project

[11] US Environmental Protection Agency, AERMOD Modeling System, https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models

[12] US Environmental Protection Agency, *Guideline on Air Quality Models (Revised), 40 Code of Federal Regulations, Part 51, Appendix W,* November 2005, https://www3.epa.gov/scram001/guidance/guide/appw_05.pdf

site, rural (urban is only designated within dense city centers such as downtown San Francisco) dispersion coefficients were applied within AERMOD.

**Receptor Locations**

Some receptors are considered more sensitive to air pollutants than others, because of preexisting health problems, proximity to the emissions source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are also considered sensitive to poor air quality because people in residential areas are often at home for extended periods. Recreational land users are moderately sensitive to air pollution because vigorous exercise associated with recreation places having a high demand on respiratory system function.

BAAQMD considers the relevant zone of influence for an assessment of air quality health risks to be within 1,000 feet of a project site. The WTP is in proximity to residential zoned land. The project site is within 1,000 feet of residence to the south, west, and northwest. Toyon Elementary School is located within 0.6 miles to the southwest of the project site. **Figure B-1** displays the sensitive receptors within 1,000 feet of the project site. The sensitive receptors include residences, school, assisted living facilities, and day care. Receptors were placed at a height of 1.8 meters (typical breathing height). No school, assisted living facilities, and day care are located within 1,000 feet of the project site. Terrain elevations for receptor locations were used based on available USGS information for the area.

**Meteorological Data**

Hourly meteorological data from San Jose International Airport (surface data), located approximately 5.7 miles to the west-southwest of the proposed project, and Oakland International Airport (upper air) were used in the dispersion modeling analysis. **Figure B-3** displays the annual wind rose. Wind directions are predominantly from the northwest and southeast with a low frequency of calm wind speed conditions (1.2 percent), as shown in **Figure B-4**. The average annual wind speed is 7.1 miles per hour (3.2 meters per second).

**Figure B-1**
**Health Risk Assessment Sensitive Receptors**

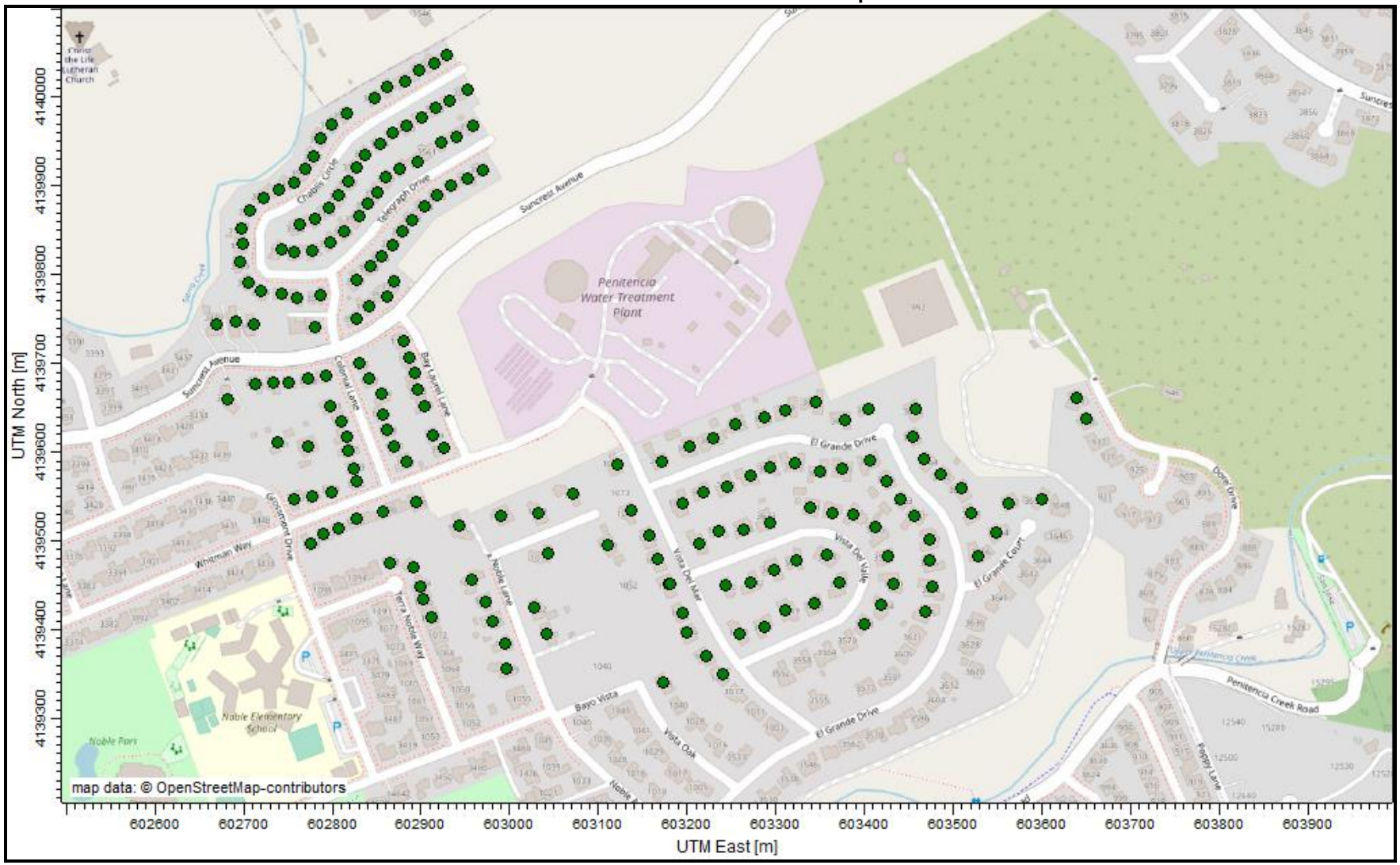


**Figure B-2**
**Windrose for San Jose International Airport**

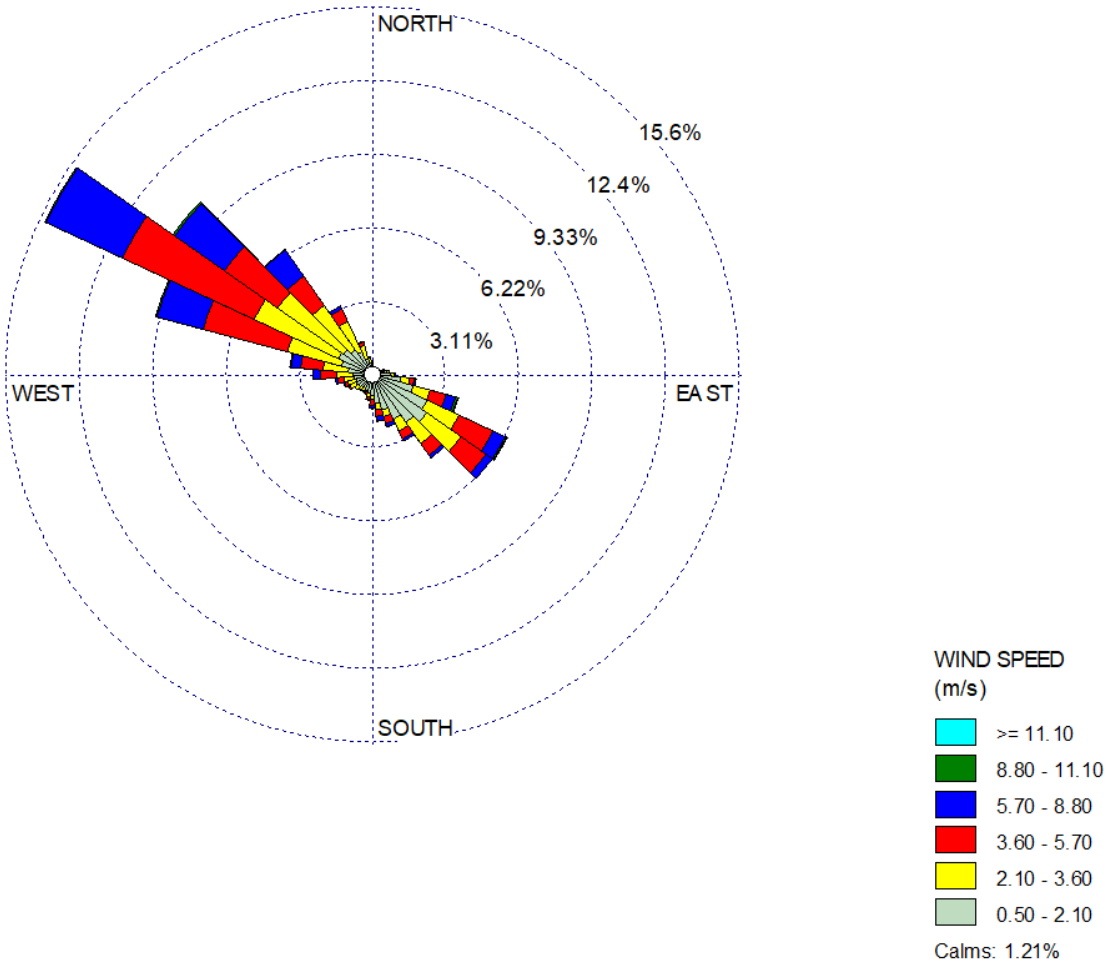
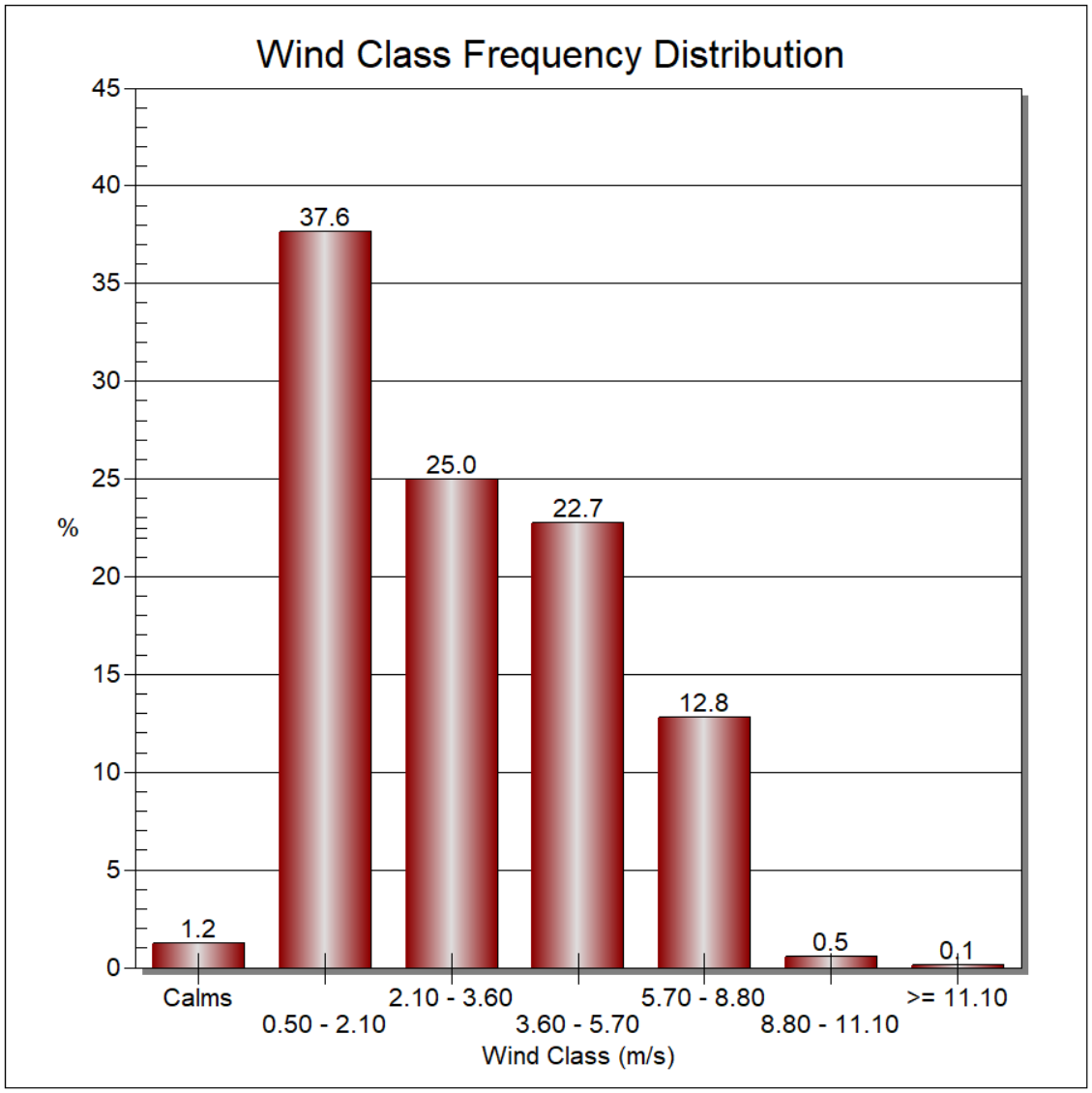


**Figure B-4**
**Wind Speed Distribution for San Jose International Airport**



**Source Release Characteristics**

Construction equipment activities were treated as an area source. The release height of the off-road equipment exhaust was 5.0 meters (16.4 feet) and an initial vertical dimension of 1.4 meters (4.6 feet), which reflects the height of the equipment plus an additional height of the exhaust plume above the exhaust point to account for plume rise due to buoyancy and momentum. Fugitive dust-generating activities were treated as an area source. The release height of the fugitive dust was 0.0 meters (0.0 feet) and an initial vertical dimension of 1.0 meter (3.3 feet). Haul trucks were treated as a line source (i.e., volume sources placed at regular intervals) located along an access road. The haul trucks were assigned a release height of 5.0 meters (16.4 feet) and an initial vertical dimension of 1.4 meters (4.6 feet), which accounts for dispersion from the movement of vehicles.[13] [14]

Construction activities would be conducted from 7 a.m. to 7 p.m. Monday through Friday and from 8:00 a.m. to 5:00 p.m. on Saturday. Construction could occur during early morning hours or outside normal working hours for specified construction activities such as concrete delivery and pours for proposed structures and buildings, during outages, or to respond to unplanned disruptions in plant operations. The extended workdays would be approximately 16 hours long, and the total number of extended workdays would occur for a total of three weeks, nonconsecutively over the course of the construction period.

A new separate standby generator, rated at 500 kilowatts, would provide backup power for critical equipment in the event of power interruptions, for the sludge holding and dewatering facilities. The new standby generator would be located in the electrical building to the northeast of the washwater recovery ponds. The standby generators would be tested monthly for two hours. The new standby generator used during operations was assigned a stack with a height of 10 feet (3.0 meters), a diameter of 0.75 foot (0.2 meter), an exit temperature of 850 Fahrenheit (454 Celsius), and an exhaust flow of 3,500 cubic feet (99 cubic meters) per minute.

Terrain elevations for emission source locations were used based on available USGS information for the area. AERMAP (Version 18081)[15] was used to develop the terrain elevations.

## EXPOSURE PARAMETERS

This HRA was conducted following methodologies in OEHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.[16] This was accomplished by applying the estimated

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[13] While haul truck emissions contribute substantially to overall project emissions, they are spread over many miles. Hence, the portion of trucking emissions that would impact one receptor is much smaller than the emissions that the clustered off-road activity at the project site would impact a receptor near the site. For example, the DPM emissions from truck travel within 1,000 feet of the project are less than one percent of the total off-road DPM emissions.

[14] South Coast Air Quality Management District, Final Localized Significance Threshold Methodology. July 2008, http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2

[15] US Environmental Protection Agency, AERMAP, https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models

concentrations at the receptors analyzed to the established cancer risk estimates and acceptable reference concentrations for non-cancer health effects.

OEHHA's revisions to its *Guidance Manual* were primarily designed to ensure that the greater sensitivity of children to cancer and other health risks is reflected in HRAs. For example, OEHHA now recommends that risks be analyzed separately for multiple age groups, focusing especially on young children and teenagers, rather than the past practice of analyzing risks to the general population, without distinction by age. OEHHA also now recommends that statistical "age sensitivity factors" be incorporated into an HRA, and that children's relatively high breathing rates be accounted for. On the other hand, the *Guidance Manual* revisions also include some changes that would reduce calculated health risks. For example, under the former guidance, OEHHA recommended that residential cancer risks be assessed by assuming 70 years of exposure at a residential receptor; under the *Guidance Manual*, this assumption is lessened to 30 years.

OEHHA has developed exposure factors (e.g., daily breathing rates) for six age groups including the last trimester to birth, birth to 2 years, 2 to 9 years, 2 to 16 years, 16 to 30 years, and 16 to 70 years. These age bins allow for more refined exposure information to be used when estimating exposure and the potential for developing cancer over a lifetime. This means that exposure variates are needed for the third trimester, ages zero to less than two, ages two to less than nine, ages two to less than 16, ages 16 to less than 30, and ages 16 to 70. Residential receptors utilize the 95$^{th}$ percentile breathing rate values. The breathing rates are age-specific and are 1,090 liters per kilogram-day for ages less than 2 years, 745 liters per kilogram-day for ages 2 to 16 years, 335 liters per kilogram-day for ages 16 to 30 years, and 290 liters per kilogram-day for ages 30 to 70 years. A school child breathing rate is 520 liters per kilogram-day and an off-site worker breathing rate is 230 liters per kilogram-day.

OEHHA developed age sensitivity factors (ASF) to consider the increased sensitivity to carcinogens during early-in-life exposures. OEHHA recommends that cancer risks be weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age, and by a factor of 3 for exposures from 2 years through 15 years of age.

Based on OEHHA recommendations, the cancer risk to residential receptors assumes exposure occurs 24 hours per day for 350 days per year while accounting for a percentage of time at home. OEHHA evaluated information from activity pattern databases to estimate the fraction of time at home (FAH) during the day. This information was used to adjust exposure duration and cancer risk based on the assumption that a person is not present at home continuously for 24 hours and therefore exposure to emissions is not occurring when a person is away from their home. In general, the FAH factors are age-specific and are 0.85 for ages less than 2 years, 0.72 for ages 2 to 16 years, and 0.73 for ages 30 to 70 years.

OEHHA has decreased the exposure duration currently being used for estimating cancer risk at the maximum exposed individual resident from 70 years to 30 years. This is based on studies showing that 30 years is a reasonable estimate of the 90$^{th}$ to 95$^{th}$ percentile of residency duration in the population.

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[16] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, March 6, 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html

Additionally, OEHHA recommends using the 9 and 70-year exposure duration to represent the potential impacts over the range of residency periods.

Given the exposure durations of less than 24 hours, sensitive recreational receptors were evaluated for acute impacts only. Based on OEHHA recommendations, for children at school sites, exposure is assumed to occur 10 hours per day for 180 days (or 36 weeks) per year. Cancer risk estimates for children at school sites are calculated based on 9-year exposure duration. School sites also include teachers and other adult staff which are treated as off-site workers.

## RISK CHARACTERIZATION

Cancer risk is defined as the lifetime probability of developing cancer from exposure to carcinogenic substances. Cancer risks are expressed as the chance in one million of getting cancer (i.e., number of cancer cases among one million people exposed). The cancer risks are assumed to occur exclusively through the inhalation pathway. The cancer risk can be estimated by using the cancer potency factor (milligrams per kilogram of body weight per day [mg/kg-day]), the 30-year annual average concentration (microgram per cubic meter [µg/$m^3$]), and the lifetime exposure adjustment.

Following guidelines established by OEHHA, the incremental cancer risks attributable to the proposed project were calculated by applying exposure parameters to modeled DPM concentrations in order to determine the inhalation dose (mg/kg-day) or the amount of pollutants inhaled per body weight mass per day. The cancer risks occur exclusively through the inhalation pathway; therefore, the cancer risks can be estimated from the following equation:

$$\text{Dose-inh} = \frac{C_{air} * \{DBR\} * A * ASF * FAH * EF * ED * 10^{-6}}{AT}$$

where:

| | |
|---|---|
| Dose-inh | = Dose of the toxic substance through inhalation in mg/kg-day |
| $10^{-6}$ | = Micrograms to milligrams conversion, Liters to cubic meters conversion |
| $C_{air}$ | = Concentration in air in microgram (µg)/cubic meter ($m^3$) |
| {DBR} | = Daily breathing rate in liter (L)/kg body weight – day |
| A | = Inhalation absorption factor, 1.0 |
| ASF | = Age Sensitivity Factor |
| EF | = Exposure frequency (days/year) |
| ED | = Exposure duration (years) |
| FAH | = Fraction of Time at Home |
| AT | = Averaging time period over which exposure is averaged in days (25,550 days for a 70-year cancer risk) |

To determine incremental cancer risk, the estimated inhalation dose attributed to the proposed project was multiplied by the cancer potency slope factor (cancer risk per mg/kg-day). The cancer potency slope factor is the upper bound on the increased cancer risk from a lifetime exposure to a pollutant. These

slope factors are based on epidemiological studies and are different values for different pollutants. This allows the estimated inhalation dose to be equated to a cancer risk.

Non-cancer adverse health impacts, acute (short-term) and chronic (long-term), are measured against a hazard index (HI), which is defined as the ratio of the predicted incremental exposure concentration from the proposed project to a published reference exposure level (REL) that could cause adverse health effects as established by OEHHA. The ratio (referred to as the Hazard Quotient [HQ]) of each non-carcinogenic substance that affects a certain organ system is added to produce an overall HI for that organ system. The overall HI is calculated as the total for each organ system. If the overall HI for the highest-impacted organ system is greater than one, then the impact is significant.

The HI is an expression used for the potential for non-cancer health effects. The relationship for the non-cancer health effects is given by the annual concentration (in $\mu g/m^3$) and the REL (in $\mu g/m^3$). The acute hazard index was determined using the "simple" concurrent maximum approach, which tends to be conservative (i.e., overpredicts).

The relationship for the non-cancer health effects is given by the following equation:

$$HI = C/REL$$

where:

HI = Hazard index; an expression of the potential for non-cancer health effects.

C = Annual average concentration ($\mu g/m^3$) during the 70-year exposure period.

REL = Concentration at which no adverse health effects are anticipated.

The chronic REL for DPM was established by the California OEHHA as 5 $\mu g/m^3$.[17] There is no acute REL for DPM.

[17] Office of Environmental Health Hazards Assessment - Acute, 8-hour, and Chronic Reference Exposure Levels, June 2014, http://www.oehha.ca.gov/air/allrels.html

**Health Risk Assessment Assumptions**

| | | |
|---|---|---|
| 5 | Chronic Reference Exposure Level (ug/m3) for DPM | |
| 1.1 | Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM | |
| 350 | days per year | |
| 25,550 | days per lifetime | |
| 1,090 | 95th Percentile Daily Breathing Rates (L/kg-day) | 0<2 Years |
| 861 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<9 Years |
| 745 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<16 Years |
| 335 | 95th Percentile Daily Breathing Rates (L/kg-day) | 16<30 Years |
| 290 | 95th Percentile Daily Breathing Rates (L/kg-day) | 30<70 Years |
| 0.85 | fraction of t | 0<2 Years |
| 0.72 | fraction of t | 2<16 Years |
| 0.73 | fraction of t | 16<70 Years |

| | |
|---|---|
| Project: | Penitencia Water Treatment Plant |
| Date: | 5/7/2024 |
| Condition: | Unmitigated Construction |
| Receptor: | Existing Residence |
| Year: | 2025 |

| Exposure Year | Calender Year | Annual DPM Concentration (ug/m3) | Annual PM2.5 Concentration (ug/m3) | Daily Breathing Rates (L/kg-day) | Exposure Factor | fraction of time at home | Cancer Risk |
|---|---|---|---|---|---|---|---|
| 1 | 2025 | 0.06 | 0.24 | 1,090 | 10.0 | 0.85 | 8.24 |
| 2 | 2026 | 0.05 | 0.22 | 1,090 | 10.0 | 0.85 | 6.48 |
| 3 | 2027 | 0.05 | 0.22 | 745 | 4.75 | 0.72 | 1.75 |
| 4 | 2028 | 0.03 | 0.20 | 745 | 3.00 | 0.72 | 0.67 |
| 5 | 2029 | | | 745 | 3.00 | 0.72 | |
| 6 | 2030 | | | 745 | 3.00 | 0.72 | |
| 7 | 2031 | | | 745 | 3.00 | 0.72 | |
| 8 | 2032 | | | 745 | 3.00 | 0.72 | |
| 9 | 2033 | | | 745 | 3.00 | 0.72 | |
| 10 | 2034 | | | 745 | 3.00 | 0.72 | |
| 11 | 2035 | | | 745 | 3.00 | 0.72 | |
| 12 | 2036 | | | 745 | 3.00 | 0.72 | |
| 13 | 2037 | | | 745 | 3.00 | 0.72 | |
| 14 | 2038 | | | 745 | 3.00 | 0.72 | |
| 15 | 2039 | | | 745 | 3.00 | 0.72 | |
| 16 | 2040 | | | 745 | 3.00 | 0.72 | |
| 17 | 2041 | | | 335 | 1.70 | 0.73 | |
| 18 | 2042 | | | 335 | 1.00 | 0.73 | |
| 19 | 2043 | | | 335 | 1.00 | 0.73 | |
| 20 | 2044 | | | 335 | 1.00 | 0.73 | |
| 21 | 2045 | | | 335 | 1.00 | 0.73 | |
| 22 | 2046 | | | 335 | 1.00 | 0.73 | |
| 23 | 2047 | | | 335 | 1.00 | 0.73 | |
| 24 | 2048 | | | 335 | 1.00 | 0.73 | |
| 25 | 2049 | | | 335 | 1.00 | 0.73 | |
| 26 | 2050 | | | 335 | 1.00 | 0.73 | |
| 27 | 2051 | | | 335 | 1.00 | 0.73 | |
| 28 | 2052 | | | 335 | 1.00 | 0.73 | |
| 29 | 2053 | | | 335 | 1.00 | 0.73 | |
| 30 | 2054 | | | 335 | 1.00 | 0.73 | |

| | |
|---|---|
| 0.24 | Maximum Annual PM2.5 Concentration (ug/m3) |
| 0.3 | Significance Threshold (ug/m3) |
| No | Significant? |
| 0.01 | Chronic Hazard Impact |
| 1 | Significance Threshold |
| No | Significant? |
| 17.1 | Cancer Risk (Child) |
| 10 | Significance Threshold |
| Yes | Significant? |
| 1.12 | Cancer Risk (Adult) |
| 10 | Significance Threshold |
| No | Significant? |

**Health Risk Assessment Assumptions**

| | | |
|---|---|---|
| 5 | Chronic Reference Exposure Level (ug/m3) for DPM | |
| 1.1 | Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM | |
| 350 | days per year | |
| 25,550 | days per lifetime | |
| 1,090 | 95th Percentile Daily Breathing Rates (L/kg-day) | 0<2 Years |
| 861 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<9 Years |
| 745 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<16 Years |
| 335 | 95th Percentile Daily Breathing Rates (L/kg-day) | 16<30 Years |
| 290 | 95th Percentile Daily Breathing Rates (L/kg-day) | 30<70 Years |
| 0.85 | fraction of t | 0<2 Years |
| 0.72 | fraction of t | 2<16 Years |
| 0.73 | fraction of t | 16<70 Years |

| | |
|---|---|
| Project: | Penitencia Water Treatment Plant |
| Date: | 5/7/2024 |
| Condition: | Unmitigated Construction |
| Receptor: | Existing Residence |
| Year: | 2026 |

| Exposure Year | Calender Year | Annual DPM Concentration (ug/m3) | Annual PM2.5 Concentration (ug/m3) | Daily Breathing Rates (L/kg-day) | Exposure Factor | fraction of time at home | Cancer Risk |
|---|---|---|---|---|---|---|---|
| 1 | 2026 | 0.05 | 0.22 | 1,090 | 10.0 | 0.85 | 6.48 |
| 2 | 2027 | 0.05 | 0.22 | 1,090 | 10.0 | 0.85 | 6.38 |
| 3 | 2028 | 0.03 | 0.20 | 745 | 4.75 | 0.72 | 1.06 |
| 4 | 2029 | | | 745 | 3.00 | 0.72 | |
| 5 | 2030 | | | 745 | 3.00 | 0.72 | |
| 6 | 2031 | | | 745 | 3.00 | 0.72 | |
| 7 | 2032 | | | 745 | 3.00 | 0.72 | |
| 8 | 2033 | | | 745 | 3.00 | 0.72 | |
| 9 | 2034 | | | 745 | 3.00 | 0.72 | |
| 10 | 2035 | | | 745 | 3.00 | 0.72 | |
| 11 | 2036 | | | 745 | 3.00 | 0.72 | |
| 12 | 2037 | | | 745 | 3.00 | 0.72 | |
| 13 | 2038 | | | 745 | 3.00 | 0.72 | |
| 14 | 2039 | | | 745 | 3.00 | 0.72 | |
| 15 | 2040 | | | 745 | 3.00 | 0.72 | |
| 16 | 2041 | | | 745 | 3.00 | 0.72 | |
| 17 | 2042 | | | 335 | 1.70 | 0.73 | |
| 18 | 2043 | | | 335 | 1.00 | 0.73 | |
| 19 | 2044 | | | 335 | 1.00 | 0.73 | |
| 20 | 2045 | | | 335 | 1.00 | 0.73 | |
| 21 | 2046 | | | 335 | 1.00 | 0.73 | |
| 22 | 2047 | | | 335 | 1.00 | 0.73 | |
| 23 | 2048 | | | 335 | 1.00 | 0.73 | |
| 24 | 2049 | | | 335 | 1.00 | 0.73 | |
| 25 | 2050 | | | 335 | 1.00 | 0.73 | |
| 26 | 2051 | | | 335 | 1.00 | 0.73 | |
| 27 | 2052 | | | 335 | 1.00 | 0.73 | |
| 28 | 2053 | | | 335 | 1.00 | 0.73 | |
| 29 | 2054 | | | 335 | 1.00 | 0.73 | |
| 30 | 2055 | | | 335 | 1.00 | 0.73 | |

| | |
|---|---|
| 0.22 | Maximum Annual PM2.5 Concentration (ug/m3) |
| 0.3 | Significance Threshold (ug/m3) |
| No | Significant? |
| 0.01 | Chronic Hazard Impact |
| 1 | Significance Threshold |
| No | Significant? |
| 13.9 | Cancer Risk (Child) |
| 10 | Significance Threshold |
| Yes | Significant? |
| 0.75 | Cancer Risk (Adult) |
| 10 | Significance Threshold |
| No | Significant? |

**Health Risk Assessment Assumptions**

| | | |
|---|---|---|
| 5 | Chronic Reference Exposure Level (ug/m3) for DPM | |
| 1.1 | Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM | |
| 350 | days per year | |
| 25,550 | days per lifetime | |
| 1,090 | 95th Percentile Daily Breathing Rates (L/kg-day) | 0<2 Years |
| 861 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<9 Years |
| 745 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<16 Years |
| 335 | 95th Percentile Daily Breathing Rates (L/kg-day) | 16<30 Years |
| 290 | 95th Percentile Daily Breathing Rates (L/kg-day) | 30<70 Years |
| 0.85 | fraction of t | 0<2 Years |
| 0.72 | fraction of t | 2<16 Years |
| 0.73 | fraction of t | 16<70 Years |

| | |
|---|---|
| Project: | Penitencia Water Treatment Plant |
| Date: | 5/7/2024 |
| Condition: | Unmitigated Construction |
| Receptor: | Existing Residence |
| Year: | 2027 |

| Exposure Year | Calender Year | Annual DPM Concentration (ug/m3) | Annual PM2.5 Concentration (ug/m3) | Daily Breathing Rates (L/kg-day) | Exposure Factor | fraction of time at home | Cancer Risk |
|---|---|---|---|---|---|---|---|
| 1 | 2027 | 0.05 | 0.22 | 1,090 | 10.0 | 0.85 | 6.54 |
| 2 | 2028 | 0.03 | 0.20 | 1,090 | 10.0 | 0.85 | 4.00 |
| 3 | 2029 | | | 745 | 4.75 | 0.72 | |
| 4 | 2030 | | | 745 | 3.00 | 0.72 | |
| 5 | 2031 | | | 745 | 3.00 | 0.72 | |
| 6 | 2032 | | | 745 | 3.00 | 0.72 | |
| 7 | 2033 | | | 745 | 3.00 | 0.72 | |
| 8 | 2034 | | | 745 | 3.00 | 0.72 | |
| 9 | 2035 | | | 745 | 3.00 | 0.72 | |
| 10 | 2036 | | | 745 | 3.00 | 0.72 | |
| 11 | 2037 | | | 745 | 3.00 | 0.72 | |
| 12 | 2038 | | | 745 | 3.00 | 0.72 | |
| 13 | 2039 | | | 745 | 3.00 | 0.72 | |
| 14 | 2040 | | | 745 | 3.00 | 0.72 | |
| 15 | 2041 | | | 745 | 3.00 | 0.72 | |
| 16 | 2042 | | | 745 | 3.00 | 0.72 | |
| 17 | 2043 | | | 335 | 1.70 | 0.73 | |
| 18 | 2044 | | | 335 | 1.00 | 0.73 | |
| 19 | 2045 | | | 335 | 1.00 | 0.73 | |
| 20 | 2046 | | | 335 | 1.00 | 0.73 | |
| 21 | 2047 | | | 335 | 1.00 | 0.73 | |
| 22 | 2048 | | | 335 | 1.00 | 0.73 | |
| 23 | 2049 | | | 335 | 1.00 | 0.73 | |
| 24 | 2050 | | | 335 | 1.00 | 0.73 | |
| 25 | 2051 | | | 335 | 1.00 | 0.73 | |
| 26 | 2052 | | | 335 | 1.00 | 0.73 | |
| 27 | 2053 | | | 335 | 1.00 | 0.73 | |
| 28 | 2054 | | | 335 | 1.00 | 0.73 | |
| 29 | 2055 | | | 335 | 1.00 | 0.73 | |
| 30 | 2056 | | | 335 | 1.00 | 0.73 | |

| | |
|---|---|
| 0.22 | Maximum Annual PM2.5 Concentration (ug/m3) |
| 0.3 | Significance Threshold (ug/m3) |
| No | Significant? |
| 0.01 | Chronic Hazard Impact |
| 1 | Significance Threshold |
| No | Significant? |
| 10.5 | Cancer Risk (Child) |
| 10 | Significance Threshold |
| Yes | Significant? |
| 0.47 | Cancer Risk (Adult) |
| 10 | Significance Threshold |
| No | Significant? |

**Health Risk Assessment Assumptions**

| | | |
|---|---|---|
| 5 | Chronic Reference Exposure Level (ug/m3) for DPM | |
| 1.1 | Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM | |
| 350 | days per year | |
| 25,550 | days per lifetime | |
| 1,090 | 95th Percentile Daily Breathing Rates (L/kg-day) | 0<2 Years |
| 861 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<9 Years |
| 745 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<16 Years |
| 335 | 95th Percentile Daily Breathing Rates (L/kg-day) | 16<30 Years |
| 290 | 95th Percentile Daily Breathing Rates (L/kg-day) | 30<70 Years |
| 0.85 | fraction of t | 0<2 Years |
| 0.72 | fraction of t | 2<16 Years |
| 0.73 | fraction of t | 16<70 Years |

| | |
|---|---|
| Project: | Penitencia Water Treatment Plant |
| Date: | 5/7/2024 |
| Condition: | Unmitigated Construction |
| Receptor: | Existing Residence |
| Year: | 2028 |

| Exposure Year | Calender Year | Annual DPM Concentration (ug/m3) | Annual PM2.5 Concentration (ug/m3) | Daily Breathing Rates (L/kg-day) | Exposure Factor | fraction of time at home | Cancer Risk |
|---|---|---|---|---|---|---|---|
| 1 | 2028 | 0.03 | 0.20 | 1,090 | 10.0 | 0.85 | 3.84 |
| 2 | 2029 | | | 1,090 | 10.0 | 0.85 | |
| 3 | 2030 | | | 745 | 4.75 | 0.72 | |
| 4 | 2031 | | | 745 | 3.00 | 0.72 | |
| 5 | 2032 | | | 745 | 3.00 | 0.72 | |
| 6 | 2033 | | | 745 | 3.00 | 0.72 | |
| 7 | 2034 | | | 745 | 3.00 | 0.72 | |
| 8 | 2035 | | | 745 | 3.00 | 0.72 | |
| 9 | 2036 | | | 745 | 3.00 | 0.72 | |
| 10 | 2037 | | | 745 | 3.00 | 0.72 | |
| 11 | 2038 | | | 745 | 3.00 | 0.72 | |
| 12 | 2039 | | | 745 | 3.00 | 0.72 | |
| 13 | 2040 | | | 745 | 3.00 | 0.72 | |
| 14 | 2041 | | | 745 | 3.00 | 0.72 | |
| 15 | 2042 | | | 745 | 3.00 | 0.72 | |
| 16 | 2043 | | | 745 | 3.00 | 0.72 | |
| 17 | 2044 | | | 335 | 1.70 | 0.73 | |
| 18 | 2045 | | | 335 | 1.00 | 0.73 | |
| 19 | 2046 | | | 335 | 1.00 | 0.73 | |
| 20 | 2047 | | | 335 | 1.00 | 0.73 | |
| 21 | 2048 | | | 335 | 1.00 | 0.73 | |
| 22 | 2049 | | | 335 | 1.00 | 0.73 | |
| 23 | 2050 | | | 335 | 1.00 | 0.73 | |
| 24 | 2051 | | | 335 | 1.00 | 0.73 | |
| 25 | 2052 | | | 335 | 1.00 | 0.73 | |
| 26 | 2053 | | | 335 | 1.00 | 0.73 | |
| 27 | 2054 | | | 335 | 1.00 | 0.73 | |
| 28 | 2055 | | | 335 | 1.00 | 0.73 | |
| 29 | 2056 | | | 335 | 1.00 | 0.73 | |
| 30 | 2057 | | | 335 | 1.00 | 0.73 | |

| | |
|---|---|
| 0.20 | Maximum Annual PM2.5 Concentration (ug/m3) |
| 0.3 | Significance Threshold (ug/m3) |
| No | Significant? |
| 0.01 | Chronic Hazard Impact |
| 1 | Significance Threshold |
| No | Significant? |
| 3.84 | Cancer Risk (Child) |
| 10 | Significance Threshold |
| No | Significant? |
| 0.17 | Cancer Risk (Adult) |
| 10 | Significance Threshold |
| No | Significant? |

**Health Risk Assessment Assumptions**

| | | |
|---|---|---|
| 5 | Chronic Reference Exposure Level (ug/m3) for DPM | |
| 1.1 | Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM | |
| 350 | days per year | |
| 25,550 | days per lifetime | |
| | | |
| 1,090 | 95th Percentile Daily Breathing Rates (L/kg-day) | 0<2 Years |
| 861 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<9 Years |
| 745 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<16 Years |
| 335 | 95th Percentile Daily Breathing Rates (L/kg-day) | 16<30 Years |
| 290 | 95th Percentile Daily Breathing Rates (L/kg-day) | 30<70 Years |
| | | |
| 0.85 | fraction of t | 0<2 Years |
| 0.72 | fraction of t | 2<16 Years |
| 0.73 | fraction of t | 16<70 Years |

| | |
|---|---|
| Project: | Penitencia Water Treatment Plant |
| Date: | 5/7/2024 |
| Condition: | Mitigated Construction |
| Receptor: | Existing Residence |
| Year: | 2025 |

| Exposure Year | Calender Year | Annual DPM Concentration (ug/m3) | Annual PM2.5 Concentration (ug/m3) | Daily Breathing Rates (L/kg-day) | Exposure Factor | fraction of time at home | Cancer Risk |
|---|---|---|---|---|---|---|---|
| 1 | 2025 | 0.02 | 0.11 | 1,090 | 10.0 | 0.85 | 2.39 |
| 2 | 2026 | 0.01 | 0.10 | 1,090 | 10.0 | 0.85 | 1.89 |
| 3 | 2027 | 0.02 | 0.11 | 745 | 4.75 | 0.72 | 0.65 |
| 4 | 2028 | 0.01 | 0.10 | 745 | 3.00 | 0.72 | 0.27 |
| 5 | 2029 | | | 745 | 3.00 | 0.72 | |
| 6 | 2030 | | | 745 | 3.00 | 0.72 | |
| 7 | 2031 | | | 745 | 3.00 | 0.72 | |
| 8 | 2032 | | | 745 | 3.00 | 0.72 | |
| 9 | 2033 | | | 745 | 3.00 | 0.72 | |
| 10 | 2034 | | | 745 | 3.00 | 0.72 | |
| 11 | 2035 | | | 745 | 3.00 | 0.72 | |
| 12 | 2036 | | | 745 | 3.00 | 0.72 | |
| 13 | 2037 | | | 745 | 3.00 | 0.72 | |
| 14 | 2038 | | | 745 | 3.00 | 0.72 | |
| 15 | 2039 | | | 745 | 3.00 | 0.72 | |
| 16 | 2040 | | | 745 | 3.00 | 0.72 | |
| 17 | 2041 | | | 335 | 1.70 | 0.73 | |
| 18 | 2042 | | | 335 | 1.00 | 0.73 | |
| 19 | 2043 | | | 335 | 1.00 | 0.73 | |
| 20 | 2044 | | | 335 | 1.00 | 0.73 | |
| 21 | 2045 | | | 335 | 1.00 | 0.73 | |
| 22 | 2046 | | | 335 | 1.00 | 0.73 | |
| 23 | 2047 | | | 335 | 1.00 | 0.73 | |
| 24 | 2048 | | | 335 | 1.00 | 0.73 | |
| 25 | 2049 | | | 335 | 1.00 | 0.73 | |
| 26 | 2050 | | | 335 | 1.00 | 0.73 | |
| 27 | 2051 | | | 335 | 1.00 | 0.73 | |
| 28 | 2052 | | | 335 | 1.00 | 0.73 | |
| 29 | 2053 | | | 335 | 1.00 | 0.73 | |
| 30 | 2054 | | | 335 | 1.00 | 0.73 | |

| | |
|---|---|
| 0.11 | Maximum Annual PM2.5 Concentration (ug/m3) |
| 0.3 | Significance Threshold (ug/m3) |
| No | Significant? |
| | |
| 0.00 | Chronic Hazard Impact |
| 1 | Significance Threshold |
| No | Significant? |
| | |
| 5.19 | Cancer Risk (Child) |
| 10 | Significance Threshold |
| No | Significant? |
| | |
| 0.37 | Cancer Risk (Adult) |
| 10 | Significance Threshold |
| No | Significant? |

**Health Risk Assessment Assumptions**

| | | |
|---|---|---|
| 5 | Chronic Reference Exposure Level (ug/m3) for DPM | |
| 1.1 | Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM | |
| 350 | days per year | |
| 25,550 | days per lifetime | |
| | | |
| 1,090 | 95th Percentile Daily Breathing Rates (L/kg-day) | 0<2 Years |
| 861 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<9 Years |
| 745 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<16 Years |
| 335 | 95th Percentile Daily Breathing Rates (L/kg-day) | 16<30 Years |
| 290 | 95th Percentile Daily Breathing Rates (L/kg-day) | 30<70 Years |
| | | |
| 0.85 | fraction of t | 0<2 Years |
| 0.72 | fraction of t | 2<16 Years |
| 0.73 | fraction of t | 16<70 Years |

| | |
|---|---|
| Project: | Penitencia Water Treatment Plant |
| Date: | 5/7/2024 |
| Condition: | Mitigated Construction |
| Receptor: | Existing Residence |
| Year: | 2026 |

| Exposure Year | Calender Year | Annual DPM Concentration (ug/m3) | Annual PM2.5 Concentration (ug/m3) | Daily Breathing Rates (L/kg-day) | Exposure Factor | fraction of time at home | Cancer Risk |
|---|---|---|---|---|---|---|---|
| 1 | 2026 | 0.01 | 0.10 | 1,090 | 10.0 | 0.85 | 1.89 |
| 2 | 2027 | 0.02 | 0.11 | 1,090 | 10.0 | 0.85 | 2.35 |
| 3 | 2028 | 0.01 | 0.10 | 745 | 4.75 | 0.72 | 0.42 |
| 4 | 2029 | | | 745 | 3.00 | 0.72 | |
| 5 | 2030 | | | 745 | 3.00 | 0.72 | |
| 6 | 2031 | | | 745 | 3.00 | 0.72 | |
| 7 | 2032 | | | 745 | 3.00 | 0.72 | |
| 8 | 2033 | | | 745 | 3.00 | 0.72 | |
| 9 | 2034 | | | 745 | 3.00 | 0.72 | |
| 10 | 2035 | | | 745 | 3.00 | 0.72 | |
| 11 | 2036 | | | 745 | 3.00 | 0.72 | |
| 12 | 2037 | | | 745 | 3.00 | 0.72 | |
| 13 | 2038 | | | 745 | 3.00 | 0.72 | |
| 14 | 2039 | | | 745 | 3.00 | 0.72 | |
| 15 | 2040 | | | 745 | 3.00 | 0.72 | |
| 16 | 2041 | | | 745 | 3.00 | 0.72 | |
| 17 | 2042 | | | 335 | 1.70 | 0.73 | |
| 18 | 2043 | | | 335 | 1.00 | 0.73 | |
| 19 | 2044 | | | 335 | 1.00 | 0.73 | |
| 20 | 2045 | | | 335 | 1.00 | 0.73 | |
| 21 | 2046 | | | 335 | 1.00 | 0.73 | |
| 22 | 2047 | | | 335 | 1.00 | 0.73 | |
| 23 | 2048 | | | 335 | 1.00 | 0.73 | |
| 24 | 2049 | | | 335 | 1.00 | 0.73 | |
| 25 | 2050 | | | 335 | 1.00 | 0.73 | |
| 26 | 2051 | | | 335 | 1.00 | 0.73 | |
| 27 | 2052 | | | 335 | 1.00 | 0.73 | |
| 28 | 2053 | | | 335 | 1.00 | 0.73 | |
| 29 | 2054 | | | 335 | 1.00 | 0.73 | |
| 30 | 2055 | | | 335 | 1.00 | 0.73 | |

| | |
|---|---|
| 0.11 | Maximum Annual PM2.5 Concentration (ug/m3) |
| 0.3 | Significance Threshold (ug/m3) |
| No | Significant? |
| | |
| 0.00 | Chronic Hazard Impact |
| 1 | Significance Threshold |
| No | Significant? |
| | |
| 4.65 | Cancer Risk (Child) |
| 10 | Significance Threshold |
| No | Significant? |
| | |
| 0.26 | Cancer Risk (Adult) |
| 10 | Significance Threshold |
| No | Significant? |

**Health Risk Assessment Assumptions**

| | | |
|---|---|---|
| 5 | Chronic Reference Exposure Level (ug/m3) for DPM | |
| 1.1 | Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM | |
| 350 | days per year | |
| 25,550 | days per lifetime | |
| | | |
| 1,090 | 95th Percentile Daily Breathing Rates (L/kg-day) | 0<2 Years |
| 861 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<9 Years |
| 745 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<16 Years |
| 335 | 95th Percentile Daily Breathing Rates (L/kg-day) | 16<30 Years |
| 290 | 95th Percentile Daily Breathing Rates (L/kg-day) | 30<70 Years |
| | | |
| 0.85 | fraction of t | 0<2 Years |
| 0.72 | fraction of t | 2<16 Years |
| 0.73 | fraction of t | 16<70 Years |

| | |
|---|---|
| Project: | Penitencia Water Treatment Plant |
| Date: | 5/7/2024 |
| Condition: | Mitigated Construction |
| Receptor: | Existing Residence |
| Year: | 2027 |

| Exposure Year | Calender Year | Annual DPM Concentration (ug/m3) | Annual PM2.5 Concentration (ug/m3) | Daily Breathing Rates (L/kg-day) | Exposure Factor | fraction of time at home | Cancer Risk |
|---|---|---|---|---|---|---|---|
| 1 | 2027 | 0.02 | 0.11 | 1,090 | 10.0 | 0.85 | 2.35 |
| 2 | 2028 | 0.01 | 0.10 | 1,090 | 10.0 | 0.85 | 1.54 |
| 3 | 2029 | | | 745 | 4.75 | 0.72 | |
| 4 | 2030 | | | 745 | 3.00 | 0.72 | |
| 5 | 2031 | | | 745 | 3.00 | 0.72 | |
| 6 | 2032 | | | 745 | 3.00 | 0.72 | |
| 7 | 2033 | | | 745 | 3.00 | 0.72 | |
| 8 | 2034 | | | 745 | 3.00 | 0.72 | |
| 9 | 2035 | | | 745 | 3.00 | 0.72 | |
| 10 | 2036 | | | 745 | 3.00 | 0.72 | |
| 11 | 2037 | | | 745 | 3.00 | 0.72 | |
| 12 | 2038 | | | 745 | 3.00 | 0.72 | |
| 13 | 2039 | | | 745 | 3.00 | 0.72 | |
| 14 | 2040 | | | 745 | 3.00 | 0.72 | |
| 15 | 2041 | | | 745 | 3.00 | 0.72 | |
| 16 | 2042 | | | 745 | 3.00 | 0.72 | |
| 17 | 2043 | | | 335 | 1.70 | 0.73 | |
| 18 | 2044 | | | 335 | 1.00 | 0.73 | |
| 19 | 2045 | | | 335 | 1.00 | 0.73 | |
| 20 | 2046 | | | 335 | 1.00 | 0.73 | |
| 21 | 2047 | | | 335 | 1.00 | 0.73 | |
| 22 | 2048 | | | 335 | 1.00 | 0.73 | |
| 23 | 2049 | | | 335 | 1.00 | 0.73 | |
| 24 | 2050 | | | 335 | 1.00 | 0.73 | |
| 25 | 2051 | | | 335 | 1.00 | 0.73 | |
| 26 | 2052 | | | 335 | 1.00 | 0.73 | |
| 27 | 2053 | | | 335 | 1.00 | 0.73 | |
| 28 | 2054 | | | 335 | 1.00 | 0.73 | |
| 29 | 2055 | | | 335 | 1.00 | 0.73 | |
| 30 | 2056 | | | 335 | 1.00 | 0.73 | |

| | |
|---|---|
| 0.11 | Maximum Annual PM2.5 Concentration (ug/m3) |
| 0.3 | Significance Threshold (ug/m3) |
| No | Significant? |
| | |
| 0.00 | Chronic Hazard Impact |
| 1 | Significance Threshold |
| No | Significant? |
| | |
| 3.88 | Cancer Risk (Child) |
| 10 | Significance Threshold |
| No | Significant? |
| | |
| 0.17 | Cancer Risk (Adult) |
| 10 | Significance Threshold |
| No | Significant? |

**Health Risk Assessment Assumptions**

| | | |
|---|---|---|
| 5 | Chronic Reference Exposure Level (ug/m3) for DPM | |
| 1.1 | Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM | |
| 350 | days per year | |
| 25,550 | days per lifetime | |
| | | |
| 1,090 | 95th Percentile Daily Breathing Rates (L/kg-day) | 0<2 Years |
| 861 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<9 Years |
| 745 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<16 Years |
| 335 | 95th Percentile Daily Breathing Rates (L/kg-day) | 16<30 Years |
| 290 | 95th Percentile Daily Breathing Rates (L/kg-day) | 30<70 Years |
| | | |
| 0.85 | fraction of t | 0<2 Years |
| 0.72 | fraction of t | 2<16 Years |
| 0.73 | fraction of t | 16<70 Years |

| | |
|---|---|
| Project: | Penitencia Water Treatment Plant |
| Date: | 5/7/2024 |
| Condition: | Mitigated Construction |
| Receptor: | Existing Residence |
| Year: | 2028 |

| Exposure Year | Calender Year | Annual DPM Concentration (ug/m3) | Annual PM2.5 Concentration (ug/m3) | Daily Breathing Rates (L/kg-day) | Exposure Factor | fraction of time at home | Cancer Risk |
|---|---|---|---|---|---|---|---|
| 1 | 2028 | 0.01 | 0.10 | 1,090 | 10.0 | 0.85 | 1.54 |
| 2 | 2029 | | | 1,090 | 10.0 | 0.85 | |
| 3 | 2030 | | | 745 | 4.75 | 0.72 | |
| 4 | 2031 | | | 745 | 3.00 | 0.72 | |
| 5 | 2032 | | | 745 | 3.00 | 0.72 | |
| 6 | 2033 | | | 745 | 3.00 | 0.72 | |
| 7 | 2034 | | | 745 | 3.00 | 0.72 | |
| 8 | 2035 | | | 745 | 3.00 | 0.72 | |
| 9 | 2036 | | | 745 | 3.00 | 0.72 | |
| 10 | 2037 | | | 745 | 3.00 | 0.72 | |
| 11 | 2038 | | | 745 | 3.00 | 0.72 | |
| 12 | 2039 | | | 745 | 3.00 | 0.72 | |
| 13 | 2040 | | | 745 | 3.00 | 0.72 | |
| 14 | 2041 | | | 745 | 3.00 | 0.72 | |
| 15 | 2042 | | | 745 | 3.00 | 0.72 | |
| 16 | 2043 | | | 745 | 3.00 | 0.72 | |
| 17 | 2044 | | | 335 | 1.70 | 0.73 | |
| 18 | 2045 | | | 335 | 1.00 | 0.73 | |
| 19 | 2046 | | | 335 | 1.00 | 0.73 | |
| 20 | 2047 | | | 335 | 1.00 | 0.73 | |
| 21 | 2048 | | | 335 | 1.00 | 0.73 | |
| 22 | 2049 | | | 335 | 1.00 | 0.73 | |
| 23 | 2050 | | | 335 | 1.00 | 0.73 | |
| 24 | 2051 | | | 335 | 1.00 | 0.73 | |
| 25 | 2052 | | | 335 | 1.00 | 0.73 | |
| 26 | 2053 | | | 335 | 1.00 | 0.73 | |
| 27 | 2054 | | | 335 | 1.00 | 0.73 | |
| 28 | 2055 | | | 335 | 1.00 | 0.73 | |
| 29 | 2056 | | | 335 | 1.00 | 0.73 | |
| 30 | 2057 | | | 335 | 1.00 | 0.73 | |

| | |
|---|---|
| 0.10 | Maximum Annual PM2.5 Concentration (ug/m3) |
| 0.3 | Significance Threshold (ug/m3) |
| No | Significant? |
| | |
| 0.00 | Chronic Hazard Impact |
| 1 | Significance Threshold |
| No | Significant? |
| | |
| 1.54 | Cancer Risk (Child) |
| 10 | Significance Threshold |
| No | Significant? |
| | |
| 0.07 | Cancer Risk (Adult) |
| 10 | Significance Threshold |
| No | Significant? |

**Health Risk Assessment Assumptions**

| | | |
|---|---|---|
| 5 | Chronic Reference Exposure Level (ug/m3) for DPM | |
| 1.1 | Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM | |
| 350 | days per year | |
| 25,550 | days per lifetime | |
| 1,090 | 95th Percentile Daily Breathing Rates (L/kg-day) | 0<2 Years |
| 861 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<9 Years |
| 745 | 95th Percentile Daily Breathing Rates (L/kg-day) | 2<16 Years |
| 335 | 95th Percentile Daily Breathing Rates (L/kg-day) | 16<30 Years |
| 290 | 95th Percentile Daily Breathing Rates (L/kg-day) | 30<70 Years |
| 0.85 | fraction of t | 0<2 Years |
| 0.72 | fraction of t | 2<16 Years |
| 0.73 | fraction of t | 16<70 Years |

| | |
|---|---|
| Project: | Penitencia Water Treatment Plant |
| Date: | 3/21/2024 |
| Condition: | Operation |
| Receptor: | Existing Residence |

| Exposure Year | Calender Year | Annual DPM Concentration (ug/m3) | Annual PM2.5 Concentration (ug/m3) | Daily Breathing Rates (L/kg-day) | Exposure Factor | fraction of time at home | Cancer Risk |
|---|---|---|---|---|---|---|---|
| 1 | 2025 | 1.13E-03 | 1.13E-03 | 1,090 | 10.0 | 0.85 | 0.16 |
| 2 | 2026 | 1.13E-03 | 1.13E-03 | 1,090 | 10.0 | 0.85 | 0.16 |
| 3 | 2027 | 1.13E-03 | 1.13E-03 | 745 | 4.75 | 0.72 | 0.04 |
| 4 | 2028 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | 0.03 |
| 5 | 2029 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 6 | 2030 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 7 | 2031 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 8 | 2032 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 9 | 2033 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 10 | 2034 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 11 | 2035 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 12 | 2036 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 13 | 2037 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 14 | 2038 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 15 | 2039 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 16 | 2040 | 1.13E-03 | 1.13E-03 | 745 | 3.00 | 0.72 | |
| 17 | 2041 | 1.13E-03 | 1.13E-03 | 335 | 1.70 | 0.73 | |
| 18 | 2042 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 19 | 2043 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 20 | 2044 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 21 | 2045 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 22 | 2046 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 23 | 2047 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 24 | 2048 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 25 | 2049 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 26 | 2050 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 27 | 2051 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 28 | 2052 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 29 | 2053 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |
| 30 | 2054 | 1.13E-03 | 1.13E-03 | 335 | 1.00 | 0.73 | |

| | |
|---|---|
| 0.00 | Maximum Annual PM2.5 Concentration (ug/m3) |
| 0.3 | Significance Threshold (ug/m3) |
| No | Significant? |
| 0.00 | Chronic Hazard Impact |
| 1 | Significance Threshold |
| No | Significant? |
| 0.39 | Cancer Risk (Child) |
| 10 | Significance Threshold |
| No | Significant? |
| 0.21 | Cancer Risk (Adult) |
| 10 | Significance Threshold |
| No | Significant? |

# Control Pathway



## Dispersion Options

**Titles**

C:\Users\W7MRATTELT\Documents\Projects\EBMUD Sobrante WTP EIR\AERMOD

**Dispersion Options**

☑ Regulatory Default ☐ Non-Default Options

**Dispersion Coefficient**

Rural

**Output Type**

☑ Concentration
☐ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

**Plume Depletion**

☐ Dry Removal
☐ Wet Removal

**Output Warnings**

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

## Pollutant / Averaging Time / Terrain Options

**Pollutant Type**

OTHER - DPM

**Averaging Time Options**

Hours ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☐ 24

☐ Month ☑ Period ☐ Annual

**Exponential Decay**

Option not available

**Terrain Height Options**

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

**Flagpole Receptors**

☑ Yes ☐ No

Default Height = 1.80 m

# Control Pathway



## Optional Files

| Re-Start File | Init File | Multi-Year Analyses | Event Input File | Error Listing File |
|---|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ | ■ |

### Detailed Error Listing File

Filename: AERMOD.err

# Source Pathway - Source Inputs



## Point Sources

| Source Type | Source ID | X Coordinate [m] | Y Coordinate [m] | Base Elevation (Optional) | Release Height [m] | Emission Rate [g/s] | Gas Exit Temp. [K] | Gas Exit Velocity [m/s] | Stack Inside Diameter [m] |
|---|---|---|---|---|---|---|---|---|---|
| POINT | STCK1 | 603140.25 | 4139698.90 | 122.31 | 0.91 | 1.00000 | 727.59 | 52.58 | 0.20 |

# Source Pathway - Source Inputs



## Polygon Area Sources

**Source Type:** AREA POLY

**Source:** PHASE2

| Base Elevation (Optional) | Release Height [m] | Emission Rate [g/ (s-m^2)] | Initial Vertical Dim. [m] | Number of Vertices (or sides) | X Coordinate for Vertices [m] | Y Coordinate for Vertices [m] |
|---|---|---|---|---|---|---|
| 120.38 | 3.05 | 0.00012 | 1.26 | 11 | 603006.25 | 4139783.59 |
| | | 0.00012 | | | 603058.64 | 4139755.90 |
| | | 0.00012 | | | 603096.29 | 4139736.29 |
| | | 0.00012 | | | 603080.51 | 4139721.19 |
| | | 0.00012 | | | 603130.43 | 4139703.72 |
| | | 0.00012 | | | 603180.35 | 4139661.28 |
| | | 0.00012 | | | 603164.13 | 4139632.57 |
| | | 0.00012 | | | 603104.84 | 4139681.25 |
| | | 0.00012 | | | 603044.31 | 4139704.34 |
| | | 0.00012 | | | 602997.51 | 4139744.90 |
| | | 0.00012 | | | 602989.40 | 4139764.87 |

**Source Type:** AREA POLY

**Source:** PHASE1

| Base Elevation (Optional) | Release Height [m] | Emission Rate [g/ (s-m^2)] | Initial Vertical Dim. [m] | Number of Vertices (or sides) | X Coordinate for Vertices [m] | Y Coordinate for Vertices [m] |
|---|---|---|---|---|---|---|
| 120.38 | 3.05 | 0.00012 | 1.26 | 11 | 603006.25 | 4139783.59 |
| | | 0.00012 | | | 603058.43 | 4139755.74 |
| | | 0.00012 | | | 603095.60 | 4139736.57 |
| | | 0.00012 | | | 603080.51 | 4139721.19 |
| | | 0.00012 | | | 603130.43 | 4139703.72 |
| | | 0.00012 | | | 603180.35 | 4139661.28 |
| | | 0.00012 | | | 603164.13 | 4139632.57 |
| | | 0.00012 | | | 603104.84 | 4139681.25 |
| | | 0.00012 | | | 603044.31 | 4139704.34 |
| | | 0.00012 | | | 602997.51 | 4139744.90 |
| | | 0.00012 | | | 602989.40 | 4139764.87 |

# Source Pathway - Source Inputs



**Source Type:** AREA POLY
**Source:** PHAS1FUG

| Base Elevation (Optional) | Release Height [m] | Emission Rate [g/ (s-m^2)] | Initial Vertical Dim. [m] | Number of Vertices (or sides) | X Coordinate for Vertices [m] | Y Coordinate for Vertices [m] |
|---|---|---|---|---|---|---|
| 120.38 | 0.00 | 0.00012 | 0.30 | 11 | 603006.25 | 4139783.59 |
| | | 0.00012 | | | 603058.43 | 4139755.74 |
| | | 0.00012 | | | 603095.60 | 4139736.57 |
| | | 0.00012 | | | 603080.51 | 4139721.19 |
| | | 0.00012 | | | 603130.43 | 4139703.72 |
| | | 0.00012 | | | 603180.35 | 4139661.28 |
| | | 0.00012 | | | 603164.13 | 4139632.57 |
| | | 0.00012 | | | 603104.84 | 4139681.25 |
| | | 0.00012 | | | 603044.31 | 4139704.34 |
| | | 0.00012 | | | 602997.51 | 4139744.90 |
| | | 0.00012 | | | 602989.40 | 4139764.87 |

**Source Type:** AREA POLY
**Source:** PHAS2FUG

| Base Elevation (Optional) | Release Height [m] | Emission Rate [g/ (s-m^2)] | Initial Vertical Dim. [m] | Number of Vertices (or sides) | X Coordinate for Vertices [m] | Y Coordinate for Vertices [m] |
|---|---|---|---|---|---|---|
| 120.38 | 0.00 | 0.00012 | 0.30 | 11 | 603006.25 | 4139783.59 |
| | | 0.00012 | | | 603058.64 | 4139755.90 |
| | | 0.00012 | | | 603096.29 | 4139736.29 |
| | | 0.00012 | | | 603080.51 | 4139721.19 |
| | | 0.00012 | | | 603130.43 | 4139703.72 |
| | | 0.00012 | | | 603180.35 | 4139661.28 |
| | | 0.00012 | | | 603164.13 | 4139632.57 |
| | | 0.00012 | | | 603104.84 | 4139681.25 |
| | | 0.00012 | | | 603044.31 | 4139704.34 |
| | | 0.00012 | | | 602997.51 | 4139744.90 |
| | | 0.00012 | | | 602989.40 | 4139764.87 |

# Source Pathway



## Building Downwash Information

Option not in use

## Emission Rate Units for Output

**For Concentration**

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

## Source Groups

| Source Group ID: | List of Sources in Group (Source Range or Single Sources) |
|---|---|
| STCK1 | STCK1 |
| PHASE2 | PHASE2 |
| PHASE1 | PHASE1 |
| PHAS2FUG | PHAS2FUG |
| PHAS1FUG | PHAS1FUG |

## Variable Emissions

## Hour-of-Day / Day-of-Week Emission Rate Variation

**Scenario: Scenario 1**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Source ID:** | **PHASE2** | | | | | | | |
| **Weekdays** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | 13 - 18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Saturday** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | 13 - 18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Sunday** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 13 - 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Source ID:** | **PHASE1** | | | | | | | |
| **Weekdays** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | 13 - 18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Saturday** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | 13 - 18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Sunday** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 13 - 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Source ID:** | **PHAS1FUG** | | | | | | | |
| **Weekdays** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | 13 - 18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Saturday** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | 13 - 18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Sunday** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 13 - 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Source ID:** | **PHAS2FUG** | | | | | | | |
| **Weekdays** | | | | | | | | |
| Hour of Day | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 7 - 12 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| | 13 - 18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |

# Source Pathway



**Scenario: Scenario 1**

**Source ID: PHAS2FUG**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Saturday** | | | | | | | |
| Hour | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| of | 7 - 12 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Day | 13 - 18 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Sunday** | | | | | | | |
| Hour | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| of | 7 - 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Day | 13 - 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**Scenario: Scenario 2**

**Source ID: STCK1**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Weekdays** | | | | | | | |
| Hour | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| of | 7 - 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Day | 13 - 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Saturday** | | | | | | | |
| Hour | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| of | 7 - 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Day | 13 - 18 | 1.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Sunday** | | | | | | | |
| Hour | 1 - 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| of | 7 - 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Day | 13 - 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 19 - 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# Receptor Pathway



## Receptor Networks

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

## Discrete Receptors

### Discrete Cartesian Receptors

| Record Number | X-Coordinate [m] | Y-Coordinate [m] | Group Name (Optional) | Terrain Elevations | Flagpole Heights [m] (Optional) |
|---|---|---|---|---|---|
| 1 | 602969.73 | 4139917.35 | | 124.06 | |
| 2 | 602958.55 | 4139968.15 | | 125.22 | |
| 3 | 602940.26 | 4139955.96 | | 123.32 | |
| 4 | 602922.99 | 4139949.86 | | 121.82 | |
| 5 | 602952.46 | 4139908.20 | | 122.32 | |
| 6 | 602934.17 | 4139900.08 | | 120.91 | |
| 7 | 602917.91 | 4139889.92 | | 119.64 | |
| 8 | 602903.69 | 4139876.71 | | 118.51 | |
| 9 | 602889.46 | 4139861.47 | | 117.48 | |
| 10 | 602879.30 | 4139848.26 | | 116.87 | |
| 11 | 602868.13 | 4139833.02 | | 116.12 | |
| 12 | 602870.16 | 4139792.38 | | 115.16 | |
| 13 | 602862.03 | 4139776.12 | | 114.38 | |
| 14 | 602880.32 | 4139725.32 | | 113.51 | |
| 15 | 602886.41 | 4139706.01 | | 113.09 | |
| 16 | 602893.53 | 4139689.76 | | 112.76 | |
| 17 | 602896.57 | 4139670.45 | | 112.23 | |
| 18 | 602904.70 | 4139651.15 | | 111.92 | |
| 19 | 602913.85 | 4139618.64 | | 111.22 | |
| 20 | 602926.04 | 4139604.41 | | 111.24 | |
| 21 | 602990.05 | 4139528.21 | | 111.31 | |
| 22 | 603042.88 | 4139485.54 | | 112.04 | |
| 23 | 603031.71 | 4139531.26 | | 113.09 | |
| 24 | 603071.33 | 4139552.59 | | 115.01 | |
| 25 | 603122.13 | 4139586.12 | | 117.47 | |
| 26 | 603137.37 | 4139535.32 | | 116.21 | |
| 27 | 603110.96 | 4139495.70 | | 114.21 | |
| 28 | 603157.69 | 4139505.86 | | 115.79 | |
| 29 | 603166.84 | 4139479.44 | | 115.17 | |
| 30 | 603213.57 | 4139497.73 | | 117.01 | |

| | | | |
|---|---|---|---|
| 31 | 603195.29 | 4139542.43 | 117.99 |
| 32 | 603170.90 | 4139589.17 | 118.87 |
| 33 | 603202.40 | 4139606.44 | 120.28 |
| 34 | 603228.81 | 4139615.59 | 121.62 |
| 35 | 603254.22 | 4139630.83 | 123.79 |
| 36 | 603287.74 | 4139638.96 | 126.01 |
| 37 | 603311.11 | 4139647.08 | 127.89 |
| 38 | 603345.66 | 4139657.24 | 130.50 |
| 39 | 603378.17 | 4139635.91 | 129.46 |
| 40 | 603404.59 | 4139649.12 | 131.94 |
| 41 | 603458.44 | 4139649.12 | 132.14 |
| 42 | 603406.62 | 4139591.20 | 126.76 |
| 43 | 603374.11 | 4139581.04 | 125.05 |
| 44 | 603349.72 | 4139577.99 | 124.04 |
| 45 | 603322.29 | 4139588.16 | 123.49 |
| 46 | 603293.84 | 4139583.07 | 122.24 |
| 47 | 603271.49 | 4139572.91 | 121.08 |
| 48 | 603245.07 | 4139560.72 | 119.92 |
| 49 | 603218.65 | 4139554.63 | 119.01 |
| 50 | 603235.93 | 4139510.94 | 118.04 |
| 51 | 603263.36 | 4139512.97 | 118.84 |
| 52 | 603292.82 | 4139521.10 | 119.92 |
| 53 | 603339.56 | 4139538.37 | 121.95 |
| 54 | 603363.95 | 4139531.26 | 122.33 |
| 55 | 602928.36 | 4140047.54 | 132.31 |
| 56 | 602914.13 | 4140038.39 | 129.34 |
| 57 | 602897.88 | 4140030.27 | 126.42 |
| 58 | 602881.62 | 4140018.07 | 123.74 |
| 59 | 602862.32 | 4140011.98 | 122.04 |
| 60 | 602847.07 | 4139999.78 | 120.39 |
| 61 | 602816.59 | 4139981.49 | 118.27 |
| 62 | 602799.32 | 4139969.30 | 117.43 |
| 63 | 602786.11 | 4139953.05 | 116.64 |
| 64 | 602779.00 | 4139933.74 | 115.90 |
| 65 | 602769.85 | 4139919.52 | 115.19 |
| 66 | 602756.65 | 4139904.27 | 114.26 |
| 67 | 602739.37 | 4139896.15 | 113.39 |
| 68 | 602722.10 | 4139885.99 | 112.59 |

| | | | |
|---|---|---|---|
| 69 | 602706.86 | 4139871.76 | 111.78 |
| 70 | 602697.71 | 4139851.44 | 110.94 |
| 71 | 602698.73 | 4139835.18 | 110.50 |
| 72 | 602695.68 | 4139813.85 | 109.77 |
| 73 | 602669.27 | 4139743.74 | 106.84 |
| 74 | 602690.60 | 4139747.80 | 107.80 |
| 75 | 602710.92 | 4139743.74 | 108.39 |
| 76 | 602780.02 | 4139741.71 | 110.66 |
| 77 | 602826.75 | 4139750.85 | 112.43 |
| 78 | 602841.99 | 4139765.08 | 113.33 |
| 79 | 602855.20 | 4139820.96 | 115.35 |
| 80 | 602843.01 | 4139809.78 | 114.59 |
| 81 | 602827.77 | 4139793.52 | 113.51 |
| 82 | 602786.11 | 4139776.25 | 111.79 |
| 83 | 602760.71 | 4139773.20 | 110.98 |
| 84 | 602742.42 | 4139778.28 | 110.58 |
| 85 | 602720.07 | 4139781.33 | 109.80 |
| 86 | 602705.84 | 4139791.49 | 109.52 |
| 87 | 602952.74 | 4140007.91 | 129.83 |
| 88 | 602931.41 | 4139996.74 | 126.17 |
| 89 | 602917.18 | 4139987.59 | 123.72 |
| 90 | 602900.93 | 4139977.43 | 121.19 |
| 91 | 602883.65 | 4139968.29 | 119.68 |
| 92 | 602868.41 | 4139960.16 | 119.10 |
| 93 | 602853.17 | 4139947.96 | 118.42 |
| 94 | 602835.90 | 4139935.77 | 117.69 |
| 95 | 602826.75 | 4139921.55 | 117.13 |
| 96 | 602817.61 | 4139905.29 | 116.52 |
| 97 | 602806.43 | 4139889.03 | 115.72 |
| 98 | 602796.27 | 4139874.81 | 114.94 |
| 99 | 602780.02 | 4139862.62 | 113.97 |
| 100 | 602762.74 | 4139857.54 | 113.19 |
| 101 | 602743.44 | 4139828.07 | 111.83 |
| 102 | 602756.65 | 4139825.02 | 112.19 |
| 103 | 602777.98 | 4139827.05 | 112.93 |
| 104 | 602797.29 | 4139836.20 | 113.83 |
| 105 | 602812.53 | 4139849.41 | 114.77 |
| 106 | 602829.80 | 4139865.66 | 115.85 |

| | | | |
|---|---|---|---|
| 107 | 602839.96 | 4139879.89 | 116.56 |
| 108 | 602850.12 | 4139893.10 | 117.13 |
| 109 | 602860.28 | 4139910.37 | 117.78 |
| 110 | 602876.54 | 4139919.52 | 118.42 |
| 111 | 602895.85 | 4139927.64 | 119.29 |
| 112 | 602681.46 | 4139659.41 | 105.14 |
| 113 | 602712.96 | 4139676.68 | 106.61 |
| 114 | 602733.28 | 4139677.69 | 107.23 |
| 115 | 602750.55 | 4139677.69 | 107.77 |
| 116 | 602772.90 | 4139682.77 | 108.74 |
| 117 | 602792.21 | 4139686.84 | 109.60 |
| 118 | 602830.82 | 4139700.05 | 111.38 |
| 119 | 602841.99 | 4139682.77 | 111.15 |
| 120 | 602856.22 | 4139665.50 | 110.97 |
| 121 | 602857.24 | 4139643.15 | 110.26 |
| 122 | 602861.30 | 4139624.86 | 109.77 |
| 123 | 602869.43 | 4139606.57 | 109.39 |
| 124 | 602883.65 | 4139589.30 | 109.20 |
| 125 | 602798.30 | 4139652.29 | 108.82 |
| 126 | 602810.50 | 4139635.02 | 108.70 |
| 127 | 602815.58 | 4139616.73 | 108.27 |
| 128 | 602818.63 | 4139602.51 | 107.90 |
| 129 | 602823.71 | 4139582.19 | 107.37 |
| 130 | 602827.77 | 4139566.94 | 106.98 |
| 131 | 602799.32 | 4139554.75 | 105.82 |
| 132 | 602776.97 | 4139550.69 | 105.09 |
| 133 | 602757.66 | 4139546.62 | 104.44 |
| 134 | 602772.90 | 4139606.57 | 106.78 |
| 135 | 602738.36 | 4139611.65 | 105.83 |
| 136 | 602774.93 | 4139496.84 | 103.41 |
| 137 | 602790.18 | 4139508.01 | 104.06 |
| 138 | 602806.43 | 4139514.11 | 104.68 |
| 139 | 602826.75 | 4139525.29 | 105.59 |
| 140 | 602857.24 | 4139533.41 | 106.67 |
| 141 | 602894.83 | 4139544.59 | 108.04 |
| 142 | 602942.58 | 4139517.16 | 109.04 |
| 143 | 602890.77 | 4139470.42 | 105.94 |
| 144 | 602864.35 | 4139475.50 | 105.34 |

| | | | |
|---|---|---|---|
| 145 | 602899.91 | 4139449.08 | 105.75 |
| 146 | 602902.96 | 4139433.84 | 105.53 |
| 147 | 602911.09 | 4139413.52 | 105.35 |
| 148 | 602957.82 | 4139456.19 | 108.25 |
| 149 | 602972.05 | 4139430.79 | 108.25 |
| 150 | 602980.18 | 4139409.46 | 107.90 |
| 151 | 602994.40 | 4139384.05 | 107.55 |
| 152 | 602996.43 | 4139356.62 | 106.81 |
| 153 | 603042.16 | 4139395.23 | 109.34 |
| 154 | 603027.93 | 4139425.71 | 109.68 |
| 155 | 603179.32 | 4139451.11 | 114.57 |
| 156 | 603180.34 | 4139451.11 | 114.60 |
| 157 | 603194.57 | 4139418.60 | 113.91 |
| 158 | 603199.65 | 4139397.26 | 113.35 |
| 159 | 603222.00 | 4139370.85 | 113.08 |
| 160 | 603240.29 | 4139350.53 | 112.90 |
| 161 | 603173.23 | 4139340.36 | 110.78 |
| 162 | 603259.59 | 4139395.23 | 114.88 |
| 163 | 603243.34 | 4139450.10 | 116.25 |
| 164 | 603271.79 | 4139453.15 | 117.11 |
| 165 | 603298.20 | 4139467.37 | 118.28 |
| 166 | 603323.60 | 4139478.55 | 119.32 |
| 167 | 603357.13 | 4139484.64 | 120.34 |
| 168 | 603387.62 | 4139529.35 | 122.91 |
| 169 | 603424.19 | 4139567.96 | 125.71 |
| 170 | 603413.02 | 4139515.13 | 122.88 |
| 171 | 603454.68 | 4139617.75 | 128.76 |
| 172 | 603638.58 | 4139661.44 | 132.85 |
| 173 | 603649.76 | 4139637.05 | 129.42 |
| 174 | 603287.03 | 4139403.36 | 115.88 |
| 175 | 603311.41 | 4139422.66 | 117.17 |
| 176 | 603342.91 | 4139429.78 | 118.21 |
| 177 | 603372.37 | 4139453.15 | 119.49 |
| 178 | 603426.23 | 4139483.63 | 121.52 |
| 179 | 603433.34 | 4139451.11 | 120.11 |
| 180 | 603419.11 | 4139427.75 | 119.10 |
| 181 | 603399.81 | 4139406.41 | 118.19 |
| 182 | 603468.90 | 4139419.62 | 118.79 |

| | | | |
|---|---|---|---|
| 183 | 603476.01 | 4139448.07 | 119.95 |
| 184 | 603473.98 | 4139477.53 | 121.23 |
| 185 | 603473.98 | 4139501.92 | 122.28 |
| 186 | 603455.69 | 4139528.33 | 123.54 |
| 187 | 603440.45 | 4139547.64 | 124.60 |
| 188 | 603467.88 | 4139592.35 | 127.00 |
| 189 | 603485.16 | 4139575.07 | 126.05 |
| 190 | 603509.54 | 4139559.83 | 124.90 |
| 191 | 603519.70 | 4139531.38 | 123.22 |
| 192 | 603527.83 | 4139483.63 | 121.12 |
| 193 | 603549.17 | 4139510.05 | 121.84 |
| 194 | 603562.38 | 4139542.56 | 123.21 |
| 195 | 603599.97 | 4139547.64 | 122.95 |

## Plant Boundary Receptors

# Meteorology Pathway



## Met Input Data

### Surface Met Data

Filename: ..\Met Data\AERMOD.SFC
Format Type: Default AERMET format

### Profile Met Data

Filename: ..\Met Data\AERMOD.PFL
Format Type: Default AERMET format

### Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

### Wind Direction

Rotation Adjustment [deg]:

### Potential Temperature Profile

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

### Meteorological Station Data

| Stations | Station No. | Year | X Coordinate [m] | Y Coordinate [m] | Station Name |
|---|---|---|---|---|---|
| Surface<br>Upper Air | | 2013<br>2013 | | | OAKLAND/WSO AP |

## Data Period

### Data Period to Process

Start Date: 1/1/2013 Start Hour: 1 End Date: 12/31/2017 End Hour: 24

## Wind Speed Categories

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

# Results Summary

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**DPM - Concentration - Source Group: PHAS1FUG**

| Averaging Period | Rank | Peak | Units | X (m) | Y (m) | ZELEV (m) | ZFLAG (m) | ZHILL (m) | Peak Date, Start Hour |
|---|---|---|---|---|---|---|---|---|---|
| PERIOD | | 28.03632 | ug/m^3 | 603228.81 | 4139615.59 | 121.62 | 1.80 | 671.00 | |

**DPM - Concentration - Source Group: PHAS2FUG**

| Averaging Period | Rank | Peak | Units | X (m) | Y (m) | ZELEV (m) | ZFLAG (m) | ZHILL (m) | Peak Date, Start Hour |
|---|---|---|---|---|---|---|---|---|---|
| PERIOD | | 27.99595 | ug/m^3 | 603228.81 | 4139615.59 | 121.62 | 1.80 | 671.00 | |

**DPM - Concentration - Source Group: PHASE1**

| Averaging Period | Rank | Peak | Units | X (m) | Y (m) | ZELEV (m) | ZFLAG (m) | ZHILL (m) | Peak Date, Start Hour |
|---|---|---|---|---|---|---|---|---|---|
| PERIOD | | 25.31193 | ug/m^3 | 603202.40 | 4139606.44 | 120.28 | 1.80 | 671.00 | |

**DPM - Concentration - Source Group: PHASE2**

| Averaging Period | Rank | Peak | Units | X (m) | Y (m) | ZELEV (m) | ZFLAG (m) | ZHILL (m) | Peak Date, Start Hour |
|---|---|---|---|---|---|---|---|---|---|
| PERIOD | | 25.27234 | ug/m^3 | 603202.40 | 4139606.44 | 120.28 | 1.80 | 671.00 | |

# Results Summary

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**DPM - Concentration - Source Group: STCK1**

| Averaging Period | Rank | Peak | Units | X (m) | Y (m) | ZELEV (m) | ZFLAG (m) | ZHILL (m) | Peak Date, Start Hour |
|---|---|---|---|---|---|---|---|---|---|
| PERIOD | | 0.20190 | ug/m^3 | 603254.22 | 4139630.83 | 123.79 | 1.80 | 671.00 | |

# APPENDIX C

## Biological Resources Report

H. T. HARVEY & ASSOCIATES

Ecological Consultants

# Penitencia Water Treatment Plant Residuals Management Project Biological Resources Report

**Project #3364-07**

Prepared for:

Susanne Heim
**Panorama Environmental, Inc.**
717 Market Street, Suite 400
San Francisco, CA 94103

Prepared by:

**H. T. Harvey & Associates**

May 30, 2024

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## List of Preparers

Steve Rottenborn, Ph.D., Principal/Senior Wildlife Ecologist
Kelly Hardwicke, Ph.D., Associate Plant/Senior Wetland Ecologist
Craig Fosdick, M.S., Senior Wildlife Ecologist
Katherine Marlin, M.S., Plant/Wetlands Ecologist

# Section 1. Introduction

This report describes the biological resources present in the vicinity of the proposed Penitencia Water Treatment Plant (WTP) Residuals Management Project, for use by Panorama Environmental, Inc. and the Santa Clara Valley Water District (Valley Water) in future planning of the project. This assessment is based on the project footprint provided to H. T. Harvey & Associates by Panorama Environmental, Inc. through May 2024.

## 1.1 Project Location

The project site is located on portions of the Penitencia WTP east-northeast of the intersection of Whitman Way and Vista Del Mar, within the City of San Jose, California (Figures 1 and 2). The approximately 19.2-acre WTP is bounded by undeveloped land and Suncrest Avenue to the north; Bay Laurel Lane, Whitman Way, and Vista Del Mar to the west; single-family residential development to the south; and undeveloped lands to the east. Surrounding areas to the north, south, and west are occupied primarily by single-family residential development. Open space areas of the Diablo Range lie adjacent to and east of the project site. The Residuals Management Project proposes impacts in approximately 4.4 acres of the larger WTP (Figure 2). The project site is located on the *Calaveras Reservoir*, *California* 7.5-minute United States Geological Survey (USGS) quadrangle.

The project site is located within the Santa Clara Valley Habitat Plan (VHP) permit area, and the proposed project is a *covered project* under the VHP (ICF International 2012).

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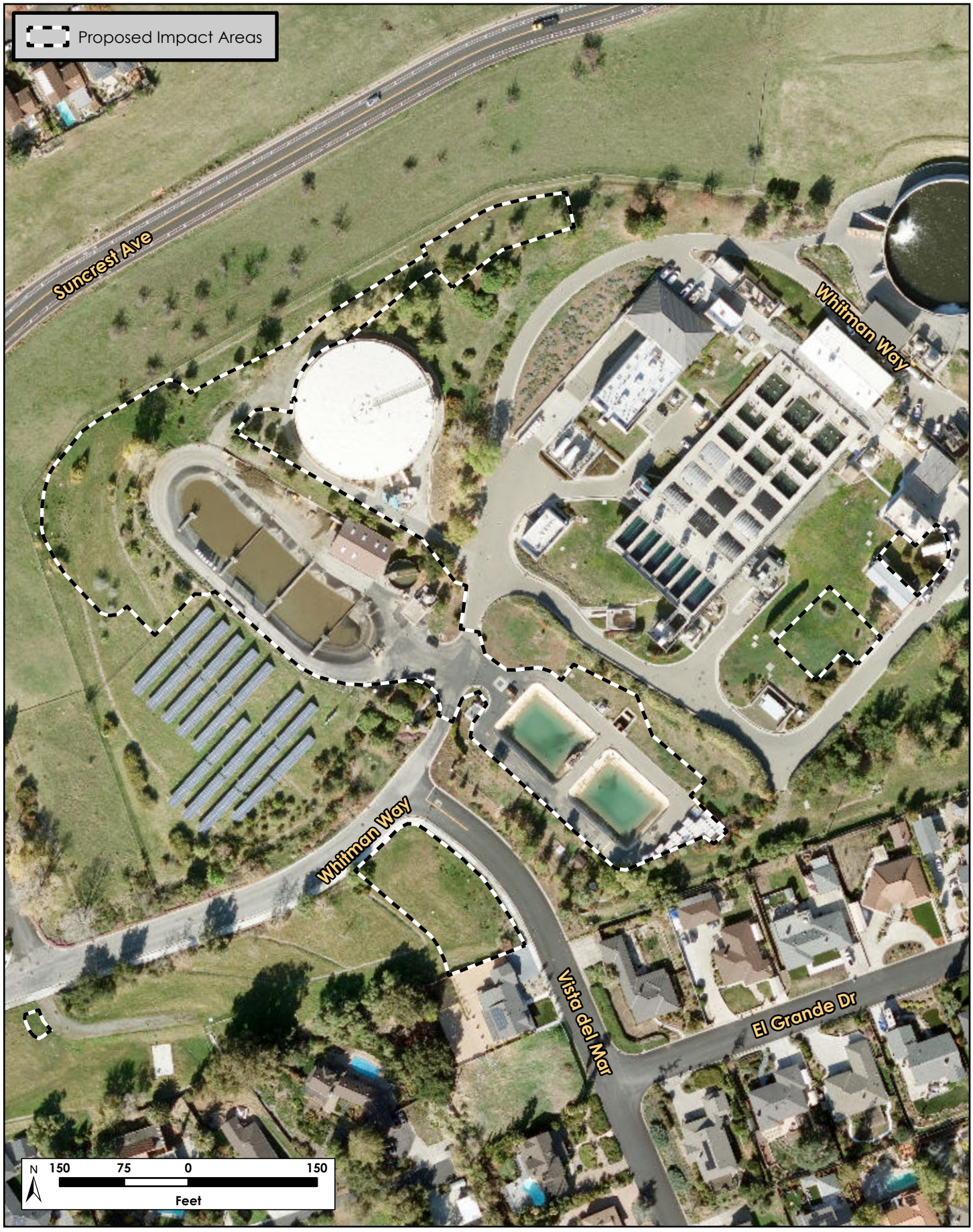
H. T. HARVEY & ASSOCIATES
Ecological Consultants

**Figure 1. Vicinity Map**
Penitencia Water Treatment Plant Residuals Management Project
Biological Resources Report (3364-07)
May 2024

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H. T. HARVEY & ASSOCIATES
Ecological Consultants

**Figure 2. Proposed Impact Areas**
Penitencia Water Treatment Plant Residuals Management Project
Biological Resources Report (3364-07)
May 2024

# Section 2. Methods

## 2.1 Background Review

Prior to conducting a site visit, H. T. Harvey and Associates ecologists reviewed the proposed project footprint provided by Panorama Environmental, Inc.; aerial images (Google LLC 2024); a USGS topographic map; the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) (2024); U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory Maps (2024); habitat and species information from the VHP (ICF International 2012); the VHP Geobrowser (SCVHA 2024); iNaturalist (iNaturalist 2024); and eBird (Cornell Laboratory of Ornithology 2024). For the purposes of this report, the *project vicinity* is defined as the area within a 5-mile radius surrounding the project site, and the *project footprint* refers to the areas where project activities are proposed to occur.

In addition, for plants, we reviewed all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, 2B, 3, and 4 lists (CNPS 2024) occurring in the project region, which is defined as the *Calaveras Reservoir, California* USGS 7.5-minute quadrangle and surrounding eight quadrangles (*La Costa Valley, Mendenhall Springs, Mount Day, Lick Observatory, San Jose East*, *San Jose West, Milpitas,* and *Niles*). In addition, we queried the CNDDB (2024) for natural communities of special concern that occur on the project site.

## 2.2 Site Visits

H. T. Harvey & Associates senior wildlife ecologist Craig Fosdick, M.S. and plant/wetlands ecologist Katherine Marlin, M.S. conducted a reconnaissance-level survey of the project site on May 21, 2024. Specifically, surveys were conducted to (1) assess existing biotic habitats and plant and animal communities on the project site, (2) assess the project site for its potential to support special-status species and their habitats, including VHP-covered species, and (3) determine whether any potential jurisdictional and sensitive habitats, such as waters of the U.S./state and riparian habitat, are present on the site.

Because the proposed project is a covered project under the VHP (ICF International 2012), VHP mapping of land cover types was field-verified and modified as necessary based upon site conditions observed during the survey. According to the VHP Geobrowser (SCVHA 2024), no mapped wildlife survey areas for VHP-covered species are present on the project site. However, the Geobrowser does map plant survey areas on the site. Therefore, K. Marlin assessed habitat suitability for special-status plants on the project site. K. Marlin also conducted a focused survey for potentially occurring special-status plants that would have been detectable at the time of the surveys, including Santa Clara Valley dudleya (*Dudleya abramsii* ssp. *setchellii*), big-scale balsamroot (*Balsamorhiza macrolepis*), Monterey ceanothus (*Ceanothus rigidus*), and Satan's goldenbush (*Isocoma menziesii* var. *diablolica*) on the project site.

# Section 3. Environmental Setting

## 3.1 General Project Area Description

The project site is located in San Jose in Santa Clara County, California (Figure 1). The climate in the project vicinity is coastal Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. Hot to mild temperatures are common in the summer. Climate conditions in the vicinity include a 30-year average of 16.22 inches of annual precipitation with a monthly average temperature range from 50ºF to 70.3ºF (PRISM Climate Group 2024). Elevations on the project site range from 350-450 feet above mean sea level (Google LLC 2024). The Natural Resource Conservation Service (NRCS) has mapped one soil unit on the project site: Montara-Santerhill complex, 15 to 30 percent slopes (NRCS 2024). This complex is a mosaic of deep, well drained soils formed from ultramafic and serpentine materials, mixed fine magnesic, thermic Aridic Haploxererts and loamy, magnesic, thermic Haploxerolls (NRCS 2024).

## 3.2 Land Cover

As described above, biotic habitats on the project site were classified according to the land cover classification system described in the VHP (ICF International 2012), with modifications to their mapped extent in the VHP based upon site conditions verified during the 2024 field survey. The reconnaissance-level survey identified four land cover types on the project site: California annual grassland, serpentine bunchgrass grassland, urban-suburban, and pond (Figure 3). These land cover types on the project site contain a number of plant species ranked by the California Invasive Plant Council (Cal-IPC) as being moderately and highly invasive (Cal-IPC 2024); these species are discussed further in Section 4.3.5 below. The land cover types are described in detail below.

### 3.2.1 California Annual Grassland

**Vegetation.** California annual grassland (1.68 acres) is the dominant land cover type on the project site (Photo 1). Scattered trees within this grassland include native valley oak (*Quercus lobata*) and coast live oak (*Quercus agrifolia*), and nonnative Aleppo pine (*Pinus halepensis*). Ornamental native and non-native species are also present in the shrub layer, and include rosemary (*Rosmarinus officinalis*), bottlebrush (*Melaleuca* sp.), toyon (*Heteromeles arbutifolia*), and coyote brush (*Baccharis pilularis*). Nonnative grasses such as wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), Italian ryegrass (*Festuca perennis*), red brome (*Bromus rubens*), Harding grass (*Phalaris aquatica*), beardless wild rye (*Elymus triticoides*), and foxtail barley (*Hordeum murinum*), as well as weedy nonnative forbs such as yellow sweetclover (*Melilotus officinalis*), redstem filaree (*Erodium cicutarium*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), prickly lettuce (*Lactuca serriola*), and spiny sow thistle (*Sonchus asper*), are present within this habitat. Native species such as California poppy (*Eschscholzia californica*) and nodding needlegrass (*Stipa cernua*) are distributed sparsely throughout this habitat. Habitat with a higher percent cover of nodding needlegrass is described in more detail in Section 3.2.2.

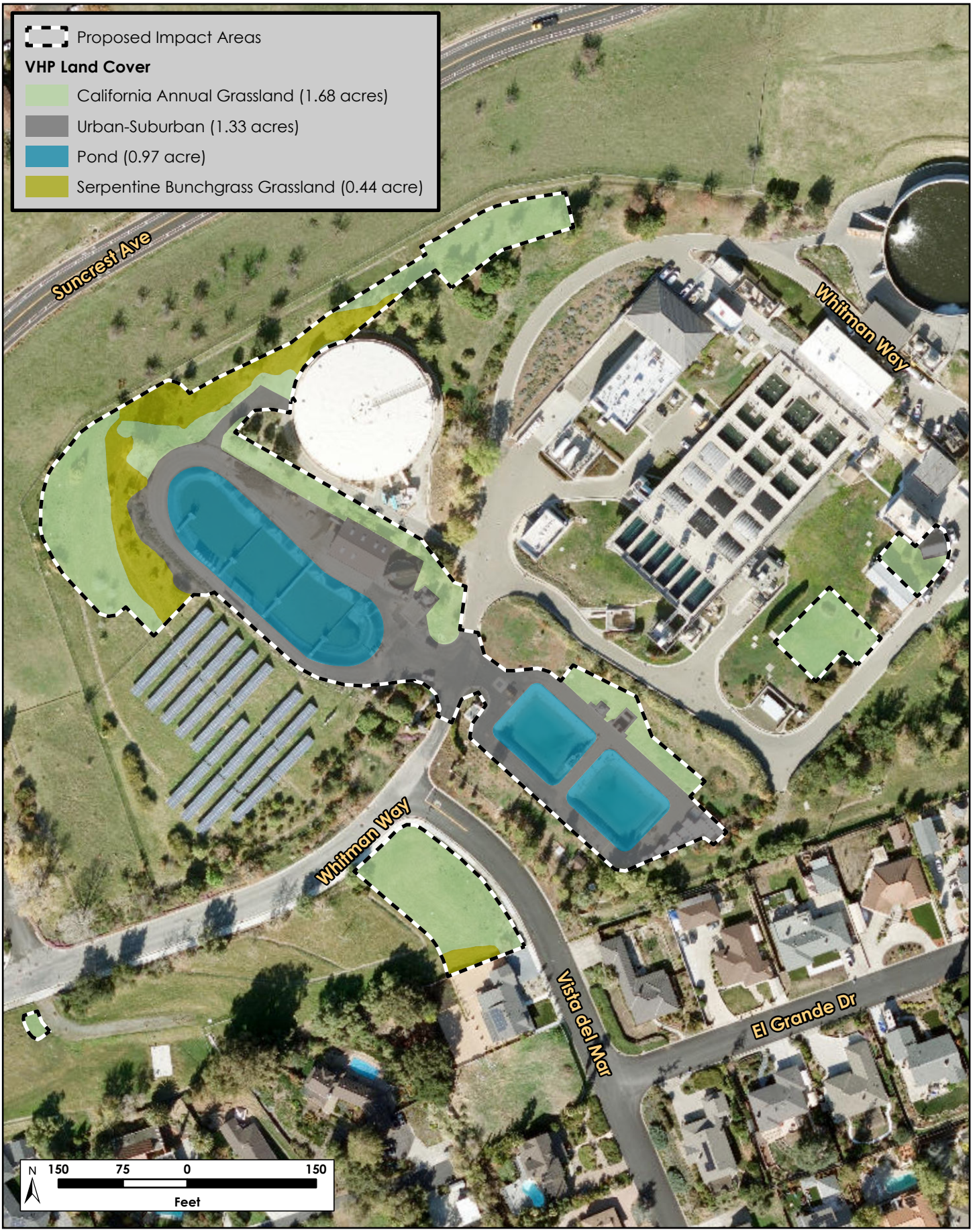


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**Figure 3. VHP Land Cover Verification Map**
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**Wildlife.** Wildlife use of California annual grassland habitat on the project site is limited due to the relatively small extent of the grassland, its position on the periphery of the project site, and the developed, residential land uses that surround the site on three sides. As a result, wildlife species associated with extensive grasslands in the South Bay, such as the grasshopper sparrow (*Ammodramus savannarum*), would not nest in grasslands on the project site, although they are found in more extensive, contiguous grasslands approximately 2.0 miles east of the project site (Cornell Lab of Ornithology 2024).

**Photo 1. California annual grassland looking east, taken May 21, 2024.**

Although grassland-associated bird species are expected to occur on the project site in low numbers, if at all, a number of resident bird species associated with the adjacent developed, ornamental woodland, and use the grasslands on the site for foraging. Such species include the house finch (*Haemorhous mexicanus*), dark-eyed junco (*Junco hyemalis*), lesser goldfinch (*Spinus psaltria*), and California towhee (*Melozone crissalis*), which forage on seeds in grassland areas, and the black phoebe (*Sayornis nigricans*) and cliff swallow (*Petrochelidon pyrrhonota*), which forage aerially over grassland habitats for insects. Several other species of birds use the California annual grassland during the nonbreeding season. These species, which include the golden-crowned sparrow (*Zonotrichia atricapilla*) and white-crowned sparrow (*Zonotrichia leucophrys*), forage on the ground or in herbaceous vegetation, primarily for seeds.

California ground squirrels (*Otospermophilus beecheyi*) are an important component of grassland communities, and where these fossorial mammal species do occur, they provide a prey base for diurnal raptors and terrestrial predators, and their burrows provide refugia for other vertebrates. However, no ground squirrels were observed during the site visit, and only four California ground squirrels burrows were found on the project site. Moreover, the four burrows that were present did not show signs of recent use, suggesting that ground squirrels may be currently absent from the project site. Other rodent species expected to occur in the grassland habitat on the project site include the California vole (*Microtus californicus*) and deer mouse (*Peromyscus maniculatus*). Diurnal raptors such as red-tailed hawks (*Buteo jamaicensis*) and red-shouldered hawks (*Buteo lineatus*) forage for these small mammals over grasslands during the day, and at night nocturnal raptors, such as barn owls (*Tyto alba*), will forage for nocturnal rodents, such as deer mice. Additionally, common bat species such as the Mexican free-tailed bat (*Tadarida brasiliensis*), Yuma myotis (*Myotis yumanensis*), and California myotis (*Myotis californicus*) will forage aerially for insects over the annual grasslands on the project site.

Several reptile species regularly occur in grassland habitats, including the western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), and southern alligator lizard (*Elgaria multicarinata*). Burrows of California ground squirrels, where present, provide refuges for these reptile species, as well as for common amphibians that may occur in adjacent riparian habitat such as the western toad (*Anaxyrus boreas*) and Pacific

tree frog (*Hyliola regilla*). Mammals such as the native striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), and black-tailed jackrabbit (*Lepus californicus*), as well as the nonnative Virginia opossum (*Didelphis virginiana*) and feral cat (*Felis catus*) use the grassland habitats on the project site for foraging. Black-tailed deer (*Odocoileus hemionus*) are also common in this habitat due to the site's location adjacent to extensive undeveloped open space areas to the east and northeast. At least eight black-tailed deer, including several does, a fawn, and a buck with velvet antlers were observed on site during the May 2024 reconnaissance survey. Several of these were observed using the California annual grassland, where they were bedded down under the extensive solar panel infrastructure, using it as shade.

### 3.2.2 Serpentine Bunchgrass Grassland

**Vegetation.** Patches of serpentine bunchgrass grassland (0.44 acres) are present on the project site, primarily along the northwestern margin (Figure 3, Photo 2). Native plants present within this habitat include nodding needlegrass, which provides greater than 30% cover within this land cover type. This greater cover of native bunchgrasses is associated with a reduction in overall cover and canopy height of non-native grasses, and these areas are situated over serpentine-influenced Montara-Santerhill soils. Nodding needlegrass is occasionally present, but much more sparsely, throughout surrounding areas mapped as California annual grassland, as discussed in Section 3.2.1. Additionally, unlike areas mapped as California annual grassland, there tended to be little to no tree or shrub canopy layer within the serpentine bunchgrass grassland.

**Photo 2. Nodding needlegrass and overall lower vegetation cover and height within the serpentine bunchgrass grassland in the foreground, compared to the higher and denser wild oats-dominated canopy of the California annual grassland in the background, taken May 21, 2024.**

**Wildlife.** Wildlife use of serpentine bunchgrass grasslands on the project is similar to wildlife use of California annual grasslands, as described above.

### 3.2.3 Urban-Suburban

**Vegetation.** A 1.33-acre portion of the project site consists of existing developed areas, which fall within the VHP's urban-suburban land cover type (Photo 3). These areas include paved roadways and existing infrastructure within the project site, such as buildings and associated equipment. Vegetation within the urban-suburban areas consists of small patches of sparse California annual grassland, as described in Section 3.2.1.

**Wildlife.** Urban-suburban areas of the project site serve as wildlife habitat only in a very limited capacity, and most wildlife species that occur in these areas are tolerant of frequent human disturbances. Wildlife that are present in the adjacent habitats may move along or across roadways when moving between habitat patches, and reptiles such as gopher snakes and western fence lizards may bask on these surfaces in order to raise their body temperature. A black phoebe was observed carrying nesting material to an existing piece of treatment infrastructure on the project site, and several other bird species may also use existing buildings and treatment infrastructure as nest sites or foraging perches.

**Photo 3. Paved developed habitat looking southeast, taken May 21, 2024.**

### 3.2.4 Pond

**Vegetation**. Pond habitat comprises 0.97 acres in the center of the project site and includes two separate treatment ponds that are components of the water treatment plants infrastructure (Photo 4). Although this habitat is a human-made, perennial water body, lacks submerged or floating wetland vegetation, and is not connected to any natural waterbodies they provide perennial water, the VHP (page 3-86) classifies water-treatment ponds as "ponds", even though they may provide only marginal-quality aquatic habitat for plants and animals.

**Wildlife.** The two artificial ponds on the site support a very limited suite of common wildlife species. Songbirds normally associated with marsh or pond habitats would not use the ponds for foraging or nesting, given the lack of emergent vegetation or adjacent weedy vegetation in and around the ponds. Neither pond was observed to support any turtles or fish, nonnative or otherwise, during the May 2024 reconnaissance survey. No amphibians, such as Pacific treefrogs and western toads, were observed during the May 2024 reconnaissance survey, and it is unlikely that either pond would suitable habitat for amphibians given the lack of vegetation. However, the ponds may occasionally host waterbirds such as Canada goose (*Branta canadensis*) or mallards (*Anas platyrhynchos*), which may nest in grassland habitats around these ponds. A killdeer (*Charadrius vociferus*) was observed foraging in the shallow water around the edge of the northern pond during the May 2024 reconnaissance survey. Barn swallows

**Photo 4. Artificial pond habitat at the south end of the project site.**

(*Hirundo rustica*), cliff swallows, northern rough-winged swallows (*Stelgidopteryx serripennis*), and violet-green swallows (*Tachycineta thalassina*) may forage over the ponds. Common, generalist odonates may forage over and near both ponds, such as the common green darner (*Anax junius*) observed during the May 2024 reconnaissance surveys.

## 3.3 Wildlife Movement

Wildlife movement within and in the vicinity of the project site takes many forms and is different for the various suites of species associated with these lands. Bird and bat species move readily over the landscape in the project vicinity, foraging over and within both natural lands and landscaped areas. Mammals of different species move within their home ranges, but also disperse between patches of habitat. Generally, reptiles and amphibians similarly settle within home ranges, sometimes moving to central breeding areas, upland refugia, or hibernacula in a predictable manner, but also dispersing to new areas. Some species, especially birds and bats, are migratory, moving into or through the project vicinity during specific seasons. Aside from bats, there are no other mammal species in the vicinity of the site that are truly migratory. However, the young of many mammal species disperse from their natal home ranges, sometimes moving over relatively long distances in search of new areas in which to establish.

Movement corridors are segments of habitat that provide linkage for wildlife through the mosaic of suitable and unsuitable habitat types found within a landscape while also providing cover. On a broader level, corridors also function as paths along which wide-ranging animals can travel, populations can move in response to environmental changes and natural disasters, and genetic interchange can occur. In California, environmental corridors often consist of riparian areas along streams, rivers, or other natural features. However, no riparian corridor is present in or adjacent to the project site.

The project site is located along the eastern boundary of suburban development associated with the city of San Jose. The open habitats of the project site are contiguous with extensive open habitats of the Diablo Range to the east, and some dispersal of animals between the project site and undeveloped lands in immediately adjacent areas occurs. However, to the west of the project site, the city of San Jose and the larger metropolitan complex of South Bay cities form a nearly impassable barrier to long-range, east-west movements by non-flying animals. Although the Diablo Range to the east of the project site provides extensive natural habitats that support long-range movements by a variety of animals, the project site is not situated within this movement corridor. Therefore, the project site is not located within a particularly important area for regional wildlife movement.

Most larger animals that stray into the suburban matrix near the project site during dispersal events are not likely to remain there for long, as many of these species, such as bobcats, coyotes, and mountain lions (*Puma concolor*), are averse to interaction with humans. In contrast, wildlife residing on or near the project site are accustomed to human disturbance, such as the numerous black-tailed deer (including fawns, does, and bucks) observed on the project site during the site visit. Many of these species will navigate readily through the matrix of suburban, agricultural, and rural-residential landscapes. Thus, while small-scale, local movement of wildlife

may occur throughout the project site, we do not expect animals to use the project site during regionally important, landscape-level dispersal.

# Section 4. Special-Status Species and Sensitive Habitats

For purposes of this analysis, "special-status" plants are considered plant species that meet one or more of the following criteria:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2, 3, or 4.

For purposes of this analysis, "special-status" animals are considered animal species that meet one or more of the following criteria:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFW as a California species of special concern.
- Listed in the California Fish and Game Code as fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515).

Information concerning threatened, endangered, and other special-status species that potentially occur on the project site was collected from several sources and reviewed by H. T. Harvey & Associates biologists as described in Section 2.1 above. Figure 4 depicts CNDDB records of special-status plant species in the general vicinity of the project site and Figure 5 depicts CNDDB records of special-status animal species. These generalized maps show areas where special-status species are known to occur or have occurred historically.

## 4.1 Special-Status Plant Species

The CNPS (2024) and CNDDB (2024) identify 70 special-status plant species as potentially occurring in at least one of the nine USGS 7.5-minute quadrangles containing or surrounding the project site (Appendix A). Of the 70 potentially occurring special-status plant species, 65 were determined to be absent from the project site for at least one of the following reasons: (1) absence of suitable habitat types, (2) lack of specific microhabitat or edaphic requirements, (3) the elevation range of the species is outside of the range of the project site, and/or (4) the project site is outside the species' known geographic range and/or there are no nearby extant records (Appendix A).

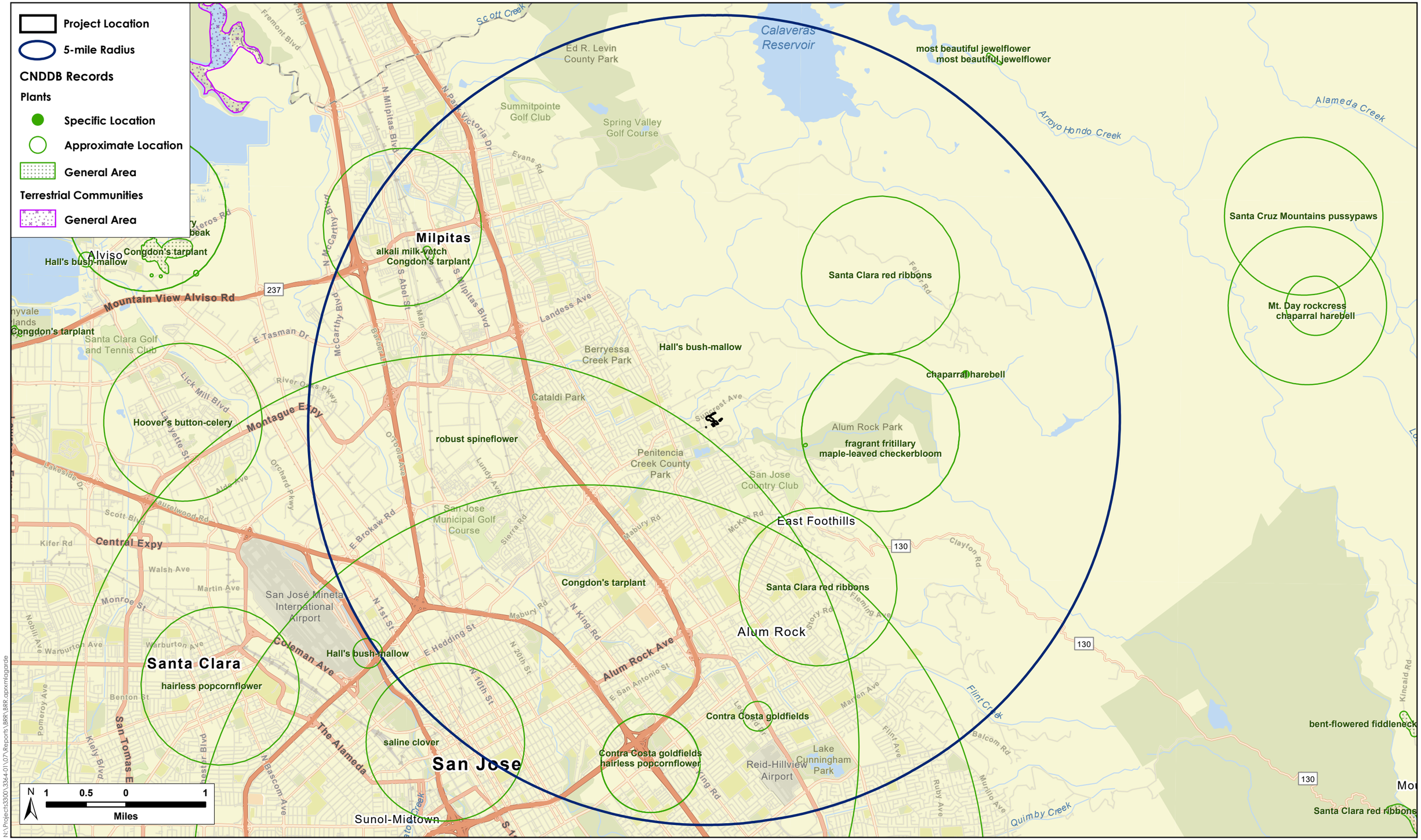


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**Figure 4. CNDDB-Mapped Records of Special-Status Plants**
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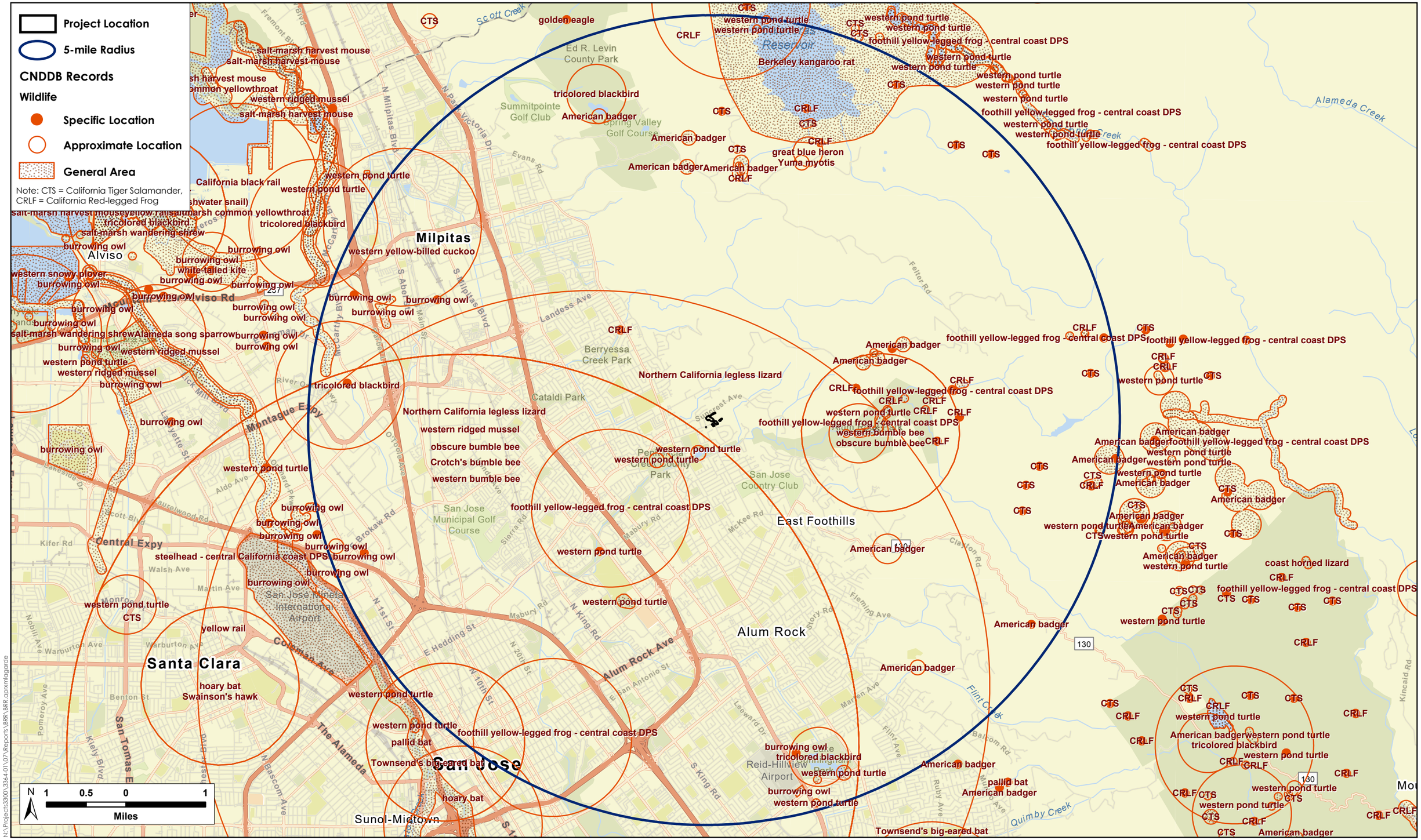


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**Figure 5. CNDDB-Mapped Records of Special-Status Animals**
Penitencia Water Treatment Plant Residuals Management Project
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Suitable habitat, edaphic requirements, and elevation range are present on the project site for 5 special-status plant species; these species are addressed in greater detail in Table 1 below. Of the 5 special-status plant species for which suitable habitat is present on the site, focused surveys conducted during the reconnaissance site visit on May 21, 2024 determined that all are absent from the site.

## 4.2 Special-Status Animal Species

The legal status and likelihood of occurrence on the project site of special-status animal species known to occur, or potentially occurring, in the surrounding region are presented in Table 2. Most of the special-status species listed in Table 2 are not expected to occur on the project site because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat.

A number of special-status animal species that are present in less urbanized settings in the South Bay or in specialized habitats in the South Bay, or that occurred in the South Bay historically but are no longer present, are absent from the project site due to a lack of suitable habitat and/or isolation of the site from populations by urbanization or agricultural development. The federally endangered bay checkerspot butterfly (*Euphydryas editha bayensis*) occurs in native serpentine bunchgrass grassland communities that support dense stands of its primary larval food plant, dwarf plantain (*Plantago erecta*). Although native serpentine bunchgrass grassland communities are present on the project site, dwarf plantain is not present, and the closest known occurrence of bay checkerspot butterflies is located approximately 7.15 miles south of the project site, a historical population formerly known to be present at Silver Creek Hills, adjacent to U.S. 101 (CNDDB 2024).

While golden eagles (*Aquila chrysaetos*), bald eagles (Haliaeetus leucocephalus), and Swainson's hawks (*Buteo swainsoni*) may fly over or briefly forage on the project site, none of these species are expected to nest in, or make substantial use of any resources on the project site. The Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), a California species of special concern, and the grasshopper sparrow and northern harrier (*Circus hudsonius*), both considered California species of special concern only when nesting, may occur occasionally in grasslands on the project site as nonbreeding transients, foragers, or migrants, but no suitable nesting habitat for these species occurs on the project site. Similarly, the tricolored blackbird, a state threatened species, may forage on the project site, but it is not expected to nest there. The mountain lion, a candidate for listing under CESA, as well as the pallid bat (*Antrozous pallidus*) and American badger, which are California species of special concern, may also forage on or disperse through the project site. These species are not expected to den, nest, roost, or breed in or immediately adjacent to the project site due to a lack of suitable denning, nesting, roosting, or breeding habitat, and will be affected very little, if at all, by the proposed project. No badger dens were found during the reconnaissance survey in May 2024. The monarch butterfly (*Danaus plexippus*), a federal candidate species, may occur on the project site in small numbers, especially during spring and fall migration, but the species is not known to form wintering roosts anywhere in Santa Clara County. No milkweeds (*Asclepias* spp.), the species' larval hostplant, were detected during the May 2024 reconnaissance surveys.

**Table 1. Special-Status Plant Species, Their Status, and Potential for Occurrence on the Project Site**

| Name | *Status | Habitat and Blooming Period | Potential for Occurrence on the Project Site |
|---|---|---|---|
| **Federal or State Endangered, Threatened, or Candidate Species** | | | |
| **CNPS-Listed Plant Species** | | | |
| Bent-flowered fiddleneck (*Amsinckia lunaris*) | CRPR 1B.2 | Cismontane woodland, coastal bluff scrub and valley and foothill grassland (blooming period March to June). | **Absent.** Suitable valley and foothill grassland habitat to support this species is present on the project site. A record from 1998 is located 9.6 miles southeast on near Mt. Hamilton (CNDDB 2024). However, the survey performed in May 2024 did not detect this species. |
| San Francisco wallflower (*Erysimum franciscanum*) | CRPR 4.2 | 8.2 | **Absent.** Suitable valley and foothill grassland habitat to support this species is present on the project site. A record from 2022 is located 13 miles southeast near Coyote ridge (Calflora 2024). However, the survey performed in May 2024 did not detect this species. |
| Large-flowered leptosiphon (*Leptosiphon grandiflorus*) | CRPR 4.2 | Usually sandy soils in cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland (blooming period April to August). | **Absent.** Suitable valley and foothill grassland habitat to support this species is present on the project site. A record from 1985 is located 10 miles southeast near Mt. Hamilton (Calflora 2024). However, the survey performed in May 2024 did not detect this species. |
| Metcalf Canyon jewelflower (*Streptanthus albidus* ssp. *albidus*) | CRPR 1B.2 | Serpentine valley and foothill grassland (blooming period April to July). | **Absent.** Suitable valley and foothill grassland habitat to support this species is present on the project site. A record from 2016 is located 9.6 miles south in east San Jose (CNDDB 2024). However, the survey performed in May 2024 did not detect this species. |
| Most beautiful jewelflower (*Streptanthus albidus* ssp. *peramoenus*) | CRPR 1B.2 | Chaparral, cismontane woodland, and valley and foothill grassland (blooming period April to September). | **Absent.** Suitable valley and foothill grassland habitat to support this species is present on the project site. A record from 2009 is located 6 miles north near Calaveras reservoir (CNDDB 2024). However, the survey performed in May 2024 did not detect this species. |

*Key to Status Abbreviations: Federally Endangered (FE); State Threatened (ST); VHP Covered Species (VHP); California Rare Plant Rank (CRPR).

CRPR 1B = Rare, Threatened, or Endangered in California and elsewhere

CRPR 3 = Plants about which more information is needed (a review list)

CRPR 4 = Plants of limited distribution - Watch list

.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% of occurrences threatened)

**Table 2. Special-Status Animal Species, Their Status, and Potential for Occurrence on the Project Site**

| Name | *Status | Habitat | Potential for Occurrence on the Project Site |
|---|---|---|---|
| **Federal or State Endangered, Threatened, or Candidate Species** | | | |
| Bay checkerspot butterfly (*Euphydryas editha bayensis*) | FT, VHP | Native grasslands on serpentine soils. Larval host plants are *Plantago erecta* and/or *Castilleja* spp. | **Absent.** This species has not been recorded on the project site, and the closest records are approximately 7.15 miles south of the project site, from a historical population formerly known to be present at Silver Creek Hills, adjacent to U.S. 101 (CNDDB 2024). Although there is a small amount of native grassland on serpentine soil located on the project site, no larval host plants were observed during the reconnaissance survey. Moreover, there are no known nearby populations, thus precluding this species presence. |
| Monarch butterfly (*Danaus plexippus*) | FC | Requires milkweeds (*Asclepias* spp.) for egg-laying and larval development, but adults obtain nectar from a wide variety of flowering plants in many habitats. Individuals congregate in winter roosts, primarily in Mexico and in widely scattered locations on the central and southern California coast. | **Absent as Breeder.** The monarch butterfly occurs in the project region primarily as a migrant, and no current or historical overwintering sites are known in Santa Clara County. No larval host plants (i.e. milkweeds) were observed on the project site during the May 2024 reconnaissance surveys. While small numbers of individuals may forage on the project site, especially during spring and fall migration, the site does not provide high-quality foraging habitat for this species due to a lack of abundant floral resources. |
| Crotch's bumble bee (*Bombus crotchii*) | SC | Open grassland and scrub habitats with abundant flowers providing nectar and pollen and with subterranean nest sites (such as animal burrows). | **May be Present.** Although this species was historically found throughout the southern two-thirds of California, including the project vicinity, population declines and range contractions (25% relative to its historical range) have made this species very scarce in the region (CDFW 2019). Since 2019, however, there have been a number of records of small numbers of individuals from scattered locations in Santa Clara County as close to the project site as Sierra Vista Open Space, approximately 2.1 miles to the east, where the species was recorded in June 2023 and May 2024 (Bumble Bee Watch 2024), indicating that the species is still extant in the county. The project site does not provide high-quality habitat for this species, as the project site is dominated by nonnative grasses, and flowering plants are not abundant. However, individuals may occur occasionally and in small numbers as foragers, and the possibility that nesting could occur on the site (e.g., in a ground squirrel burrow) cannot be ruled out. |

| Name | *Status | Habitat | Potential for Occurrence on the Project Site |
|---|---|---|---|
| Western bumble bee (*Bombus occidentalis*) | SC | Occurs in a variety of grassland, scrub, and open woodland habitats. | **Absent.** Although the species was historically found throughout much of central and northern California, including the project vicinity, it has been extirpated from much of its former range, and there are no recent records from Santa Clara County or nearby areas (CNDDB 2024, Bumble Bee Watch 2024, iNaturalist 2024). Therefore, this species is absent from the project site. |
| Central California Coast steelhead (*Oncorhynchus mykiss*) | FT | Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats. | **Absent**. No suitable aquatic habitat is present on the project site. |
| Northwestern pond turtle (*Actinemys marmorata*) | CSSC, FT(P), VHP | Permanent or intermittent/seasonal water in a variety of habitats. Nests in uplands surrounding aquatic habitats, typically within 600 feet, but up to 0.25 miles away, depending on habitat conditions. | **May be Present.** Northwestern pond turtles are known in the project vicinity, with the closest CNDDB-mapped occurrence in a pond approximately 0.32 mile west-southwest of the project site (CNDDB 2024). The ponds on site are not natural, not connected to natural waterbodies, lack emergent vegetation and basking sites, likely lack a prey base, and provide low-quality habitat at best. However, we cannot eliminate the possibility that a dispersing northwestern pond turtle (e.g., from nearby ponds or creeks) could occasionally occur in these ponds. |
| California tiger salamander (*Ambystoma californiense*) | FT, ST, VHP | Breeds in seasonal and perennial pools/ponds in grasslands or open woodlands; spends most time in subterranean refugia such as small mammal burrows or deep rock crevices. | **Absent.** Currently, California tiger salamanders are extirpated from the Santa Clara Valley floor, and are now known primarily from populations in the Diablo Range, and to the south of the project vicinity, in the Coyote Valley and surrounding foothills (CNDDB 2024). Historically, there is an 1895 record of California tiger salamander located to the west-southwest of the project site on the Santa Clara Valley floor, mapped to a nonspecific record in San Jose (CNDDB 2024). The closest extant population is located approximately 1.95 mile east of the project site (CNDDB 2024). Ostensibly suitable upland dispersal and refugial habitat is present on the project site in the form of a handful of small mammal burrows. However, suitable breeding habitat is not present on the project site – both artificial ponds lack emergent vegetation, and both may be drained and refilled on a regular basis. The southernmost pond precludes access by salamanders, as it has an approximately 2-ft tall vertical wall surrounding its periphery which would prevent easy access by salamanders, and the same wall would prevent salamanders from exiting the pond. |

| Name | *Status | Habitat | Potential for Occurrence on the Project Site |
|---|---|---|---|
| California red-legged frog (*Rana draytonii*) | FT, CSSC, VHP | Streams, freshwater pools, and ponds with emergent or overhanging vegetation. | **May be Present.** California red-legged frogs are known in the project vicinity; the closest records of the species to the project site are from Sierra Vista Open Space Preserve, approximately 1.63 miles to the east (CNDDB 2024). While the closest known occurrences to the project site near the limits of the dispersal capabilities of the species, there are no substantial barriers to dispersal between these known populations and the project site. However, the project site lacks suitable breeding habitat, although ostensibly suitable dispersal, and foraging habitat is present on the project site. Aside from the two artificial ponds, the project site lacks suitable aquatic habitat, but given that populations exist within the known dispersal distance of this species and that dispersal from nearby ponds or creeks is possible, the presence of California red-legged frogs, at least occasionally and in small numbers, cannot be ruled out. |
| Foothill yellow-legged frog (*Rana boylii*) | SE, FT, VHP | Partially shaded, shallow, perennial streams and riffles with a rocky substrate. Also occasionally occurs in intermittent streams and small instream impoundments. Occurs in a variety of habitats in coast ranges. | **Absent.** This species is very closely associated with water, and there are no creeks, streams, or rivers are present on the project site. CNDDB records are known from Alum Rock Park, approximately 0.60 miles southeast of the project site (CNDDB 2024), and there is a historical record (1904) from Berryessa Creek in San Jose, at a non-specific location approximately 0.67 miles from the project site (CNDDB 2024). Although presumably robust populations exist in Arroyo Hondo Creek approximately 5.0 miles east, and in Penitencia Creek, approximately 2.8 miles east-southeast of the project site (CNDDB 2024), this species has been extirpated from Valley floor areas of Santa Clara County, and given that the site lacks suitable habitat, the species is not expected to occur on the project site. Determined to be absent. |

| Name | *Status | Habitat | Potential for Occurrence on the Project Site |
|---|---|---|---|
| Swainson's hawk (*Buteo swainsoni*) | ST | Nests in trees surrounded by extensive marshland or agricultural foraging habitat | **Absent as Breeder.** This species is a rare breeder in Santa Clara County; however, two pairs of Swainson's hawks have nested in Santa Clara County in recent years. Each year from 2013 to 2020, a pair of Swainson's hawks nested near Coyote Creek in northern Coyote Valley, providing the first County nesting record since the 1890s (Phillips et al. 2014). The only other modern record of nesting Swainson's hawk in Santa Clara County has been along State Route 152 southeast of Gilroy, from 2020 to the present (Klein et al. 2022). Although nesting Swainson's hawks may be increasing in the region, they are not expected to nest on or adjacent to the project site due to the absence of high-quality, valley-floor foraging habitat in the immediate vicinity of the site. The project site provides limited foraging habitat for this species due to its small size, and Swainson's hawks are expected to forage on the site rarely, if at all. |
| Bald eagle (*Haliaeetus leucocephalus*) | SE, SP | Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or in cliffs, occasionally on electrical towers. Feeds mostly on fish. | **Absent as Breeder.** Known to nest (or to have recently nested) in Santa Clara County in at least 10 locations, mostly near reservoirs (Bousman 2007, Ventana Wildlife Society 2012). Due to the absence of high-quality foraging habitat (e.g., a large lake) from the project vicinity, this species is unlikely to nest on or near the site and given the apparent lack of large concentrations of suitable prey on the project site (e.g., small mammals, waterfowl) it is not expected to occur on site. |
| Least Bell's vireo (*Vireo bellii pusillus*) | FE, SE, VHP | Nests in heterogeneous riparian habitat, often dominated by cottonwoods and willows. | **Absent.** No suitable habitat for the least Bell's vireo is present on the project site. The only breeding records in Santa Clara County are from Llagas Creek southeast of Gilroy in 1997 and the Pajaro River south of Gilroy in 1932 (Rottenborn 2007a), and the only other confirmed records of the species in the project vicinity are of one or two singing males along lower Llagas Creek in May 2001. Although least Bell's vireos may increase in number and distribution in Santa Clara County as core populations increase, no individuals have been recorded in southern Santa Clara County since 2001. Thus, the species is unlikely to be more than a rare and very locally occurring breeder in higher quality, less urbanized, and more extensive early successional riparian habitats along streams well south of the project site. |

| Name | *Status | Habitat | Potential for Occurrence on the Project Site |
|---|---|---|---|
| Tricolored blackbird (*Agelaius tricolor*) | ST, VHP | Highly colonial nester that establishes dense breeding colonies in emergent vegetation, grain fields, fallow fields, extensive thickets of blackberry, ruderal vegetation such as mustard or thistle, and occasionally in early-successional riparian habitat. Nesting colonies usually are located near fresh water. Tricolored blackbirds are itinerant nesters, and because their nesting habitat is ephemeral, it is possible for this species to colonize or recolonize an area as suitable breeding habitat becomes available. | **May be Present as Nonbreeder.** In Santa Clara County, the species has bred in only a few scattered locations, and is absent from, or occurs only as a nonbreeder in most of the County (Rottenborn 2007b). The species typically nests in flooded, thorny, or spiny vegetation such as blackberry, cattails, willows, thistles, or nettles, none of which is present on or adjacent to the project site. No cattails are present at either pond, and no large patches of thistles or other spiny vegetation are present on the project site. The scattered trees present on the project site do not provide suitable nesting habitat for this species. Therefore, suitable nesting habitat is absent from the project site. Furthermore, this species (whose colonies are loud and conspicuous) has never been recorded nesting within or adjacent to the site (Cornell lab of Ornithology 2024, CNDDB 2024) and the VHP does not map the project site as habitat for the species (ICF 2012). Tricolored blackbirds forage in agricultural fields, grasslands, and other open habitats, and small numbers could occasionally forage in the grassland and wetland habitats on the project site during either the breeding or nonbreeding season. |
| San Joaquin kit fox (*Vulpes macrotis mutica*) | FE, ST, VHP | Annual grassland or mixed shrub and grassland habitats throughout low, rolling hills and in valleys. | **Absent.** This species has not been recorded on or near the project site (iNaturalist 2024; CNDDB 2024), and the VHP does not map the project site as habitat for the species. The closest area of potential occurrence (based on VHP mapping) is approximately 32 miles south of the project site in the vicinity of State Route 152, where it may occur infrequently and in low numbers during dispersal (ICF International 2012). Determined to be absent. |
| Mountain lion (Southern California/Central Coast ESU) (*Puma concolor*) | SC | Has a large home range size and occurs in a variety of habitats. Natal dens are typically located in remote, rugged terrain far from human activity. May occasionally occur in areas near human development, especially during dispersal. | **May be Present as Nonbreeder.** In the project vicinity, there are verified sightings (Bay Area Puma Project 2024) and numerous unpublished reports. Occurs widely, though at low densities, throughout the Santa Cruz Mountains and Diablo Range, and may disperse into lowland/valley floor areas. Mountain lions are not expected to regularly use the project site or establish a den on the site due to high levels of human activity and a lack of suitable denning habitat, but individuals may occur on the site as rare dispersants due to the site's location on the periphery of the Valley floor, as well as during hunting events, as multiple deer were observed using the project site during the reconnaissance survey. |
| **California Species of Special Concern** | | | |

| Name | *Status | Habitat | Potential for Occurrence on the Project Site |
|---|---|---|---|
| Northern harrier (*Circus hudsonius*) | CSSC (nesting) | Nests in marshes and moist fields with tall vegetation and sufficient moisture to inhibit accessibility of nest sites to predators. Forages over open areas. | **May be Present as Nonbreeder.** This species, which is considered special-status only when breeding, occurs year-round in the project vicinity (Cornell Lab of Ornithology 2024). There are no wetlands present on the project site, this precluding this species presence as a breeder. However, the species may occur as an occasional forager. |
| Burrowing owl (*Athene cunicularia*) | CSSC, VHP | Nests and roosts in open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels. | **May be Present as Nonbreeder.** Burrows of California ground squirrels on the project site provide ostensibly suitable nesting and roosting habitat for this species, and grasslands on the site provide ostensibly suitable foraging habitat. However, only three ground squirrel burrows were observed during the survey, burrowing owls are not known to occur on the project site, and no individuals were observed during the May 2024 reconnaissance surveys. The VHP does not map the project site as occupied breeding habitat (ICF International 2012). It is possible, however, that burrowing owls may occur on the site as infrequent transients or foragers in low numbers during winter and migration, and nonbreeders could occasionally roost in the handful of ground squirrel burrows on the project site. |
| Loggerhead shrike (*Lanius ludovicianus*) | CSSC (nesting) | Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats. | **May be Present as Breeder.** Loggerhead shrikes are known to nest in the project vicinity where open grassland, ruderal, or agricultural habitat with scattered brush, chaparral, or trees providing perches and nesting sites are present (Bousman 2007a). Moderately suitable nesting habitat is present on the project site, and up to one pair may nest in trees on or adjacent to the Project site. However, due to recent declines in this species' South Bay populations, the probability of nesting is low. |
| Yellow warbler (*Setophaga petechia*) | CSSC (nesting) | Nests in riparian woodlands. | **May be Present as Nonbreeder.** Yellow warblers are not known to breed in the vicinity of the project site (Cornell Lab of Ornithology 2024), and no suitable habitat is present on the project site. However, migrants may occur on the project site during spring and fall migration. |

| Name | *Status | Habitat | Potential for Occurrence on the Project Site |
|---|---|---|---|
| Grasshopper sparrow (*Ammodramus savannarum*) | CSSC (nesting) | Nests and forages in grasslands, meadows, fallow fields, and pastures. | **May be Present as Nonbreeder.** Known to occur in the region primarily in grasslands and less frequently disturbed agricultural habitats, mostly in the foothills. This species does not breed in grasslands on the Santa Clara Valley floor. Small numbers of individuals may forage in grasslands in the project site during migration. No suitable nesting habitat occurs on the project site and no individuals were observed during the reconnaissance survey in May 2024. |
| Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) | CSSC | Nests in pickleweed dominant salt marsh and adjacent ruderal habitat. | **May be Present as Nonbreeder.** In the South San Francisco Bay, nests primarily in short pickleweed-dominated portions of diked/muted tidal salt marsh habitat and in adjacent ruderal habitats, though small numbers nest in extensive grasslands within the Santa Cruz Mountains as well (Rottenborn 2007c). No suitable nesting habitat occurs on the project site and no individuals were observed during the reconnaissance survey in May 2024. |
| Pallid bat (*Antrozous pallidus*) | CSSC | Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees. | **May be Present as Nonbreeder.** Historically, pallid bats were likely present in a number of locations throughout the project region, but their populations have declined in recent decades. The species is not known in the project vicinity. The closest record is a 2007 record in the vicinity of Vista Point Court, located approximately 5.87 miles south-southeast of the project site (CNDDB 2024). No known maternity colonies of this species are present in the vicinity of the project site. No suitable roosting habitat was identified during the May 2024 reconnaissance survey. No large tree cavities or suitable artificial structures suitable to support a roost of this species were observed during the reconnaissance survey. It is unlikely that the species occurs on the site at all due to nearby urbanization; however, individuals from distant colonies (especially in the Diablo Range to the east) could occasionally forage on the project site. |

| Name | *Status | Habitat | Potential for Occurrence on the Project Site |
|---|---|---|---|
| Townsend's big-eared bat (*Corynorhinus townsendii*) | CSSC | Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats. | **Absent.** No known extant populations of the Townsend's big-eared bat are present in the project vicinity. The closest record of the species is a 1943 record mapped to the general vicinity of San Jose (CNDDB 2024), approximately 4 miles west of the project site. The closest presumed extant records of the species are a cluster of three records approximately 14 miles south-southeast of the project site, all day roosts located on a former rocket production facility (CNDDB 2024). No suitable roosting habitat was observed on the project site during the May 2024 reconnaissance surveys. Determined to be absent. |
| San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) | CSSC | Nests in a variety of habitats including riparian areas, oak woodlands, and scrub. | **Present.** Suitable habitat for this species is present in the southern side of the project site, where at least one occupied nest was observed during the May 2024 reconnaissance survey. Food plants (e.g., toyon (*Heteromeles arbutifolia*) and coast live oak (*Quercus agrifolia*) are also present on the project site. |
| American badger (*Taxidea taxus*) | CSSC | Burrows in grasslands and occasionally in infrequently disked agricultural areas. | **May be Present as Nonbreeder.** Known to occur in the project vicinity, as close as Sierra Vista Open Space Preserve, located approximately 1.88 miles east of project site (iNaturalist 2024). Found primarily in extensive grasslands and agricultural habitats in the Diablo Range. Badgers are not expected to regularly use the project site or establish a den on the site due to high levels of human activity, but individuals may occur on the site as infrequent dispersants or foragers due to the site's location in close proximity to known populations. |

| | | | |
|---|---|---|---|
| **State Fully Protected Species** | | | |
| Golden eagle (*Aquila chrysaetos*) | SP | Breeds on cliffs or in large trees (rarely on electrical towers); forages in open areas. | **May be Present as Nonbreeder.** No suitable nesting habitat for golden eagles is present on the project site. This species occurs in the project vicinity as an occasional forager, primarily during migration and winter. The project site provides only very limited foraging habitat for this species due to its small size, as well as the lack of suitable prey (no California ground squirrels were observed, and only three old CAGS burrows were found), and golden eagles are expected to forage on the site rarely, if at all. |
| White-tailed kite (*Elanus leucurus*) | SP | Nests in tall shrubs and trees; forages in grasslands, marshes, and ruderal habitats. | **May be Present as Breeder.** White-tailed kites are common residents in open areas in the project vicinity. Some of the larger trees along the project site (e.g., along the fence line) may provide suitable nesting habitat for this species. No white-tailed kites or nests of this species were observed on or adjacent to the site during the May 2024 reconnaissance surveys; however, up to one pair of white-tailed kites may nest in trees on or adjacent to the project site. Individuals may forage in open habitats on and adjacent to the site year-round. |

Key to Abbreviations: Status: Federally Endangered (FE); Federally Threatened (FT); Federally Proposed as Threatened [FT(P)]; Federal Candidate for Listing (FC); State Endangered (SE); State Threatened (ST); State Candidate for Listing (SC); State Fully Protected (SP); California Species of Special Concern (CSSC); Santa Clara Valley Habitat Plan Covered Species (VHP).

The northwestern pond turtle, a California species of special concern and candidate for listing under FESA, is not known to be present in either pond on the project site, nor is it known to breed in the upland habitats surrounding the pond. As discussed above in Section 3.2.4, the two ponds present on the project site are likely not suitable habitat for this species as they are not natural habitats, do not contain emergent vegetation, are not connected to any natural water body, and likely do not contain any prey items that turtles might consume. Nevertheless, given that turtles are known from a location 0.32 miles west-southwest of the project site (CNDDB 2024), it is possible that turtles may occasionally disperse onto the project site, and may use the north pond for refuge. The south pond cannot be accessed by turtles or amphibians, as it is surrounded by an approximately 2-foot vertical wall that rings the entire perimeter (see Photo 4). California red-legged frogs (*Rana draytonii*) could occasionally occur on the project site during dispersal events, as the project site is within the species dispersal distance from known occurrences (CNDDB 2024), but the species is not expected to use habitat on the project site on a regular basis, if it occurs at all.

At least one nest of the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), a California species of special concern, was detected in an olive hedge, a somewhat atypical habitat for this species, on the project site during the May 2024 reconnaissance. However, both toyon and oaks, two known woodrat food plants, are present and abundant in the area.

Suitable nesting and foraging habitat for the loggerhead shrike (*Lanius ludovicianus*) and Crotch's bumble bee (*Bombus crotchii*) is present on the project site. Although there is some potential for these species to nest on the site, the probability of nesting by either species is very low given the scarce nature of these species, which are present in the region in low densities. The burrowing owl (*Athene cunicularia*), a California species of special concern, may occur on the project site as an occasional nonbreeding winter resident or dispersant. While burrowing owls are not expected to breed in the project vicinity, they may forage on the site, and nonbreeding individuals could potentially roost in ground squirrel burrows on the project site during migration and winter.

## 4.3 Sensitive Natural Communities, Vegetation Alliances, and Habitats

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program in 1979. The CDFW determines the level of rarity and imperilment of vegetation types, and tracks sensitive communities in its Rarefind database (CNDDB 2024). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings are a reflection of the condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage program methodology as follows (Faber-Langendoen et al. 2012):

G1/S1: Critically imperiled

G2/S2: Imperiled

G3/S3: Vulnerable.

G4/S4: Apparently secure

G5/S4: Secure

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (CDFW 2022). If an alliance is marked G1-G3, all of the vegetation associations within it will also be of high priority (CDFW 2022). The CDFW provides VegCAMP's currently accepted list of vegetation alliances and associations (CDFW 2022).

Impacts on CDFW sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, are typically considered and evaluated under the California Environmental Quality Act (Title 14, Division 6, Chapter 3, Appendix G of the California Code of Regulations). Furthermore, aquatic, wetland and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS.

### 4.3.1 Sensitive Natural Communities

A query of sensitive habitats in the CNDDB (CDFW 2022) identified three sensitive natural communities as occurring within the nine 7.5-minute USGS quadrangles containing or surrounding the project site: serpentine bunchgrass (Rank G2/S2.2), sycamore alluvial woodland (Rank G1/S1.1), and northern coastal salt marsh (Rank G3/S3.2),. Serpentine bunchgrass grassland within the project site meets the definition of the *serpentine bunchgrass* natural community type, which is described as an open grassland dominated by perennial bunchgrasses (Holland 1986). No other sensitive natural communities are present on the project site.

### 4.3.2 Sensitive Vegetation Alliances

Non-serpentine bunchgrass grassland on the project site likely qualifies as the "*Nassella pulchra* – *Avena* spp. – *Bromus* spp." Alliance (41.150.05). This alliance is ranked as G3/S3? (CDFW 2022) and is therefore ranked as apparently secure at the globally and statewide level (CDFW 2022), with some uncertainty on the statewide ranking. While this alliance is not considered a sensitive vegetation alliance by this definition, it is still tracked by the CNDDB and considered a sensitive alliance by the CDFW in VegCAMP (CDFW 2022).

### 4.3.3 CDFW Riparian Habitat

Due to its rarity and disproportionately high habitat values and functions to wildlife, the CDFW considers riparian habitat to be sensitive. However, no riparian habitat is present on the project site.

### 4.3.4 Waters of the U.S./State

Wetlands or other waters of the U.S./state do not occur on the project site. Hydrophytic vegetation, including water beard grass (*Polypogon viridis*) and tall flatsedge (*Cyperus eragrostis*), was observed near a structure outside the project site within the WTP facility (37.39772, -121.83471). However, the area was less than 2 square feet

in size, and this vegetation was apparently supported by a water leak. Therefore, we do not consider this area to constitute waters of the U.S. or waters of the state.

### 4.3.5 Nonnative and Invasive Species

Many nonnative, invasive plant species occur on the project site. Species with a "high" invasive rating by the Cal-IPC have the potential to cause severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment, and most are widely distributed ecologically (Cal-IPC 2024). On the project site, red brome, a species with a "high" rating, was observed.

Ten species observed on the project site have a "moderate" rating by Cal-IPC, indicating that they have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure, and that their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment would be generally dependent upon ecological disturbance (Cal-IPC 2024). These species include tall sock-destroyer (*Torilis arvensis*), bull thistle, artichoke (*Cynara cardunculus*), wild oat, ripgut brome, rattail sixweeks grass (*Festuca myuros*), Italian rye grass, wall barley, fountain grass (*Pennisetum* sp.), and Harding grass.

Ten other species observed on the project site have a "limited" invasive rating, indicating that they are invasive by their ecological impact are minor on a statewide level (Cal IPC 2024). These species include pepper tree (*Schinus molle* and *Schinus terebinthifolius*), bristly ox-tongue (*Helminthotheca echinoides*), smooth cat's-ear (*Hypochaeris glabra*), milk thistle, blackwood acacia (*Acacia melanoxylon*), redstem filaree, Canary Island palm (*Phoenix canariensis*), annual beard grass (*Polypogon monspeliensis*), and smilo grass (*Stipa milacea*).

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# Appendix A. Special-Status Plants Considered but Rejected for Occurrence

| Common Name | Scientific Name | No Suitable Habitat | Edaphic Conditions Absent | Outside the Elevation Range | Outside of Known Geographic Range/No Nearby Extant Records | Not Observed during Appropriately-Timed Survey |
|---|---|---|---|---|---|---|
| *Acanthomintha lanceolata* | Santa Clara thorn-mint | X | | | | |
| *Amsinckia lunaris* | bent-flowered fiddleneck | | | | | X |
| *Androsace elongata ssp. acuta* | California androsace | | | | X | |
| *Astragalus tener var. tener* | alkali milk-vetch | X | X | X | | |
| *Atriplex depressa* | brittlescale | | X | | | |
| *Atriplex minuscula* | lesser saltscale | | X | | | |
| *Balsamorhiza macrolepis* | big-scale balsamroot | | | | | |
| *Boechera rubicundula* | Mt. Day rockcress | X | | X | | |
| *Calandrinia breweri* | Brewer's calandrinia | X | | | | |
| *Calochortus umbellatus* | Oakland star-tulip | | | | | |
| *Calyptridium parryi var. hesseae* | Santa Cruz Mountains pussypaws | X | | X | | |
| *Calystegia collina ssp. venusta* | South Coast Range morning-glory | | | X | | |
| *Castilleja affinis var. neglecta* | Tiburon paintbrush | | | | X | |
| *Castilleja rubicundula var. rubicundula* | pink creamsacs | | | | X | |
| *Ceanothus ferrisiae* | Coyote ceanothus | | | | X | |
| *Centromadia parryi ssp. congdonii* | Congdon's tarplant | X | | | | |
| *Chlorogalum pomeridianum var. minus* | dwarf soaproot | | | X | | |
| *Chloropyron maritimum ssp. palustre* | Point Reyes salty bird's-beak | X | | X | | |
| *Chorizanthe douglasii* | Douglas' spineflower | X | | | | |
| *Chorizanthe robusta var. robusta* | robust spineflower | X | X | | X | |
| *Cirsium fontinale var. campylon* | Mt. Hamilton thistle | | X | | | |
| *Clarkia breweri* | Brewer's clarkia | X | | X | | |

| Common Name | Scientific Name | No Suitable Habitat | Edaphic Conditions Absent | Outside the Elevation Range | Outside of Known Geographic Range/No Nearby Extant Records | Not Observed during Appropriately-Timed Survey |
|---|---|---|---|---|---|---|
| *Clarkia concinna ssp. automixa* | Santa Clara red ribbons | X | | | | |
| *Clarkia lewisii* | Lewis' clarkia | X | | | | |
| *Collinsia multicolor* | San Francisco collinsia | X | | | | |
| *Convolvulus simulans* | small-flowered morning-glory | | X | | | |
| *Dirca occidentalis* | western leatherwood | X | X | | | |
| *Dudleya abramsii ssp. setchellii* | Santa Clara Valley dudleya | | X | | | |
| *Eleocharis parvula* | small spikerush | X | | | | |
| *Eriogonum argillosum* | clay buckwheat | X | | | | |
| *Eriogonum umbellatum var. bahiiforme* | bay buckwheat | X | X | X | | |
| *Eriophyllum jepsonii* | Jepson's woolly sunflower | X | | X | | |
| *Eryngium aristulatum var. hooveri* | Hoover's button-celery | X | | X | | |
| *Erysimum franciscanum* | San Francisco wallflower | | | | | X |
| *Extriplex joaquinana* | San Joaquin spearscale | | X | | | |
| *Fritillaria liliacea* | fragrant fritillary | | | | | |
| *Galium andrewsii ssp. gatense* | phlox-leaf serpentine bedstraw | X | X | | | |
| *Grindelia hirsutula var. maritima* | San Francisco gumplant | | X | | | |
| *Hoita strobilina* | Loma Prieta hoita | X | | | | |
| *Iris longipetala* | coast iris | X | X | | | |
| *Isocoma menziesii var. diabolica* | Satan's goldenbush | X | | | | |
| *Lasthenia conjugens* | Contra Costa goldfields | | X | | | |
| *Leptosiphon ambiguus* | serpentine leptosiphon | X | | | | |
| *Leptosiphon aureus* | bristly leptosiphon | X | | | | |
| *Leptosiphon grandiflorus* | large-flowered leptosiphon | | | | | X |
| *Leptosyne hamiltonii* | Mt. Hamilton coreopsis | X | | X | | |
| *Lessingia hololeuca* | woolly-headed lessingia | | X | | | |

| Common Name | Scientific Name | No Suitable Habitat | Edaphic Conditions Absent | Outside the Elevation Range | Outside of Known Geographic Range/No Nearby Extant Records | Not Observed during Appropriately-Timed Survey |
|---|---|---|---|---|---|---|
| *Lessingia micradenia var. glabrata* | smooth lessingia | | X | | | |
| *Lessingia tenuis* | spring lessingia | X | | X | | |
| *Lomatium observatorium* | Mt. Hamilton lomatium | X | | X | | |
| *Lomatium parvifolium* | small-leaved lomatium | X | | | | |
| *Malacothamnus arcuatus var. arcuatus* | arcuate bushmallow | X | | | | |
| *Malacothamnus hallii* | Hall's bushmallow | X | | | | |
| *Mielichhoferia elongata* | elongate copper moss | X | | | | |
| *Monolopia gracilens* | woodland woollythreads | | | | | |
| *Navarretia prostrata* | prostrate vernal pool navarretia | X | X | | | |
| *Penstemon rattanii var. kleei* | Santa Cruz Mountains beardtongue | X | | X | | |
| *Phacelia phacelioides* | Mt. Diablo phacelia | X | | X | | |
| *Plagiobothrys chorisianus var. hickmanii* | Hickman's popcornflower | X | | | | |
| *Plagiobothrys glaber* | hairless popcornflower | X | | | | |
| *Puccinellia simplex* | California alkali grass | | X | | | |
| *Ravenella exigua* | chaparral harebell | X | | X | | |
| *Sagittaria sanfordii* | Sanford's arrowhead | X | | | | |
| *Sanicula saxatilis* | rock sanicle | | | X | | |
| *Senecio aphanactis* | chaparral ragwort | X | X | | | |
| *Sidalcea malachroides* | maple-leaved checkerbloom | X | | | | |
| *Streptanthus albidus ssp. albidus* | Metcalf Canyon jewelflower | | | | | X |
| *Streptanthus albidus ssp. peramoenus* | most beautiful jewelflower | | | | | X |
| *Suaeda californica* | California seablite | X | | X | | |
| *Trifolium hydrophilum* | saline clover | X | | | | |

# APPENDIX D

## Geotechnical Investigation Report

# RESIDUALS MANAGEMENT PROJECT
# PENITENCIA WATER TREATMENT PLANT
SAN JOSE, CALIFORNIA

## GEOTECHNICAL REPORT FOR FINAL DESIGN

DRAFT

SUBMITTED TO
Stantec Consulting Services, Inc.
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597

PREPARED BY
ENGEO Incorporated

April 29, 2024

PROJECT NO.
19990.000.001

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ENGEO
Expect Excellence

Project No.
**19990.000.001**

April 29, 2024

Mr. Kurt Condie, PE
Stantec Consulting Services, Inc.
1340 Treat Boulevard, Suite 300
Walnut Creek, CA 94597

Subject: Residuals Management Project
Penitencia Water Treatment Plant
San Jose, California

## GEOTECHNICAL REPORT FOR FINAL DESIGN

Dear Mr. Condie:

We have prepared this geotechnical report for the use of Stantec Consulting Services, Inc. (Stantec) and Valley Water, as outlined in our subconsultant agreement dated January 18, 2024. The purpose of this report is to provide geotechnical recommendations to support the final design of the Residuals Management Project (RMP) at Valley Water's Penitencia Water Treatment Plant (PWTP).

The recommendations provided in this report are based upon our review of existing available published geotechnical and geological information and data, including a site-specific geotechnical exploration at the RMP project site performed by Kleinfelder in August 2023, and previous geotechnical reports for various past PWTP projects provided by Stantec.

From a geotechnical engineering viewpoint, the site is suitable for the proposed structures, provided that the recommendations contained in this report are incorporated into the project design and implemented during construction.

Please contact us if you have any questions or comments regarding this report.

Sincerely,

ENGEO Incorporated

Siobhan O'Reilly-Shah, PE

Joseph N. Seibold, GE

sos/jns/nn/ar

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# LIST OF ABBREVIATIONS AND ACRONYMS

## Projects, Reports, and Facilities

| | |
|---|---|
| PWTP | Penitencia Water Treatment Plant |
| RMP | Residuals Management Project |
| RMF | Residuals Management Facility |
| WRF | Washwater Recovery Facility |

## Units of Measurement

| | |
|---|---|
| g | gravitational acceleration (32.1 ft/s$^2$) |
| ksf | kips per square foot |
| pcf | pounds per cubic foot |
| pci | pounds per cubic inch |
| psf | pounds per square foot |

## Common Engineering Terms

| | |
|---|---|
| bgs | Below Ground Surface |
| CLSM | Controlled Low Strength Material |
| GW | Groundwater |
| PGA | Peak Ground Acceleration |
| MCE | Maximum Considered Earthquake |

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# 1.0 INTRODUCTION

## 1.1 PURPOSE AND SCOPE

This geotechnical report presents our geologic and geotechnical interpretations, analyses, and recommendations to support the final design of the Residuals Management Project (RMP) at the Santa Clara Valley Water District's (Valley Water's) Penitencia Water Treatment Plant (PWTP) in San Jose, California. Our scope was carried out as outlined under Task 9.1.6 of our agreement dated January 18, 2024. The RMP will comprise the demolition or improvement of select existing structures and construction of new residuals management structures and facilities.

For the preparation of this geotechnical report, as outlined in our agreement, we were authorized to conduct the following scope of services.

- Review plans, aerial photographs, geologic maps, and other available historical information
- Review available relevant previous geotechnical exploration reports
- Analyze and interpret geological and geotechnical data
- Report our findings, conclusions, and geotechnical design recommendations

This report was prepared for the exclusive use of Stantec and their consultants for the design of this project. If any changes are made to the character, design, or layout of the project, we should be contacted to review the conclusions and recommendations contained in this report to evaluate whether modifications are .

## 1.2 PROJECT LOCATION AND DESCRIPTION

The PWTP is located south of Suncrest Avenue near the toe of the east foothills of San Jose, California, as shown in Figure 1 - Vicinity Map, The RMP includes a proposed Residuals Management Facility (RMF) and a proposed Washwater Recovery Facility (WRF) at two existing basin sites along the southwestern edge of the PWTP. The RMP is one component of Valley Water's planned treatment modifications to the PWTP aimed at meeting increasing population demands, extend the useful life of the plant, improve treatment efficiency, improve reliability, and reduce risk of discharge violations. The RMP includes demolition of select existing facilities, including sludge holding ponds, washwater recovery ponds, belt press building, and other sludge management facilities, and construction of new residual management structures, piping, access roads, and other appurtenant facilities. The currently proposed layout of the planned residuals management improvements is shown in Figure 2 - Site Plan. Elevations referenced in this report are with respect to the NAVD88 datum, as described in Section 1.3.

Per our discussions with the design team and our review of the 30 percent plans and details provided to us, our focus in this geotechnical report is the design and construction of the following planned RMP structures and facilities.

- Sludge Storage Tanks – Two 45-foot-diameter below-grade sludge storage tanks are planned within the western footprint of the existing sludge holding ponds (that will be decommissioned and demolished). The bottom elevations of the concrete tanks are planned to range from approximately Elevation 377 feet at the outer perimeter of the tanks to Elevation 372 feet at the tank center sumps.

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- Centrifuge Building, Solids Load-Out Structure, and Sludge Transfer Pump Station – These near-grade structures are planned within the center of the existing sludge holding ponds (that will be decommissioned and demolished). The centrifuge building is planned to be three-stories with the solids load-out structure as an attached canopy structure, and the adjacent sludge transfer pump station is a one-story structure.
- Gravity Thickener Tanks – Two 54-foot-diameter below-grade gravity thickener tanks are planned within the eastern footprint of the existing sludge ponds (that will be decommissioned). The bottom elevations of the gravity thickener tanks are planned to range from approximately Elevation 376 feet at the outside of the structures to Elevation 366 feet at the center.
- Washwater Flocculation/Sedimentation Basins – The below-grade washwater flocculation/sedimentation basin facility is planned as a series of rectangular tanks constructed within the footprint of the existing western washwater recovery pond (that will be decommissioned). The bottom elevation is approximately Elevation 374 feet.
- Washwater Equalization Basins and Pump Station – The washwater equalization basins and pump station facility is planned as a series of rectangular tanks constructed footprint of the existing eastern washwater recovery pond (that will be decommissioned). The bottom elevation ranges from approximately Elevation 368 to Elevation 364 feet.
- Appurtenant Facilities - Includes the electrical building, decant pump station, centrifuge wet well, pipe vaults, and distribution structures.
- Yard Piping - Several new large-diameter pipelines will traverse the RMP project site connecting wastewater streams.
- Site Access Roads - The RMP project will include paved roadways to provide access to, and around, the new treatment facilities.

### 1.3 ELEVATION DATUM

The elevation datum used for this project is the North American Vertical Datum of 1988 (NAVD88). Elevations in this report refer to this datum unless otherwise noted.

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# 2.0 GEOTECHNICAL EXPLORATIONS AND TESTING

## 2.1 SITE-SPECIFIC FIELD EXPLORATION AND LABORATORY TESTING

Kleinfelder was retained by Valley Water to collect geotechnical data for the RMP project site at PWTP. They performed 11 borings (of 12 planned borings, one of which was obstructed) at the site between August 17 and 23, 2023, using hollow-stem auger drilling method. The borings were drilled to depths ranging between approximately 48½ to 50 feet below existing grade. The locations of Kleinfelder's exploratory borings are shown in Figure 2 - Site Plan. The data from that exploration is presented in the following report.

- Kleinfelder. 2023. Geotechnical Investigation Report, Penitencia Water Treatment Plant, Residuals Management Project, 3959 Whitman Way, San Jose, California. December 12, 2023.

A summary of the recent RMP project-specific explorations is shown in Table 2.1-1. The boring logs for these explorations are included in Appendix A.

**TABLE 2.1-1: Summary of 2023 Project-Specific Subsurface Explorations**

| BORING ID | COMPANY | TYPE | DATE | GROUND SURFACE ELEVATION (feet) | DEPTH OF EXPLORATION (feet) | GROUNDWATER DEPTH (feet) |
|---|---|---|---|---|---|---|
| KB-1 | Kleinfelder | HSA | 8/22/2023 | 389 | 50 | NE |
| KB-2 | Kleinfelder | HSA | 8/23/2023 | 388 | 50 | NE |
| KB-4 | Kleinfelder | HSA | 8/18/2023 | 386 | 50 | NE |
| KB-5 | Kleinfelder | HSA | 8/17/2023 | 387 | 50 | NE |
| KB-6 | Kleinfelder | HSA | 8/17/2023 | 387 | 50 | NE |
| KB-7 | Kleinfelder | HSA | 8/22/2023 | 388 | 50 | NE |
| KB-8 | Kleinfelder | HSA | 8/15/2023 | 386 | 48½ | NE |
| KB-9 | Kleinfelder | HSA | 8/16/2023 | 387 | 50 | NE |
| KB-10 | Kleinfelder | HSA | 8/23/2023 | 387 | 50 | NE |
| KB-11 | Kleinfelder | HSA | 8/16/2023 | 387 | 50 | NE |
| KB-12 | Kleinfelder | HSA | 8/21/2023 | 387 | 50 | NE |

*Notes: NE = not encountered; HSA = hollow-stem auger*
*KB-3 not drilled due to obstruction.*

Kleinfelder performed laboratory tests shown in Table 2.1-2 on select soil samples to evaluate their engineering index properties. The laboratory test results from their 2023 exploration are included in Appendix B.

**TABLE 2.1-2: Laboratory Testing**

| TEST | DESIGNATION |
|---|---|
| Moisture Content and Unit Weight | ASTM D7263 |
| Determination of Moisture Content Only | ASTM D2216 |
| Amount of Material in Soil Finer than No. 200 Sieve | ASTM D1140 |
| Particle-Size Analysis of Soil | ASTM D422 |
| Atterberg Limits | ASTM D4318 |

## 2.2 REVIEW OF PREVIOUS INVESTIGATIONS

We reviewed available published geologic reports by the California Geological Survey (CGS) and U.S. Geological Survey (USGS), as well as geotechnical reports prepared for previous work at the PWTP. The previous reports containing geotechnical information and data that we used for developing geotechnical design recommendations for the RMP are listed below.

- Lettis Consultants International, Inc. (LCI). 2015. Characterization of the Penitencia Creek Landslide Deformation models for the Penitencia Delivery Main and Penitencia Force Main Retrofit Project, San Jose, California. November 10, 2015.
- LCI/Cal Engineering and Geology (CE&G). 2015. Revised Landslide Displacement Estimated for the Penitencia Delivery Main and Penitencia Force Main Seismic Retrofit Project, San Jose, California: Technical Memorandum; April 9, 2015.
- CE&G. 2015. Geotechnical Design Report – Prepared for Carollo Engineers and Santa Clara Valley Water District in Support of the Penitencia Delivery Main and Penitencia Force Main Retrofit Project. July 10, 2015, Revised November 9, 2015.
- LCI/CE&G. 2014. Technical Memorandum – Landslide and Seismic Hazards Evaluation of the Penitencia Creek Landslide, Santa Clara County, California. June 24, 2014.

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- Harza Consulting Engineers and Scientists. 2000. Geotechnical Investigation, SCVWD Treated Water Improvement Project – Stage 2, Penitencia Water Treatment Plant (WTP). November 3, 2000.
- CH2M Hill. 1987. Geotechnical Exploration, Santa Clara Valley Water District Sludge Dewatering Project, Penitencia Water Treatment Plant, San Jose, California. December 1987.

The series of 2014/2015 reports prepared by LCI and CG&E provide the most up-to-date characterization of the Penitencia Creek Landslide (PCL), including seismic-hazard evaluation to estimate the behavior of the PCL over the next 50 years. These reports focus on an area within the PWTP traversed by several major pipelines (including a delivery main, force main, and the south bay aqueduct) that span from the western landslide toe near the penvault up to the finished water meter, which is near the center of the proposed RMP project site. The findings and displacement predictions from these reports are further discussed in Section 3.3.

The Geotechnical Report prepared by Harza (2000) was in support of the now completed sulfuric acid, ozone generation, ozone contactor/destruct, hydrogen peroxide/ozone quenching, and liquid oxygen facilities. To support the design of these structures, Harza performed three hollow-stem auger (HSA) borings and two cone penetration tests (CPTs). Their report also included select borings from the following historic explorations at the project site: Harza (1998), Woodward Clyde (1993), Dames & Moore (1971), and Robert S. Cooper (1964).

The Geotechnical Report prepared by CH2M Hill (1987) was in support of the now existing belt press facility and neat polymer tank. The explorations performed for that study included four HSA borings. The CH2M Hill report provided a discussion of the existing landslide, as well as recommendations for mat slabs and conventional foundations.

Relevant borings from the past subsurface explorations cited above are shown in the Site Plan, Figure 2. The most relevant borings in the vicinity of the proposed RMP sites are summarized in Table 2.2-1. The previous exploration logs are included in Appendix C, and data from laboratory tests are included in Appendix D.

**TABLE 2.2-1: Summary of Relevant Previous Subsurface Explorations**

| BORING ID | COMPANY | TYPE | DATE | GROUND SURFACE ELEVATION (feet) | DEPTH OF EXPLORATION (feet) | GROUNDWATER DEPTH (feet) |
|---|---|---|---|---|---|---|
| BH-8 | CE&G | HSA | 11/11/2014 | 382 | 30 | NE |
| BH-9 | CE&G | HSA | 11/12/2014 | 393 | 40½ | 30½ |
| B-1 | CH2M Hill | HSA | 9/8/1987 | 390 | 31½ | NM |
| B-2 | CH2M Hill | HSA | 9/8/1987 | 400 | 31½ | NM |
| B-3 | CH2M Hill | HSA | 9/8/1987 | 390 | 21½ | NM |
| B-4 | CH2M Hill | HSA | 9/8/1987 | 400 | 21½ | NM |
| EB-1 | Harza | HSA | 5/17/2000 | 391 | 50 | 23 |
| EB-2 | Harza | HSA | 5/17/2000 | 395 | 50 | NM |
| CPT-1 | Harza | CPT | 7/14/2000 | 400 | 65 | NR |
| B-10 | Robert S. Cooper | NR | 1964 | 409 | 45 | NR |
| B-11 | Robert S. Cooper | NR | 1964 | NR | 22 | NR |

*Notes: GW = groundwater, NE = not encountered, NM = not measured, NR= not reported, HSA = hollow-stem auger, CPT = cone penetration test*

The ground surface elevations listed for the borings in Table 2.2-1 above are as reported in the reviewed geotechnical reports, and the datum used was not specified in the reports.

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# 3.0 SITE CONDITIONS

## 3.1 REGIONAL GEOLOGY

The PWTP is situated on the eastern margin of the Santa Clara Valley, just west of the Hayward fault on the western flanks of the Diablo range, which lies within the Coast Ranges geomorphic province. The Coast Ranges comprise a system of northwest-trending, fault-bounded mountain ranges and intervening valleys that trend approximately parallel to the right-lateral transform boundary between the North American and Pacific Plates. Bedrock in the Coast Ranges consists of igneous, metamorphic, and sedimentary rocks that range in age from Jurassic to Pleistocene. Bedrock is overlain by Quaternary deposits that consist of the alluvial, fluvial, lacustrine, and eolian sediments that fill the Santa Clara Valley. Regional geologic mapping indicates the site is underlain by landslide deposits (Qls) associated with a large landslide complex (Wentworth et al, 1999), as shown in the Regional Geologic Map, Figure 3.

## 3.2 SEISMICITY

The site is located in a seismically active area of Northern California that contains numerous active faults. Small earthquakes occur every year in the San Francisco Bay and Santa Clara Valley region and larger earthquakes have been recorded and can be expected to occur in the future. Faults have been cataloged and mapped by the United States Geological Survey (USGS) in the Quaternary Fault and Fold Database of the United States. An active fault is defined by the California Geologic Survey as one that experienced surface displacement within Holocene time (about the last 11,700 years) (CGS, 2018). In Figure 4 - Regional Faulting and Seismicity Map, we show the approximate locations of known active faults, along with other Quaternary faults, based on the USGS Quaternary Fault and Fold Database, as well as significant historical earthquakes recorded within San Francisco Bay Region.

The 2015 Working Group on California Earthquake Probabilities evaluated the 30-year probability of a Moment Magnitude 6.7 or greater earthquake occurring on the known active fault systems in the Bay Area as part of the Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3), The UCERF3 model estimates an overall probability of 72 percent for the Bay Area as a whole, and a probability of 14.3 percent for the Hayward fault and 7.4 percent for the Calaveras fault.

Based on the historic seismicity, the proximity of known active faults, and the estimated earthquake probabilities for the Bay Area, it is our opinion that the site should be expected to experience strong seismic ground shaking during the service lifetime of the proposed RMP improvements. To characterize the seismic hazard at the proposed RMP site, we performed a site-specific seismic-hazard analysis, which is presented in Appendix E. The 1,000 highest probability fault sources from the UCERF3 contributing to the hazard deaggregations are also provided in Appendix E.

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## 3.3 PENITENCIA CREEK LANDSLIDE

The entire PWTP is located within the large and deep-seated Penitencia Creek Landslide (PCL). The PCL occupies about 240 acres at the base of the eastern foothills of the Santa Clara Valley. According to the Landslide Inventory Map of the Calaveras Reservoir Quadrangle (2011), the PCL is indicated as “active or historic” and the confidence of interpretation is classified as “definite.” The site is also located in an area of earthquake-induced landslides according to the State of California Seismic Zones Map dated October 17, 2001, as shown in Figure 5 - Seismic Hazards Zone Map. Ongoing creep movement of the PCL has been monitored as early as 1972, when the Department of Water Resources (DWR) installed survey markers to monitor surface ground movement. In the early 1970s, Valley Water also installed an initial series of 6 inclinometers and 12 piezometers in areas of the PCL where ground instability was evident. By 1975, Valley Water identified the need for a more extensive long-term monitoring program when the original 6 inclinometers had already sheared and could no longer be used. Since that time, Valley Water has installed extensive instrumentation to monitor movement of the PCL, including inclinometers, piezometers, and electronic distance measurement (EDM) points. Over the years, new instrumentation has been added to replace instruments that have been monitored through their service life, and to gather more focused information to aid in the retrofit and/or replacement of plant facilities that have been impacted by the PCL movement.

A seismic-hazard evaluation of the deep-seated landslide was not included in the scope of this report. Our assessment of the landslide’s impact on the proposed project is based on review of: (1) the latest (2016) and historical PCL surveillance reports and (2) landslide and seismic-hazard evaluations of the PCL performed in 2014/2015 by Lettis Consultants International, Inc. (LCI) and Cal Engineering & Geology (CEG). These reports provide extensive and detailed information regarding the instrumentation, monitoring, and surveillance findings of historical movement of the PCL within the PWTP and predicted future PCL movement from continuous creep and potential seismic triggering. Our assessment aims at presenting findings from these studies that best characterizes the ongoing creep movement, future creep movement, and potential seismically induced movement of the PCL at the planned RMP project site. A more extensive characterization of the overall PWTP movement within the PCL can be found in the referenced surveillance reports and landslide studies.

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### 3.3.1 Landslide Creep Movement

The Santa Clara Valley Water District (Valley Water) has performed surveillance monitoring of long-term creep movement of the PCL dating back to 1972, when 6 inclinometers and 12 piezometers were installed to monitor movement around the planned future treatment plant. Over time, additional inclinometers, piezometers, and other monitoring instrumentation (survey monuments, electronic distance measurement (EDM) monuments, time domain reflectometry, etc.) have been installed and monitored. The monitoring data has been compiled, summarized, and analyzed in a series of surveillance reports published between 2001 and as recent as 2016.

The 2016 surveillance report indicates that landslide movement and groundwater piezometric data remain generally consistent with previous surveillance reports. The 2016 report also includes data from new survey monuments installed in 2012 to add focused monitoring near the toe of the PCL in the vicinity of the plant delivery main, force main, and associated penvault, overflow bypass structure (OFBS), and finished water meter vault (FWMV). PCL movement at the FWMV is of particular interest to the RMP because it is located near the center of the proposed RMF and WRF sites.

Utilizing data from the surveillance reports and other available geotechnical and geological data, Lettis Consultants International (LCI) and Cal Engineering & Geology (CE&G) performed a Landslide and Seismic Hazards Evaluation of the PCL in 2014, with subsequent technical memorandums providing revisions and updates in 2015. Key findings from these studies, as they pertain to the anticipated creep movement of the PCL in the vicinity of the proposed RMP site over the next 50 years (2014-2064), are summarized below.

- Direction of PCL Movement – The PCL moves in a general southwest direction at an azimuth of 220 degrees (i.e., South-40 degrees-West), plus-or-minus 20 degrees.
- Rate of Landslide Creep Displacement – The rate of movement at the FWMV (i.e., planned RMP site) appears to be less than the average rate of movement of the larger PCL landslide mass.
- Magnitude of PCL Creep Movement – Based on past monitored creep movement of the PCL, about 12 inches of creep movement is anticipated to occur at the FWMV (i.e., planned RMP site) over a 50-year period.

### 3.3.2 Seismic-Landslide Movement

In addition to the ongoing (and relatively steady state) creep movement of the PCL discussed above, the PCL may also potentially undergo larger displacements related to a singular seismic event on one of the nearby active faults discussed in our seismic-hazards analysis presented in Appendix E. The magnitude of the seismic-landslide displacement is generally related to the intensity of the seismic event (e.g., earthquake magnitude, site-to-source distance, duration, peak ground acceleration, Arias Intensity, etc.) and is typically quantified in relation to seismic events with a specific probability of occurrence over a 50-year period.

A landslide seismic-hazards analysis of the PCL was performed by Lettis Consultants International (LCI) and Cal Engineering & Geology (CE&G) in 2014, with subsequent technical memorandums providing updates in 2015. These studies were performed to predict seismically induced landslide movements to establish design objectives for retrofit of existing PWTP pipelines between the landslide toe and the finish water meter vault (FWMV). As previously discussed, landslide movement at the FWMV is of particular interest for the RMP since it is located between the proposed RMF and WRF sites. While previous studies have also been performed (e.g., WCC, 1993; T&R, 2011) the 2014 LCI/CEG study (with 2015 revisions) provide the most up-to-date landslide hazard analysis that utilizes updated seismic-hazard maps and focuses on PCL movement in the vicinity of the proposed RMP site.

The 2014 LCI/CEG study included deaggregation of the 2008 United States Geological Survey (USGS) seismic-hazard maps (via the online USGS Unified Hazard Tool) to estimate peak ground accelerations for 10 percent in 50-year probability of exceedance (475-year return period) and 5 percent in 50-year probability of exceedance (975-year return period) seismic events. The study also considered the PGA associated with the 84$^{th}$ percentile deterministic seismic event for a hypothetical magnitude M 7.0 earthquake on the nearby Hayward Fault. These PGAs were used to scale select ground motion time-history records for landslide displacement hazard analysis (LDHA). The scaled time histories were utilized for performing both simplified “Newmark-type” sliding block analyses (based on Bray and Travasarou, 2007, and Jibson and Jibson, 2003), and more rigorous two-dimensional finite element analysis using GeoStudio modeling software developed by Geo-Slope International, Inc. A detailed description of the time history selection and scaling, the modeled PCL geometry, model calibrations, soil dynamic properties, etc., are provided in the 2014 LCI/CE&G report.

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The study found that both simplified Newmark-type methods substantially over-predicted landslide displacement in comparison to the historical events used for model calibration. The finite element analysis indicated highly varied displacements over the eight time histories evaluated, with total displacements ranging from about and 1 to 3 feet for the 475-year return period event and 1 to 4½ feet for the 975-year return period seismic event. The two 84$^{th}$ percentile scaled time histories representing the deterministic Hayward Fault M7.0 earthquake resulted in displacement ranging from about 2¼ to 5¾ feet. These displacement results represent an average total displacement that the PCL would move if it behaved as a singular intact block (which is not the true displacement behavior of the PCL). Further evaluation of the finite element strain vectors permitted the estimation of relative movements within the non-rigid landslide PCL mass. Based on evaluation of the strain vectors from the finite element analysis nodes, LCI/CEG estimated the range of PCL movements at the FWMV location as summarized in the following Table 3.3.2-1, which includes the total combined displacements by adding the range of creep movement discussed in Section 3.3.1.

**TABLE 3.3.2-1: Summary of LCI/CEG 2014 LDHA at the FWMV Site**

| DESIGN EQ EVENT | PGA | NO. OF GROUND-MOTION RECORDS EVALUATED ESTIMATED | DISPLACEMENT RANGE AT FWMV SITE | ESTIMATED COMBINED CREEP+SEISMIC DISPLACEMENT |
|---|---|---|---|---|
| 5% Probability of Exceedance in 50 Years | 0.84g | 8 | 0.8 to 3.6 feet | 1.6 to 4.6 feet |
| 10% Probability of Exceedance in 50 Years | 0.70g | 8 | 0.8 to 2.5 feet | 1.6 to 3.5 feet |
| 84$^{th}$- Percentile Deterministic, Hayward Fault | 1.05g | 2 | 1.7 to 4.8 feet | 2.5 to 5.8 feet |

Based on the findings from their 2014 study, LCI/CEG recommended that the retrofit design of the PWTP pipelines consider up to 7.3 feet combined displacement at the PCL toe and up to 4 feet combined displacement at the FWMV (near the RMP site).

LCI/CEG updated their analysis in 2015 by incorporating the latest USGS 2014 National Seismic Hazard Mapping (NSHM) into the LDHA. The 2014 NSHM include two updates to the 2008 hazard maps that contributes to a higher seismic hazard at the PWTP: (1) development of a revised seismic source model for California called the Uniform California Earthquake Rupture Forecast (UCERF3) and (2) new NGA2-West ground-motion prediction equations (GMPEs). For the updated analysis, LCI/CE&G were provided with site-specific probabilistic seismic-hazards analysis (PSHA) data directly from the USGS, which included uniform horizontal response spectra (UHRS) and deaggregation information for the 5 precent in 50 years (975-year return period) probabilistic seismic event. The updated PSHA increased the ground shaking hazard at the site by 30 to 40 percent across the response spectrum, with the 975-year return period PGA increasing from 0.84g (as shown in Table 3.3.2-1) to 1.16 g. Using the increased PGA, LCI/CE&G selected a suite of 15 time history records that were reflective of the increased intensity of the shaking represented by the updated UHRS. A detailed discussion of the rationale for time history selecting, scaling, consideration of pulse-like characteristics, etc., are provided in the revised 2015 LCI/CE&G letter report. The findings of the 2015 revised LDHA for the 975-year return period seismic event in comparison to their 2014 LDHA is summarized in the following Table 3.3.2-2.

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**TABLE 3.3.2-2: Comparison of LCI/CEG 2015 Updated LDHA Results to 2014 LDHA Results**

| PARAMETER | 2014 LDHA | 2015 REVISED LDHA |
|---|---|---|
| Probabilistic Event | 5% Probability of Exceedance in 50 Years (975-year Return Period) | |
| Seismic-Hazard Map | 2008 Hazard Maps (UCERF2 Model) | 2014 NSHM (UCERF3 Model) |
| GMPE | NGA-West | NGA2-West |
| PGA | 0.84g | 1.16g |
| No. of Time Histories | 8 | 15 |
| Combined Displacement at PCL Toe (over 50 years) | 7.3 feet | 9.4 feet |
| Combined Displacement at the FWMV (over 50 years) | 4 feet | 3.1 feet |

Note in Table 3.3.2-2 that, although the 2015 revised study evaluated the effects of the increased ground shaking intensity associated with the updated seismic-hazard maps and GMPEs, the 2015 revised estimate of combined displacement at the FWMV is lower than in the 2014 study. LCI/CE&G reports this as the result of a more detailed re-evaluation of the finite element nodes in the 2015 study.

Table 3.3.2-2 also indicates that there will be considerable differential movement between the FWMV and the toe of the PCL in the form of ground extension (i.e., pulling apart). When considering only the estimated seismic displacements, the differential movement between the FWMV and the PCL toe is approximately 0.5 percent, or about ½ foot of ground extension per 100 linear feet (in the azimuth direction of overall movement). Although the LCI/CE&G analysis considers the alignment between the FWMV and toe of PCL, it is reasonable to assume that the differential ground extension would also propagate through the proposed RMP site. Considering the width and orientation of the proposed RMP site, we estimate that about 6 inches of differential ground movement, in the form of ground extension (pulling apart), can occur across the site.

The magnitude and orientation of the estimated PCL creep movement and potential seismically induced landslide displacement near the planned RMP site is illustrated in the following Exhibit 3.3.2-1.

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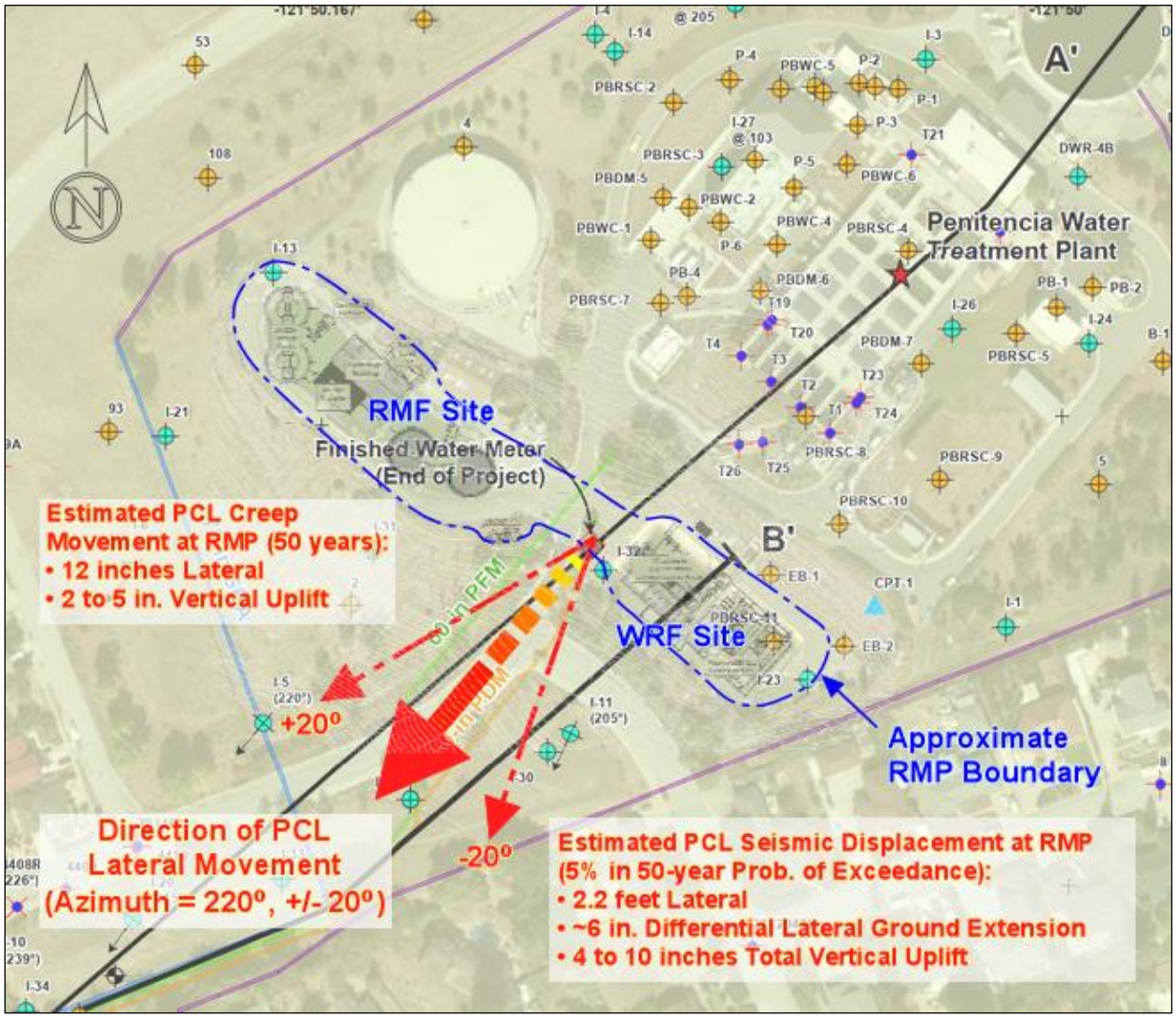
**EXHIBIT 3.3.2-1: Orientation and Magnitude of PCL Creep Movement and Seismically Induced Landslide Movement at Finished Water Meter Vault (FWMV)**




*(Base Map Reference: LCI/CEG, 2014)*

## 3.4 EXISTING STRUCTURES AND SURFACE CONDITIONS

The proposed RMP will consist of the new RMF and WRF to be constructed within an area of the PTWP currently occupied by the existing residuals management and washwater recovery facilities.

The proposed RMF will be situated along the southwestern edge of the PWTP in an area currently occupied by the existing sludge drying beds, the belt press facility with adjoining polymer tank, sludge blending and neat polymer facilities, and surrounding paved access ways. From our review of the as-built plans, we understand that the drying beds are approximately 6 feet deep relative to the surrounding pavement. Site grades are generally flat in this area, at Elevation 394 feet. To the southwest of the RMF, the PWTP site continues to slope downward at a grade of approximately 6:1 (horizontal:vertical), and to the northeast of the RMF, surface grades increase by approximately 10 feet at a 3:1 slope.

The proposed WRF is located on the southwestern edge of the PWTP (southeast of the RMF) in an area currently occupied by two existing washwater recovery ponds and surrounding paved access roadways. From our review of the as-built plans, the washwater recovery ponds are approximately 12 feet deep, relative to the surrounding pavement. Around the pond perimeters, site grades are generally flat, at Elevation 394 feet. To the southwest, the PWTP site continues to slope downward at a grade of approximately 5:1, and to the northeast, grades increase at a 3½:1 slope.

## 3.5 SUBSURFACE CONDITIONS

We reviewed data from the 2023 project-specific exploration by Kleinfelder, as well as previous PWTP explorations performed by CE&G (2014), CH2M Hill (1987), Harza (2000), and Robert S. Cooper (1964) to inform our understanding of the subsurface conditions at the proposed RMF and WRF sites. These explorations reveal that within the upper 20 to 30 feet below ground surface, the RMF and WRF sites are underlain by predominantly very stiff fat and lean clay with varying amounts of sand and gravel. The fat clay encountered typically consists of the site fill that forms the embankments and bottoms of the existing basins and ponds at the site, while the lean clay forms the underlying native PCL landslide deposits. This upper clayey zone also includes intermittent and discontinuous layers and pockets of sandy soil that includes poorly graded sand and clayey sand with varying amounts of gravel. These sandy soil zones are typically about 5 feet thick, medium dense (with some loose pockets noted), fine-to-coarse grained, and dry to moist.

At depths greater than 20 feet below ground surface, extending to the maximum depths of exploration (approximately 65 feet bgs), the lean clay is interbedded with sandy soil layers that are thicker, more prevalent, and apparently more continuous than encountered in the upper 20 to 30 feet bgs. These deeper sandy layers consist of poorly graded sand and clayey sand with varying amount of gravel that are typically medium dense to dense, fine- to coarse-grained, and moist.

## 3.6 GROUNDWATER

Groundwater levels have been monitored at the PWTP since the 1970s as part of ongoing monitoring of the PCL. Various pneumatic piezometers (PP), open standpipe wells (OSW), and vibrating wire piezometers (VWP) have been installed and monitored over the years. In Table 3.6-1 we present groundwater data from these monitoring sources that are generally in the vicinity of the main water treatment structures at the PWTP. The locations of these monitoring points are shown in Figure 6 - Groundwater Monitoring Locations, and the points nearest to the RMF and WMP sites are shown in Figure 2 – Site Plan.

**TABLE 3.6-1: Historic Groundwater Monitoring Summary**

| ID | TYPE | MONITORING DATES | APPROXIMATE SURFACE ELEVATION (feet) | EQUILIBRATED GROUNDWATER ELEVATION (feet) | EQUILIBRATED GROUNDWATER DEPTH (feet) |
|---|---|---|---|---|---|
| P-1 | PP | 1972-1983 | 401 | 361-366 | 35-40 |
| P-16 | PP | 1986-2016 | 390 | 290-301 | 89-100 |
| P-17 | PP | 1986-2016 | 390 | 313-317 | 73-77 |
| P-18 | PP | 1986-2016 | 405 | 262-275 | 130-143 |
| P-19 | PP | 1986-2016 | 405 | 378-385 | 20-27 |
| OW-28 | OSW | 2002-2016 | 445 | 420-440 | 5-25 |

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| ID | TYPE | MONITORING DATES | APPROXIMATE SURFACE ELEVATION (feet) | EQUILIBRATED GROUNDWATER ELEVATION (feet) | EQUILIBRATED GROUNDWATER DEPTH (feet) |
|---|---|---|---|---|---|
| OW-29 | OSW | 2002-2016 | 415 | 390-410 | 5-25 |
| VWP-1 (1-30) | VWP | 2009-2016 | 382 | 255-258 | 124-127 |
| VWP-2 (1-30) | VWP | 2009-2016 | 382 | 318 | 64 |
| VWP-3 (1-30) | VWP | 2009-2016 | 382 | 332-347 | 35-50 |
| VWP-4 (1-31) | VWP | 2009-2016 | 375 | 234-240 | 135-141 |
| VWP-5 (1-31) | VWP | 2009-2016 | 375 | 325-340 | 35-50 |
| VWP-6 (1-31) | VWP | 2009-2016 | 375 | 372 | 3 |
| KB-4 | OSW | 2023 | 392 | NE | NE |
| KB-12 | OSW | 2023 | 392 | NE | NE |

*NE= not encountered*

The groundwater data presented in the above table indicates the presence of a deep zone of groundwater confined beneath the landslide slip surface. The groundwater within the PCL landslide mass appears to consist of multiple isolated perched aquifers rather than one large, continuous phreatic aquifer.

Based on information from Valley Water, we understand that groundwater intrusion has previously affected underground construction at the PWTP site. It is likely that these instances of groundwater intrusion resulted from perched and/or transient groundwater stored within more permeable sandy soil within the PCL mass. Consequently, dewatering for intermittent groundwater intrusion of below-grade excavations can be considered during construction of the RMP. Our dewatering considerations are further discussed in Section 6.5.

# 4.0 GEOTECHNICAL CONSTRAINTS AND GEOLOGIC HAZARDS

From a geotechnical engineering and engineering geology viewpoint, the site is suitable for the planned development; however, several geotechnical constraints and geologic hazards should be considered, assessed, and mitigated for the success of the project design. Key geologic hazards and geotechnical issues for the proposed project include:

- Highly to critically expansive soil.
- Strong ground motions at the site due to its proximity to major active faults.
- Lateral and vertical deformations associated with active landslide creep and potential seismically induced landslide displacements.

These geotechnical constraints and potential geologic hazards are further discussed in the following sections.

## 4.1 EXPANSIVE SOIL

As discussed in Section 3.5, expansive fat clay was encountered in explorations at the proposed RMF and WRF sites. Laboratory testing results indicate that the shallow soil at the project sites generally has a plasticity index between 22 and 47, which indicates highly to critically expansive clay may be present in the near-surface soil. Generally, a PI between 25 and 35 is considered highly expansive, and a PI above 35 is considered critically expansive.

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Expansive soil shrinks and swells when subjected to fluctuations in moisture content. Such soil movement may cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. We recommend mitigating building damage due to volume changes associated with expansive soil by underlaying shallow foundations with a layer of material having a low expansion potential. We further discuss expansive soil mitigation in Section 5.3. We also provide subgrade preparation recommendations for the expansive clay soil at the site in Section 5.2; the purpose of these recommendations is to reduce the swell potential of the clay by compacting the soil at a high moisture content.

## 4.2 SEISMIC HAZARDS

Potential seismic hazards resulting from a moderate to strong earthquake centered near the RMP site include surface fault rupture, ground shaking, liquefaction, lateral spreading, and seismically induced landsliding. The following sections present our assessment of these potential hazards and the level of risk they impose on the RMP.

### 4.2.1 Surface Fault Rupture

The proposed improvements at the PWTP are not mapped within the State of California Alquist-Priolo Earthquake Fault Zone and are not mapped within Santa Clara County (SCC) Fault Rupture Hazard Zone (SCC, 2015). Since there are no known active faults crossing the PWTP property, and the proposed RMP site is not located within an Earthquake Fault Special Study Zone, surface fault rupture hazard is considered very low.

### 4.2.2 Ground Shaking

An earthquake of moderate to high magnitude generated within the region could cause considerable ground shaking at the site, similar to that which has occurred in past major seismic events. To mitigate the shaking effects, structures should be designed using sound engineering judgment and the prescriptive requirements of the latest (2022) California Building Code (CBC), as a minimum.

Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead and live loads. The code-prescribed lateral forces are generally aimed at preventing building collapse and loss of life, but do not guarantee that structural damage will not occur in the event of a maximum magnitude earthquake. As such, the design of the proposed RMP structures for seismic resiliency should also consider the plant's post-earthquake performance objectives and level-of-service goals and accordingly develop site-specific ground-motions for appropriate design seismic events. Our site-specific seismic-hazard analysis for the RMP design is presented in Appendix E.

### 4.2.3 Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soil most susceptible to liquefaction is clean, loose, saturated, and uniformly graded fine-grained sand. Based on the findings of the 2023 site-specific subsurface exploration, the RMP site is underlain predominantly by stiff to very stiff cohesive soil (lean to fat clay) formed within the PCL mass. The borings also identify interbedded zones of granular soil ranging from medium dense to dense in consistency. This granular soil was typically logged as dry to moist and does not appear to lie within a zone of groundwater saturation. Furthermore, groundwater was not encountered in the upper 50 feet below ground surface in any of the 2023 exploratory borings for at the RMP site. Consequently, we consider the potential for liquefaction to occur at the RMP site to be very low.

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### 4.2.4 Lateral Spreading

Due to the generally stiff cohesive soil and unsaturated medium dense to dense granular soil beneath the RMP study area, and the absence of shallow groundwater, the potential for lateral spread is considered very low.

### 4.2.5 Seismically Induced Landsliding

As discussed in Section 3.3, the entire PWTP site is underlain by the existing deep-seated Penitencia Creek Landslide (PCL). Potential seismically induced displacements of the PCL triggered by probabilistic seismic events was evaluated by LCI and GE&G in 2014, with revised analysis performed in 2015 utilizing newly released USGS 2014 National Seismic Hazard Maps. The 2015 revised analysis estimates a geometric mean landslide displacement of 6.7 feet over the entire PCL slide mass underlying the PWTP. Further evaluation of the finite element nodes within the displacement model indicates that the landslide movement varies at different locations throughout the slide mass, and that movement at the RMP site (based on analysis at the existing Finish Water Meter Vault (FWMV)) are generally much less than the average movement. LCI/CE&G reports an estimated lateral displacement of 2.2 feet at the FWMV resulting from a PCL slide triggered by a 5 percent in 50 year (975-year return period) probabilistic seismic event. When combining the potential seismic displacement with the anticipated long-term creep of the PCL, LCI/CE&G reports a total estimated lateral displacement of 3.1 feet at the FWMV, and hence the proposed RMP site. The LCI/CE&G study did not quantitatively assess the vertical component of the landslide displacement but reported that the distribution of horizontal and vertical strains throughout the seismically displaced landslide mass agreed well with the characteristics of the ongoing horizontal and vertical creep movement presented in the 2011 PCL surveillance report (Nelson, 2011).

## 4.3 CORROSIVE SOIL

Harza (2000) and Kleinfelder (2023) performed corrosion testing as part of their studies near the planned RMP site. The results are summarized in Table 4.3-1.

**TABLE 4.3-1: Corrosion Potential Test Results**

| EXPLORATION ID | DEPTH (feet) | Redox (mV) | Ph | CHLORIDE (mg/kg) | SULFATE (mg/kg) | SULFIDE (mg/kg) | ELECTRICAL RESISTIVITY (ohms-cm) |
|---|---|---|---|---|---|---|---|
| EB-1 | 2 | 210 | 6.7 | -- | -- | ND | 820 |
| EB-2 | 14 | 250 | 7.8 | -- | -- | ND | 1,100 |
| KB-8 | 1 to 3 | 120 | 9.1 | ND | 19 | ND | 920-1000 |

*Notes: Non-Detect (ND)*

The 2022 CBC references the American Concrete Institute Manual, ACI 318-14 for structural concrete requirements. According to Table 19.3.1.1, this soil is categorized as S0 sulfate exposure class. Note that ASTM Test Method D4327 was used in lieu of the ACI designated sulfate test methods as it provides more repeatable test results. We recommend a corrosion consultant be retained if specific corrosion recommendations are desired for the project.

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# 5.0 EARTHWORK

Based on our understanding of the project, we anticipate that the main earthwork components for the construction of the proposed RMP facilities will include:

1. Site preparation, including demolition of the existing drying beds, ponds, and other facilities, as needed, and overexcavation and removal of any existing fill, soft subsoil, and or any other unsuitable material, if encountered.
2. Site grading, including backfilling of the existing ponds and any other excavation areas.
3. As-needed overexcavation of potentially expansive subgrade soil and replacement with compacted non-expansive fill.
4. Excavation of pipeline trenches, followed by placement of pipe bedding, pipe zone backfill, and trench backfill.

Our geotechnical considerations and recommendations for these earthwork aspects of the project are presented in the following sections.

## 5.1 SITE PREPARATION

Site preparation is expected to include the following activities.

- Decommission and demolition of existing drying beds and washwater recovery ponds
- Overexcavation of any subsoil from beneath the beds and ponds that may have been impacted by leakage of stored water (e.g. softened, loosened, etc.)
- Backfilling of beds and ponds, and overexcavations with compacted fill up to subgrade (for structures or paving)
- Demolition of other existing structures, utilities, pavement, etc., as needed, to prepare subgrade for new facilities

Any creation of holes during demolition of existing facilities or removal of subgrade soil should be backfilled with engineered fill (or controlled low strength material (CLSM) as an alternative). Recommendations for engineered fill and its placement and compaction are provided in Sections 5.4 and 5.5, respectively, and recommendations for CLSM provided in Section 5.7. Also, as part of site preparation, the location of active underground utilities should be determined and, if affected by construction activities, should be relocated or protected. The ends of abandoned pipes or ducts that extend outside the PMP improvement limits should be capped and sealed to prevent transmission of water into the site.

## 5.2 SUBGRADE PREPARATION

Soil supporting shallow spread footings, slabs-on-grade, or mat foundations should be prepared to provide a flat, relatively dry, and firm working surface that provides a relatively uniform distribution to structural loads. The subgrade should be free of objectionable materials such as soft clay, or soil containing organic material, debris, or other deleterious material. If any of these materials are encountered at subgrade, they should be removed (overexcavated) and brought back to grade with engineered fill in accordance with Sections 5.4 and 5.5. Clay is considered

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"soft" if it exhibits unstable behavior, such as pumping and/or being easily depressed when subjected to pressure loads.

Where potentially expansive soil is exposed at subgrade level, it should be mitigated as described in Section 5.3 below.

## 5.3 EXPANSIVE SOIL MITIGATION

The recent 2023 project-specific and previous explorations encountered moderately to highly expansive soil at the planned RMP site, which could cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations.

**At-Grade Structures** - Expansive soil should be mitigated for the centrifuge building, the solids load-out structure, and the sludge transfer pump station structure, which will be supported by shallow foundations. For these structures, we recommend that the upper 36 inches of building pad subgrade consist of non-expansive fill. The slab subgrade treatment area should consist of the building pad and an area extending 5 feet out from the building perimeters. Non-expansive import material should conform to the specifications in Section 5.4 and be placed in accordance with Section 5.5. Prior to backfilling the overexcavation, the upper 8 inches of expansive soil subgrade should be scarified, moisture conditioned to a minimum 4 percent above optimum moisture, and compacted between 87 and 92 percent relative compaction per ASTM D1557. There are portions of these buildings that will be constructed outside the location of the existing drying beds, and in these areas, the existing grade should be overexcavated to comply with these requirements to provide a uniform bearing surface for the RMP structures.

**Below-Grade Structures** - The foundations of below-grade structures, such as sludge storage tanks, gravity thickener tanks, washwater flocculation/sedimentation basins, washwater equalization basins and pump station, centrifuge wet well, and decant pump station, will not be subject to wetting and drying cycles; therefore, no mitigation is likely necessary for these structures. The subgrades for these structures should be moisture conditioned and compacted in accordance with Table 5.5-1 for "on-site subgrade material."

**Site Improvements** - Improvements such as concrete walkways and pavement can also be subject to damage due to shrinking and swelling of expansive soil. Damage to these surface features can be repaired over time. Alternatively, the mitigation discussed above for at-grade structures can extend to improvement areas.

## 5.4 ACCEPTABLE FILL

Material for engineered fill should be inorganic, free of rocks or clods greater than 3 inches in greatest dimension or any other deleterious material and have a low potential for expansion. The material should have a liquid limit of less than 35, a plasticity index less than 12, and no more than 25 percent passing the No. 200 sieve.

Based on our review of the previous subsurface exploration information and laboratory testing results, we anticipate that reuse of on-site excavated material will not be suitable for engineered fill under and adjacent to proposed structures. We also consider the on-site material is not well suited for blending with granular material to create engineered fill because of the very high fines content and high to critical plasticity of the soil.

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## 5.5 ENGINEERED FILL PLACEMENT AND COMPACTION

Engineered fill should be placed in loose lifts that do not exceed 8 inches or the depth of penetration of the compaction equipment used, whichever is less, moisture conditioned, and compacted in accordance with Table 5.5-1.

**TABLE 5.5-1: Subgrade and Engineered Fill Compaction and Moisture Content Requirements**

| MATERIAL | MINIMUM RELATIVE COMPACTION (%) | MINIMUM RELATIVE COMPACTION (%) – UPPER 12 INCHES OF FILL IN BUILDING AND PAVEMENT AREAS | MINIMUM MOISTURE CONTENT (percentage points above optimum) |
|---|---|---|---|
| On-site Subgrade Material | 87 to 92 | -- | 4 |
| Non-expansive Import Fill | 90 | 95 | 1 |
| Pavement AB* | 95 | -- | 0 |

** Class 2 aggregate base material with minimum R-Value = 78*

The relative compaction and optimum moisture content of soil and aggregate base referred to in this report are based on the most recent ASTM D1557 test method. Compacted soil is not acceptable if it is unstable. It should exhibit only minimal flexing or pumping, as observed by our field representative. As used in this report, the term "moisture condition" refers to adjusting the moisture content of the soil by either drying if too wet or adding water if too dry.

Successful construction on expansive soil requires special attention during grading. It is imperative to keep exposed soil moist by occasional wetting. If the soil dries, it is extremely difficult to remoisturize the soil (because of their clayey nature) without ripping/discing, moisture conditioning, and recompaction.

All compaction should be performed using mechanical compaction means; flooding or jetting should not be used as a means to achieve compaction. The ASTM D1557 laboratory compaction tests should be performed at the time of construction to provide a proper basis for compaction control.

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## 5.6 STRUCTURE/RETAINING WALL BACKFILL

Due to the anticipated highly to critically expansive nature of the near-surface soil at the RMP sites, we recommend retaining walls and/or structure elements extending below the ground surface be backfilled with non-expansive material. Structure backfill should be inorganic, free of rocks or clods greater than 3 inches in greatest dimension or any other deleterious material, and have a low potential for expansion. To preclude material binding and allow ease of compaction, we recommend that the structure or retaining wall backfill material meet the gradation presented in Table 5.6-1.

**TABLE 5.6-1: Structure / Retaining Wall Backfill Gradation**

| SIEVE SIZE | PERCENT PASSING |
|---|---|
| 3 inches | 100 |
| 1½ inches | 80 to 100 |
| #4 | 50 to 100 |
| #16 | 40 to 90 |
| #50 | 10 to 60 |
| #200 | 0 to 10 |

Structure or retaining wall backfill should be placed in layers not exceeding 8 inches in uncompacted thickness, moisture conditioned to a minimum of 2 percent above optimum, and mechanically compacted to 90 percent relative compaction per ASTM D1557. We anticipate that on-site soil excavated during construction will not be suitable for structure or retaining wall backfill.

## 5.7 CONTROLLED LOW-STRENGTH MATERIAL

In lieu of mechanically compacted granular material, a flowable fill such as CLSM may be used for pipe bedding, engineered fill, and structure backfill, subject to the approval of the design engineer. CLSM is a low-strength (1,200 psi (pounds per square inch) or less), self-leveling concrete material comprising a combination of cement, fly ash, aggregate, and water. The primary advantages of using CLSM as a flowable fill include the following.

- Self-leveling
- Self-compacting
- Better control over engineering properties such as unit weight, compressive strength, etc.
- Ease of placement
- Uniformity of support provided to pipelines when used as bedding
- Reduction in required trench widths for pipelines
- Pipe support is generally better and greater values of the soil modulus (E') can sometimes be used to design the pipe
- Reduced risk of damaging the pipe or pipe coating with mechanical compaction equipment

These advantages should be weighed against other impacts, such as cost and required measures, to prevent flotation of buried facilities (pipelines, tanks, vaults, etc.) resulting from their buoyancy within the uncured CLSM.

The CLSM should be proportioned to produce a flowable, non-segregating, self-consolidating, low-shrink slurry. Where it is desired for the CLSM to be excavatable (e.g., pipe trench backfill or backfill over other buried structures), the unconfined 28-day compressive strength should be from 100 psi to no greater than 250 psi. CLSM can also be designed for greater strengths (up to 1,200 psi) for specific engineering purposes, but cannot be easily excavated at compressive strengths greater than 250 psi. The CLSM should have a unit weight of no greater than 130 pcf (pounds per cubic foot) to preclude inducement of consolidation settlement of native clay at the site (if unit weights greater than 130 pounds per square foot (psf) are proposed in a design mix, the mix should be reviewed and approved by Valley Water's representative geotechnical engineer prior to use). The contractor should determine the material and proportions used to meet the requirements of CLSM. At a minimum, material used for CLSM should conform to the following requirements.

- Portland Cement: ASTM C150, Types II or V
- Aggregate: Durable sand with or without fine gravel, where 100 percent by total weight passes the 1-inch (25-millimeter) screen and having less than 15 percent passing the No. 200 sieve. Sound aggregate should be free of foreign material and organics.
- Water: potable
- Fly ash: Class F or Class C, ASTM C618, unless otherwise approved

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We recommend that the aggregate used in CLSM complies with the following gradation requirements, as shown in Table 5.7-1.

**TABLE 5.7-1: CLSM Aggregate Gradation Requirements**

| SIEVE SIZE | PERCENT PASSING |
|---|---|
| ½ inch | 100 |
| ⅜ inch | 70–100 |
| No. 200 | 0–15 |

If more than 5 percent of the aggregate passes the No. 200 sieve, the material passing the No. 200 sieve should have a plasticity index of less than 15. We anticipate that most of the excavated soil at the WPCF site will not be suitable for CLSM aggregate.

The contractor should devise and employ a method during CLSM placement to prevent flotation of the pipes or other structures while curing. If the designer opts to use CLSM for pipe trench fill, we recommend that it be placed in a zone extending from at least 6 inches below the bottom of the pipe to a height at least 0.7 outside diameter (O.D.) above the bottom of the pipe. The trench backfill with CLSM bedding is shown in the Pipe Trench Detail, Figure 7.

## 5.8 TRENCHING AND BEDDING FOR PIPELINES AND UTILITIES

We anticipate that trench widths for pipes/utilities will depend on several factors, including pipe diameter and material, as well as the number of pipes laid in a single trench. We recommend that pipe trench widths extend a minimum of 12 inches beyond each outer edge of the pipeline (or outer edge of the outermost exterior pipes if multiple pipes are laid in a single trench) to allow for hand compaction of pipe bedding (and shading in joint utility trenches). If soft or otherwise unsuitable soil is exposed in the bottom of the trench excavation, it should be overexcavated and replaced with compacted engineered fill.

Care should be exercised where utility trenches are located beside foundation areas. Utility trenches constructed parallel to foundations should be located entirely above a plane extending down from the lower edge of the footing at an angle of 45 degrees.

Unless concrete bedding/easement is required around utility lines, we recommend that material for bedding and shading assume a well-graded sand or a sand-gravel mixture, with a maximum gravel size of ½ inch and having less than 12 percent passing the No. 200 sieve. Uniformly graded material, such as pea gravel, should not be used as pipe/utility bedding or shading material. Bedding should have a minimum thickness of 6 inches beneath the pipe/utility line and shading a minimum 6 inches above the pipe/utility line. All pipe bedding and shading should be placed to achieve uniform contact with the pipe/utility line, moisture conditioned to a minimum of optimum moisture, and compacted to a minimum relative compaction of 90 percent per ASTM D1557. Compaction by means of jetting or flooding should not be allowed.

## 5.9 PIPELINES AND UTILITIES TRENCH BACKFILL

Pipe/utility line trenches should be backfilled above the pipe or utility shading with material meeting the specifications for engineered fill, as discussed in Sections 5.4 and 5.5. Care should be taken to not damage the utilities during backfill placement and compaction.

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### 5.10 THRUST BLOCKS

Resistance to lateral thrust forces at pipe bends may be provided by thrust blocks. Thrust blocks provide resistance by transferring the pipe thrust force to the adjacent native soil through the larger bearing area of the block, such that the resulting pressure is less than the safe horizontal bearing capacity of the soil. Based on the data from the previous investigations, we anticipate that the thrust blocks for the pipelines will likely provide bearing resistance, primarily against expansive clay soil. For thrust block design, we assumed a minimum width of 1 foot, length of 1 foot, and 4 feet of embedment in native soil. A horizontal bearing capacity of 1,500 psf may be used for thrust block design. Thrust blocks may also provide resistance to lateral loads developed by base friction on subgrade soil and may be calculated using an ultimate coefficient of friction of 0.35.

## 6.0 EXCAVATION CONSIDERATIONS

### 6.1 EXCAVATION CHARACTERISTICS

Excavations for planned PWTP improvements will encounter predominantly clayey fill and native clayey deposits and can be carried out using conventional heavy equipment (e.g., excavators, backhoes, dozers, etc.). Measures such as heavy ripping, hammering, or blasting of soil/rock are not anticipated for the project. Groundwater is not anticipated within the expected depths of excavation for the project, although unforeseen perched water stored in sandy soil and/or transient flow of infiltration water may impact excavations and necessitate temporary dewatering measures.

### 6.2 OPEN EXCAVATIONS

Where space permits, excavations for the new structures, yard piping, or electrical duct banks may allow for unshored open excavations with adequately sloped sidewalls. Excavation sloping and benching should be configured and constructed in accordance with the current California Division of Occupational Safety and Health (Cal/OSHA) regulations (Title 8, California Code of Regulations) pertaining to excavations. We expect that temporary slopes will be stable for configurations described in Title 8 for Type C soil, and excavations of 20 feet or less should be cut back no steeper than 1½:1 (horizontal:vertical).

### 6.3 SHORING CONSIDERATIONS

If excavations for below-grade structures require some form of vertical shoring to accommodate space constraints, the shoring design and installation should be the responsibility of the construction contractor. The type and design of the shoring will depend on factors, including, but not limited to: (1) depth of excavation (2) excavation method bracing sequence, (3) surcharge loads, (4) tolerances of adjacent ground and/or structures movement, and (5) requirements to mitigate bottom instability.

The shoring and bracing should accommodate surcharge loads that may be imposed by adjacent structures, traffic, soil stockpiles, or other construction-related activities. Shoring walls should extend beneath the toe of excavation, as needed, to preclude excavation base heave. Base heave occurs where excavations expose weak clay that is unable to support the bearing load of the soil and surcharge loads outside the shoring wall. Base heave is typically accompanied by vertical and lateral movements of the adjacent ground and excavation shoring systems. Any potential for base heave, and providing adequate shoring to prevent excessive ground deformation, should be evaluated by the contractor.

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Possible shoring schemes include steel soldier pile and timber lagging, driven interlocking steel sheet piles, soil-cement mix walls, etc., which may include internal bracing struts or external tiebacks to add restraint and to limit lateral deflections. Such braced and shored excavations will be subjected to lateral earth pressures.

The stability of excavations will also depend upon the depth and dimension of the excavation and the duration of the excavation. Proposed excavation shoring plans should be developed by a civil or geotechnical engineer hired by the construction contractor and should be reviewed by us prior to construction. All excavations should be monitored during construction to detect any evidence of instability.

### 6.4 BOTTOM STABILITY

Excavations for proposed RMP improvements structures, yard piping, duct banks, etc. may expose clayey subgrade soil that is saturated and softened by perched water. In these cases, a stable working surface should be constructed before subsequent engineered fill or pipe bedding is placed and compacted. Common methods for constructing a stable working surface include:

- Overexcavate the unstable soil (minimum 12 inches); place a stabilizing geotextile fabric over the unstable area; and cover it with a layer of clean, open graded, angular gravel or crushed rock. The thickness of the rock layer should be determined in the field, but a minimum 12-inch-thick layer may be assumed for preliminary planning.
- Construct a lean-mix concrete working “mud-slab” over the unstable subgrade.

### 6.5 DEWATERING CONSIDERATIONS

As discussed in Section 3.6, groundwater within the landslide mass consists of multiple isolated perched aquifers. Although the measured groundwater levels at the RMP site are well below the planned below-grade improvements, transient groundwater flowing through coarse-grained deposits from local infiltrating rainfall or irrigation water could affect below-grade construction. Where these conditions are encountered, some form of dewatering should be considered to maintain a relatively dry stable work environment and a firm subgrade for the preparation for pipeline bedding and appurtenant structure foundation construction. We anticipate that any required dewatering can be achieved by implementing a system of sumps and pumps within the excavations. Conditions requiring dewatering by means of widespread drawdown of the groundwater aquifer using well points are not anticipated.

## 7.0 LATERAL EARTH PRESSURES AND PASSIVE RESISTANCE

Structural components that extend below the ground surface, such as concrete vaults and below-grade walls, will experience lateral earth pressure from the soil resting against them. We recommend backfill soils in contact with below-grade structures consist of non-expansive structural backfill in accordance with Section 5.6. Recommendations for lateral earth pressures and coefficient of base friction to resist active and at-rest loads are summarized on Table 7.0-1 and discussed in the following sections. The recommended distribution of lateral earth pressures is also shown in Figure 8 - Lateral Earth Pressure Diagram.

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**TABLE 7.0-1. Summary of Lateral Earth Pressures**

| MATERIAL TYPE | ACTIVE EARTH PRESSURE [1] | AT-REST EARTH PRESSURE [1] | ULTIMATE PASSIVE RESISTANCE [1,2] | PASSIVE EARTH RESISTANCE (3%) [1,2] | PASSIVE EARTH RESISTANCE (1%) [1,2] | SEISMIC EARTH PRESSURE INCREMENT [3] | SURCHARGE PRESSURE INCREMENT [4] |
|---|---|---|---|---|---|---|---|
| | $EFP_A$ (pcf) | $EFP_O$ (pcf) | $EFP_{P6}$ (pcf) | $EFP_{P3}$ (pcf) | $EFP_{P1}$ (pcf) | $EFP_S$ (psf) | $q_s$ (psf) |
| Structural Backfill | 35 | 55 | 450 | 380 | 250 | 45 | 100 |

*Notes:*

1. *These earth pressures and passive resistance are calculated as a triangular pressure distribution based on the equivalent fluid pressures shown, and assuming level ground surface.*
2. *Ultimate passive resistance is typically fully mobilized at a wall deflection of approximately 6% of the wall height, H, that retains soil. Passive pressures at lower deflections (3% and 1% of H) are provided for use if 6% deflection exceeds the tolerances for the structure.*
3. *The seismic earth pressure shown is for rigid, non-yielding walls. This should be added to active earth pressure for walls greater than 6 feet in retained height.*
4. *Surcharge load shown is for HS20 loading approximately 5 feet from the trench wall face. This load should be applied as a rectangular distribution over the upper 10 feet of the trench wall height. Other surcharge loads, such as construction equipment, stockpiles, and existing facilities, should be evaluated by the design engineer based on anticipated conditions.*

Active and at-rest forces assume structural backfill is present within the backfill zone. Passive resisting forces assume acceptable engineered fill is present at the base and in front of the retaining structures. If retaining wall construction does not consist of an open-cut excavation with backfill of select structural backfill (e.g., walls formed directly against in situ soil), we should provide revised earth pressure recommendations as appropriate.

The lateral earth pressures presented above are for the RMP design team's use and are not intended as prescriptive parameters for the contractor's shoring design. The contractor should be responsible for the design and construction of all shoring systems. If this geotechnical report is made available to the construction contractor as a reference document, they are still responsible for development of design lateral earth pressures, even if they choose to adopt the parameters provided in this report.

## 7.1 ACTIVE EARTH PRESSURE

Active earth pressures are imposed by the soil on walls that are unrestrained so that the top of the wall is free to translate or rotate at least 0.004 H, where H is the height of the wall. Such relatively "yielding" structures may include temporary shoring systems for excavations or other cantilever type walls. Active earth pressure may be calculated using a design equivalent fluid pressure (EFP) of 35 pcf. Groundwater is not expected within the depths of the proposed structure foundations, so the effects of soil buoyancy and hydrostatic pressures on the wall are not anticipated. Active earth pressures on flexible walls should be applied in a triangular distribution beginning at the ground surface/wall interface.

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## 7.2 AT-REST EARTH PRESSURE

At-rest pressures should be used for design of walls that are rigid or restrained such that the deflections required to develop active earth pressures cannot occur or are undesirable. The at-rest earth pressure may be calculated using a design EFP of 55 pcf. Groundwater is not expected within the depths of the proposed structure foundations, so the effects of soil buoyancy and hydrostatic pressures on the wall are not considered. At-rest earth pressures on rigid or non-yielding walls should be applied in a triangular distribution beginning at the ground surface/wall interface.

## 7.3 PASSIVE RESISTANCE

Lateral loads on structures can be counteracted by passive resistance that mobilizes as the sides of below-grade structures, such as walls or footing keys push against the surrounding soil. The mobilization of passive resistance depends on the lateral displacement of the wall or footing. Ultimate passive resistance is typically mobilized at a wall displacement of approximately 6 percent of the wall height in contact with the soil. As shown in Table 7.0-1, the ultimate passive resistance may be calculated using a design EFP of 450 pcf. The 3 percent and 1 percent passive resistance values presented in Table 7.0-1 can be used at the discretion of the structural engineer in order for the available passive resistance to be compatible with the tolerable movement that the wall can undergo. The wall movement required to develop the specified passive resistance is expressed as a percentage of the wall height **(H)**, which only includes the portion of the total wall height that is in contact with the retained soil. The movement should be assumed to act as a rotational movement of the top of wall for cantilever type walls, and as a translational movement for rigid wall structures. The appropriate displacement-compatible passive resistance may be combined with the base friction mobilized at the concrete-soil interface to resist lateral loading.

Groundwater is not expected within the depths of the proposed structure foundations, so the effects of soil buoyancy and hydrostatic pressures on the wall are not considered. Passive resistance should be applied in a triangular distribution and should be ignored within the upper 1 foot from the ground surface.

## 7.4 SURCHARGE LOADING

Additional surface-applied live and dead surcharge loads may also impose an increase to lateral earth pressures against the wall. For design, we recommend the additional lateral earth pressure of 100 psf be applied to permanent walls for the upper 10 feet of the wall (i.e., in a rectangular pressure distribution) where long-term vehicle live loads are expected. This surcharge load represents an H20-44 or HS20-44 truck loading adjacent to the top of the wall. Additional surcharge loading from other loads, including heavy construction equipment, stockpiles, and temporary/permanent structures, should be calculated and applied to the wall design on a case-by-case basis.

## 7.5 SEISMIC ACTIVE EARTH PRESSURE

In addition to static (active or at-rest) pressures, permanent walls extending below grade and or retaining walls above grade more than 6 feet in exposed height should be designed to consider additional earth pressures due to earthquake loading. The earth pressure due to seismic loading with level backfill may be calculated using a using a design EFP of 45 pcf. This earth pressure should be applied as a fluid pressure in a triangular distribution and should be added to active earth pressure for all wall types.

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### 7.6 BASE FRICTION

A coefficient of friction of 0.35 may be used for estimating the resistance due to base friction for mass concrete interfaced with subgrades prepared in accordance with the recommendations of this report. The base friction mobilized at the concrete-soil interface may be combined with the passive resistance shown in Table 7.0-1 (for the desired displacement limit) to resist lateral loading.

## 8.0 FOUNDATION DESIGN RECOMMENDATIONS

The selection and design of foundations for the proposed new RMP structures should satisfy the following primary objectives.

- Provide an acceptable factor of safety against bearing capacity failure of foundation soil under maximum design loads, including transient inertial loading induced by seismic ground shaking.
- Settlements of the foundation must be of a low magnitude sufficient to prevent structural damage, breach of pipe and other utility connections, or impair the operational integrity of the PWTP facility.
- Accommodate potential highly to critically expansive soil at the site.
- Accommodate lateral and vertical movements associated with the deep-seated PCL, which is further discussed in Section 8.1.

Based on our assessment of the subsurface conditions at the RMF and WTP sites, we recommend that the proposed structures be supported by reinforced structural slabs or footing foundations. Where estimated ground movements from landslide creep or seismically induced deformations exceed design tolerances, structural slab/mat foundations should be considered in lieu of isolated spread footings.

### 8.1 LANDSLIDE MOVEMENT CONSIDERATIONS

As discussed in Section 3.3, the entire PWTP is situated on the large deep-seated Penitencia Creek Landslide (PCL) that has experienced ongoing slow and relatively steady creep movement since the construction of the PWTP in the 1970s. The PCL creep movement has been monitored by Valley Water and reported in a series of annual surveillance reports that are routinely updated with accumulated monitoring data, including readings from inclinometers, piezometers, and electronic distance measurement (EDM) equipment.

Anticipated seismic displacement of the PCL resulting from a major earthquake on one of the active nearby faults has also been analyzed and estimated in past studies, including Woodward Clyde Consultants (WCC) in 1993, Treadwell & Rollo (T&R) in 2011, and LCI/CE&G in 2014 (with revisions in 2015). The LCI/CE&G study focuses on total and differential lateral movement between the toe of the PCL and the finish water meter vault (FWMV) for the purpose of mitigation/retrofit of a series of existing pipelines extending between these points. Since the FWMV is located near the center of the proposed RMP site (between the proposed RMF and WRF sites), the LCI/CE&G study provides the most refined and up-to-date estimates regarding anticipated seismic PCL displacements near the planned RMP site.

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Based on our review of the available PCL surveillance reports and the LCI/CE&G landslide and seismic-hazards evaluations, we recommend that the structural design of RMF and WRF facilities, including interconnecting pipelines and utilities, consider the following ground displacements associated with ongoing creep movement and potential seismic displacement of the PCL.

- **Ongoing Lateral Creep Movement** - The planned RMP site should consider an ongoing average lateral creep movement of ¼-inch per year, or about 12 inches total over a 50-year period. The movement has an azimuth direction of 220 degrees, plus-or-minus 20 degrees (as illustrated in Exhibit 3.3.2-1). Differential lateral creep movement within the planned RMP site, such as beneath new facility foundations, or between adjacent facilities that have structural, pipeline, or other utility connections, is expected to be of a very low magnitude (i.e., less than a ¼ inch).
- **Ongoing Vertical Creep Movement** - The PCL surveillance data (Nelson, 2011) indicates that the planned RMP site undergoes minor uplifting resulting from PCL creep movement, ranging from about 0.05 to 0.1 inches per year, or about 2 to 5 inches over a 50-year period. The lifting increases from the northwestern to southeastern end of the RMP site and is greatest near the eastern end of the planned WRF site where the washwater EQ basins and pump station are proposed. When considering landslide creep, we recommend that the RMP design consider a total uplift ranging from 2 to 5 inches over a 50-year period, and a differential vertical movement of ¼ inch over a 50-foot span.
- **Seismic-Landslide Displacement** - The planned RMP site should consider 2.2 feet of total landslide displacement corresponding to a design seismic event with a 5 percent probability of exceedance in a 50-year period. The movement is primarily lateral in nature with an azimuth direction of 220 degrees, plus-or-minus 20 degrees (as illustrated in Exhibit 3.3.2-1) but will include an uplift component characteristic of the surveillance report uplift observations. Differential lateral movement within the planned RMP site, such as beneath new facility foundations, or between adjacent facilities that have structural, pipeline, or other utility connections, will manifest as ground extension/elongation in the azimuth direction of movement (as illustrated in Exhibit 3.3.2-1) and may be as high as 6 inches over the width of the RMP site. The 2014 and 2015 LCI/CE&G studies did not quantify the anticipated vertical seismic displacement of the PCL, but noted that their finite element analysis results agreed well with the horizontal and vertical strain distributions characterized by the instrumentation monitoring presented in the 2011 surveillance report (Nelson, 2011). Based on this information, we estimate that the vertical landslide displacement caused by a design seismic event with a 5 percent probability of exceedance in a 50-year period will be approximately twice the displacement that results from long-term creep movement. We therefore recommend that the RMP design consider a total site uplift ranging from 4 to 10 inches (increasing from northwest to southeast) with a differential vertical movement of ½ inch over a 50-foot span.
- **Total Displacements for Design** - As described above, anticipated lateral and vertical ground displacements from movement of the PCL can occur in two distinctive modes: (1) creep-related deformation that will occur gradually over a period of 50 years with a relatively high degree of certainty and (2) seismic-induced deformation that could occur instantaneously at any time over a 50-year period, but with a much lower degree of certainty. These aspects of the potential PCL deformation over the design life of the RMP should be considered when assessing the degree of conservatism to be incorporated into the design. For example, considering only the ground deformations related to creep movement of the PCL may be considered under-conservative, while combining the creep-related and seismic-related displacements may be considered overconservative relative to the

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performance objectives of the RMP facilities. We consider it reasonable for the RMP design to consider the seismically induced PCL displacements without combining the creep-related displacements because the magnitude of the creep displacements is within the upper bound of the estimated seismic displacement (which may, or may not, occur within the RMP design life). With this approach, post-earthquake assessments of the RMF and WRF can be made on a case-by-case basis, and suitable repairs, retrofits, and other mitigations can be determined as needed.

## 8.2 STRUCTURAL SLABS/MATS

A mat-slab foundation is a large reinforced concrete slab designed by a structural engineer to interface one or more columns, walls, or pieces of equipment with the foundation soil. It may encompass the entire structure footprint or only the portion where loads are concentrated. The mat contact stresses are generally lower than other shallow foundation types, which limits the settlement induced by the distribution of stress over a larger area.

### 8.2.1 Subgrade Preparation for Slabs/Mats

We anticipate that most new structures for the RMP will be situated completely, or partially, within the footprint of the existing sludge drying basins or existing washwater recovery ponds to be decommissioned such that: (1) the structure foundation will be placed partially on native soil and partially on pond/basin engineered backfill, or (2) the structure foundation will be situated beneath the bottom of the decommissioned pond/basin bottom, but will expose dissimilar clayey and sandy native soil across the structure footprint. In either of these scenarios, we recommend that the in situ soil exposed at the foundation subgrade be overexcavated a minimum of 1 foot and be replaced with a uniform compacted engineered fill meeting the requirements in Sections 5.4 and 5.5. The placement and compaction of the engineered fill sub-layer will provide a more uniform support, elastic response, and load distribution of the mat or slab to the subsoil.

### 8.2.2 Design Parameters for Slabs/Mats

For slabs/mats placed on subgrades prepared as described above in Section 8.2.1, we recommend the slabs/mats be designed for an allowable dead-plus-normal-live load of 2,000 psf. These values may be increased by ⅓ for transient loading from wind or seismic. Mat/slab foundations typically experience some deflection because of loads placed on the mat and the reaction of the subgrade soil underlying the mat. For mat foundations bearing on engineered fill, a static vertical modulus of subgrade reaction ($\mathbf{K_{v1}}$) equal to 150 pounds per cubic inch (pci) may be used. This $\mathbf{K_{v1}}$ value is based on a square foot area and should be adjusted for the planned mat size. The coefficient of subgrade reaction, $\mathbf{K_B}$, for a mat of a specific dimension may be evaluated using the following equation.

$$\mathbf{K_B = K_{v1}\,[(B+1)/2B]^2}$$

Where **B** is the width or diameter of the foundation mat measured in feet. For a rectangular mat, the $\mathbf{K_B}$ value calculated above should be reduced by 25 percent.

## 8.3 SPREAD FOOTING FOUNDATION RECOMMENDATIONS

We provide allowable bearing capacities for isolated or continuous spread footing foundation systems for various load combinations in Table 8.3-1, and we provide minimum dimensions for interior and perimeter spread footings in Table 8.3-2.

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**TABLE 8.3-1: Allowable Bearing Capacity**

| LOAD COMBINATION | ALLOWABLE BEARING CAPACITY (psf) |
|---|---|
| Dead Load + Normal Live | 3,000 |
| Dead + Live + Wind or Seismic Loads | 4,000 |

*Notes: These allowable bearing capacities should be taken as net capacities.*

**TABLE 8.3-2: Minimum Dimensions**

| FOOTING TYPE | MINIMUM DEPTH (inches) | MINIMUM WIDTH (inches) |
|---|---|---|
| Continuous | 18 | 18 |
| Isolated | 18 | 18 |

The minimum depth should be taken from adjacent finished grade. The minimum thickness of non-expansive engineered fill below the footing should be at least 36 inches.

Because RMP improvement areas are underlain by very stiff and over-consolidated clay, we anticipate that grade settlement of structures supported on shallow foundations will be limited to end-of-construction elastic compression of subsoils in response to the allowable bearing pressures in Table 8.3-1. For design, end-of-construction elastic settlement may be taken as ½ inch total settlement and ¼ inch differential settlement across the span of mat foundations or between isolated spread footings.

## 8.4 SHEAR KEYS

Shear keys may also be designed to provide additional passive resistance to lateral loads using the passive resistance values provided in Section 7.0. The surcharge imposed by the structural dead load acting on the mat/slab foundation may also be included in determining the magnitude of available passive resistance against interior shear keys. Exterior shear keys (i.e., shear keys near the outer edge of the structure) should not consider any surcharge from the dead load pressure of the mat and should ignore the upper 1 foot of passive resistance. For shear keys placed beneath the mat at least a distance 2*H away from the exterior edge of the building, where H is the height of the shear key, the initial passive resistance at the top of the key may be taken as 2.5*q, where q is the surcharge pressure at the base of the mat due to the floor level dead load. We do not recommend that side friction acting along the face of the shear keys be relied upon for resistance to lateral inertial loads.

## 8.5 INTERIOR FLOOR SLABS

Floor slabs can be designed as structural slabs or as slabs-on-grade at the discretion of the structural engineer and architect. Interior floor slabs should be supported by at least 36 inches of non-expansive fill meeting the criteria for engineered fill in Section 5.4 and placed and compacted in accordance with Section 5.5. Concrete thickness and reinforcement should be determined by the structural engineer.

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## 8.6 SLAB MOISTURE VAPOR REDUCTION

When buildings are constructed with concrete slab-on-grade or structural mat foundations, water vapor from beneath the slab will migrate through the slab and into the building. This water vapor can be reduced but not stopped. Vapor transmission can negatively affect floor coverings and lead to increased moisture within a building. When water vapor migrating through the slab would be undesirable, we recommend the following to reduce, but not stop, water vapor transmission upward through the slab-on-grade.

1. Install a vapor retarder membrane directly beneath the slab. Seal the vapor retarder at all seams and pipe penetrations. Vapor retarders shall conform to Class A vapor retarder in accordance with ASTM E 1745, latest edition, "Standard Specification for Plastic Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs."
2. Concrete should have a concrete water-cement ratio of no more than 0.50.
3. Provide inspection and testing during concrete placement to check that the proper concrete and water-cement ratio are used.
4. Moist cure slabs for a minimum of 3 days or use other equivalent curing specified by the structural engineer.

If a non-structural slab-on-grade floor is used, we recommend placing a 4-inch-thick layer of ¾-inch clean, crushed rock between pad subgrade and the vapor retarding membrane to act as a capillary break. The structural engineer should be consulted as to the use of a layer of clean sand or pea gravel (less than 5 percent passing the U.S. Standard No. 200 Sieve) placed on top of the vapor retarder membrane to assist in concrete curing. If the structural engineer specifies a thin layer under structural mats, then the mat foundation should have a thickened edge that is at least 12 inches wide to cut off the flow of water between the bottom of the mat and the vapor retarding membrane. The edge should be thickened at least by the thickness of sand or gravel specified.

## 8.7 WATERPROOFING

Several of the major RMP improvement structures are anticipated to be constructed partly or completely below grade. While the groundwater surface at the RMP site has been measured well below the elevation of any of the planned improvements, transient groundwater flowing through coarse-grained deposits from local infiltrating rainfall or irrigation water could lead to water intrusion in the below-grade structures. Therefore, we recommend that waterproofing be implemented for the below-grade structures.

We recommend that an engineer or architect familiar with the design and installation of waterproofing systems for slabs and walls below grade be consulted. For wall and/or slab penetrations at pipe/conduit locations, seals that limit the amount of seepage to an acceptable level should be designed and installed. Water stops should be used at horizontal and vertical construction joints to reduce the likelihood of water infiltration. Waterproofing should be protected from being damaged by compaction equipment and other construction vehicles after installation, and any damage should be repaired prior to resuming backfilling operations.

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# 9.0 PAVEMENT DESIGN

We anticipate the proposed improvements will include the paving of access roadways around the new RMP facilities. Harza (2000) performed an R-value test to provide data for pavement design. The test result indicates an R-value of 3, which we judged to be appropriate. We provide pavement sections in Table 9.0-1.

**TABLE 9.0-1: Flexible Pavement Design**

| TRAFFIC INDEX (TI) | PAVEMENT SECTION | |
|---|---|---|
| | AB (inches) | AC (inches) |
| 4.0 | 8 | 2½ |
| 5.0 | 11 | 3 |
| 6.0 | 13 | 3½ |
| 7.0 | 16 | 4 |

*Notes: AB is aggregate base Class 2 Material with minimum R = 78*
*AC is asphalt concrete*

The traffic index should be determined by the civil engineer or by Valley Water. These sections are for estimating purposes only; actual sections should be based on R-Value tests performed on samples of actual subgrade material recovered at the time of grading. Pavement construction material should comply with the requirements of the civil engineer and Valley Water.

Aggregate base material should meet the requirements of Class 2 Aggregate Base in Section 26 of the Standard Specifications. The aggregate base should be compacted to at least 95 percent of the maximum dry density as evaluated by ASTM D1557. Prior to placement of base material, the top 6 inches of subgrade soil should be scarified, moisture conditioned, and compacted to at least 95 percent relative compaction.

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# 10.0 CLOSURE

This report presents geotechnical recommendations for design of the improvements discussed in Section 1.2 for the RMP at the PWTP. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and recommendations of this report to the appropriate organizations or people involved in design of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance.

We strive to perform our professional services in accordance with generally accepted principles and practices currently employed in the area; there is no warranty, express or implied. There are risks of earth movement and property damages inherent in building on or with earth material. We are unable to eliminate all risks; therefore, we are unable to guarantee or warrant the results of our services.

We developed this report with limited subsurface exploration data described in available historical geotechnical reports. We assumed that the subsurface exploration data provided to us are representative of the actual subsurface conditions across the site.

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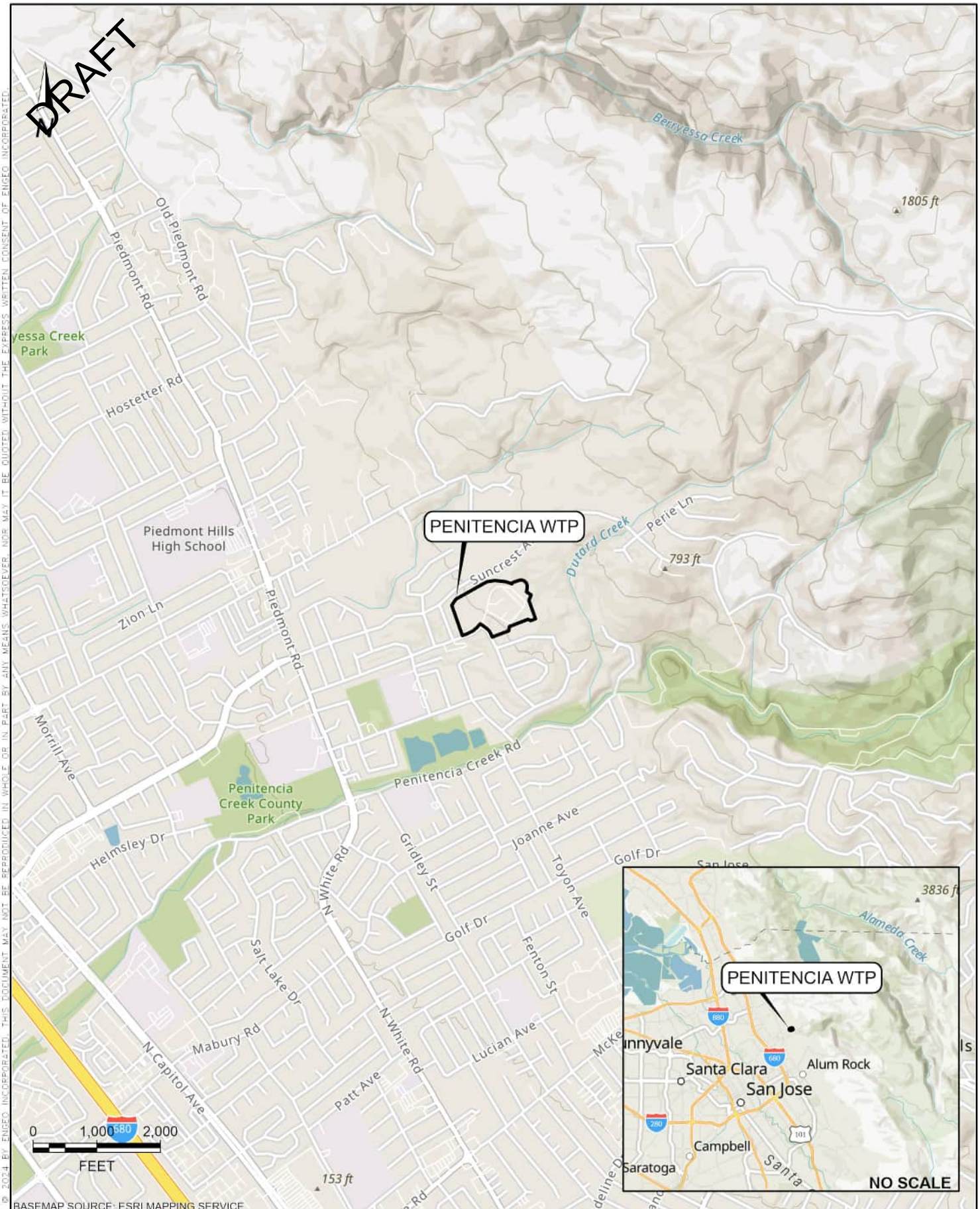
## FIGURES

FIGURE 1: Vicinity Map
FIGURE 2: Site Pan
FIGURE 3: Regional Geologic Map
FIGURE 4: Regional Faulting and Seismicity Map
FIGURE 5: Seismic Hazards Zone Map
FIGURE 6: Groundwater Monitoring Locations
FIGURE 7: Pipe Trench Detail
FIGURE 8: Lateral Earth Pressure Diagram




BASEMAP SOURCE: ESRI MAPPING SERVICE

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# VICINITY MAP

PENITENCIA WATER TREATMENT PLANT
RESIDUALS MANAGEMENT PROJECT
SAN JOSE, CALIFORNIA

| | |
|---|---|
| PROJECT NO. : | 19990.000.001 |
| SCALE: | AS SHOWN |
| DRAWN BY: NWC | CHECKED BY: NN |

FIGURE NO. 1

PATH: G:\DRAFTING\PROJECTS_18000 TO 19999\19990\19990000001\GEOTECHNICAL\GEX\19990000001_RESIDUALSMANAGEMENTPROJECT_GEX - GEX.APRX ORIGINAL FIGURE PRINTED IN COLOR
LAYOUT: 01. VICINITY 8.5 X 11 PORTRAIT USER: NCLOUGH

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I-13
P-16 &P-17 (9-PZ)
KB-6
KB-7
B-4
B-13
Centrifuge Wet Well
Sludge Storage Tanks
B-2
OW-29
Solids Load Out
Centrifuge Building
B-1
KB-1
Sludge Transfer PS
KB-5
B-3
KB-2
Gravity Thickener Tanks
KB-4
Decant PS
KB-9
B-10
KB-8
Washwater Flocculation/ Sedimentation Basins
EB-1
I-32
1-CPT
KB-12
EB-2
P-1
B-11
Washwater EQ Basins and PS
KB-10
I-23
KB-11
I-31
I-30

0 60
FEET

## EXPLANATION

*ALL LOCATIONS ARE APPROXIMATE*

- KB-11 — Boring (Kleinfelder, 2023)
- KB-12 — Boring/Open Standpipe Well (Kleinfelder, 2023)
- EB-2 — Boring (HARZA, 2000)
- B-4 — Boring (CH2M Hill ,1987)
- B-15 — Boring (Robert T S. Cooper, 1964)
- 1-CPT — Cone Penetration Test (HARZA, 2000)
- P-16 &P-17 (9-PZ) — Pneumatic Piezometer (Valley Water, 1971-1986)
- OW-29 — Open Standpipe Well (Valley Water, 2002)
- I-13 — Inclinometer (Valley Water, 1985-2014)

*BASE MAP SOURCE: STANTEC*

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# SITE PLAN

PENITENCIA WATER TREATMENT PLANT
RESIDUALS MANAGEMENT PROJECT
SAN JOSE, CALIFORNIA

| | |
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| PROJECT NO.: | 19990.000.001 |
| SCALE: | AS SHOWN |
| DRAWN BY: SPPE | CHECKED BY: SOS |

FIGURE NO. 2

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ORIGINAL FIGURE PRINTED IN COLOR

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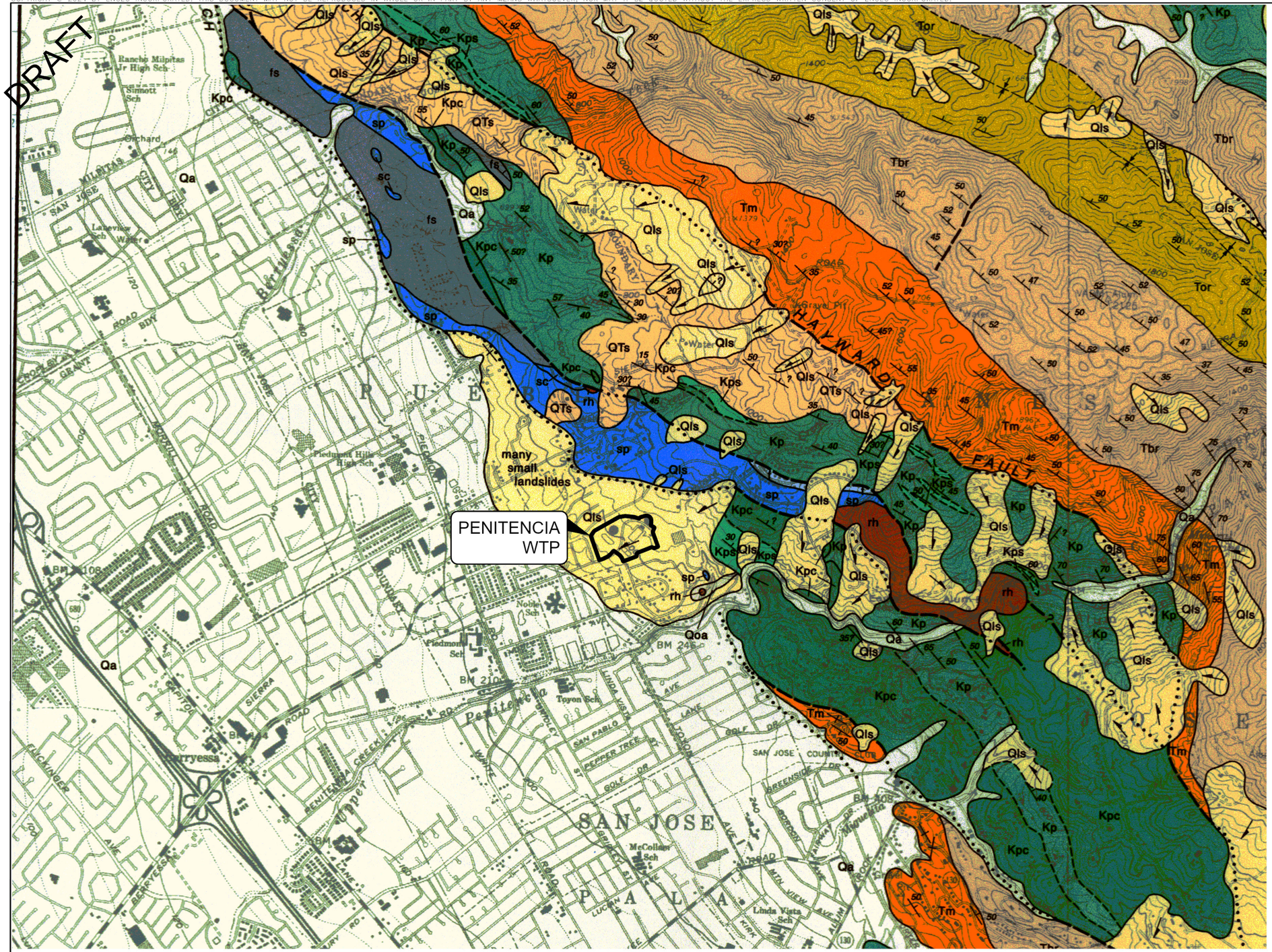


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## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

- Qa — Alluvial gravel
- Qls — Landslide complex
- Qts — Santa Clara formation - Gravel/conglomerate
- Tbr — Briones formation - Sandstone
- Tm — Monterey formation - Shale
- Kp — Panoche formation - Clay, Shale or mudstone
- Kps — Panoche formation - Sandstone
- Kpc — Panoche formation - Conglomerate
- rh — Orinda formation - Rhyo-dacite
- sc — Serpentinite - Silica-carbonate rock
- sp — Serpentinite
- fs — Franciscan assemblage - Graywacke sandstone

BASE MAP SOURCE: DIBBLEE, 2005

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# REGIONAL GEOLOGIC MAP

PENITENCIA WATER TREATMENT PLANT
RESIDUALS MANAGEMENT PROJECT
SAN JOSE, CALIFORNIA

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| PROJECT NO. | 19990.000.001 |
| SCALE | AS SHOWN |
| DRAWN BY | NWC |
| CHECKED BY | NN |

FIGURE NO. 3

PATH: G:\DRAFTING\PROJECTS_18000 TO 19999\19990\19990000001\GEOTECHNICAL\PGEX\19990000001_GEX.APRX
LAYOUT: B-SIZE LANDSCAPE USER: NCLOUGH

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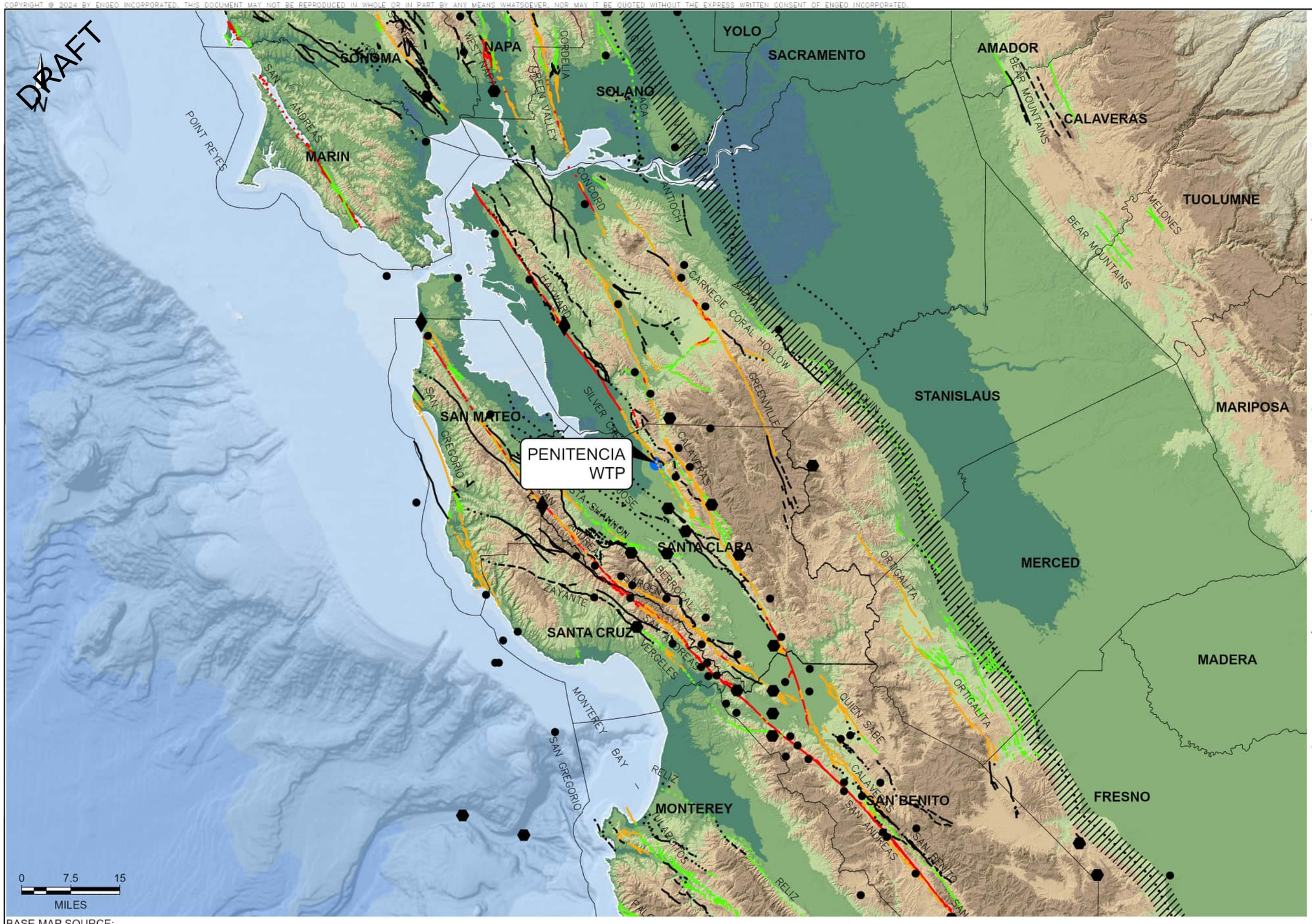


## EXPLANATION

- Project Site

**HISTORIC EARTHQUAKE EPICENTERS**

- Magnitude 5-6
- Magnitude 6-7
- Magnitude 7+
- Historic Blind Thrust Fault Zone

**QUATERNARY FAULTS 2020**

Based on time of most recent surface deformation

- Historical (<150 Years), Well Constrained Location
- Historical (<150 Years), Moderately Constrained Location
- Historical (<150 Years), Inferred Location
- Latest Quaternary (<15,000 Years), Well Constrained Location
- Latest Quaternary (<15,000 Years), Moderately Constrained Location
- Latest Quaternary (<15,000 Years), Inferred Location
- Latest Quaternary (<15,000 Years), Inferred Location
- Late Quaternary (<130,000 Years), Moderately Constrained Location
- Late Quaternary (<130,000 Years), Inferred Location
- Middle And Late Quaternary (<750,000 Years), Well Constrained Location
- Middle And Late Quaternary (<750,000 Years), Moderately Constrained Location
- Middle And Late Quaternary (<750,000 Years), Inferred Location
- Undifferentiated Quaternary(<1.6 Million Years), Well Constrained Location
- Undifferentiated Quaternary(<1.6 Million Years), Moderately Constrained Location
- Undifferentiated Quaternary(<1.6 Million Years), Inferred Location
- Class B (Various Age), Well Constrained Location
- Class B (Various Age), Moderately Constrained Location
- Class B (Various Age), Inferred Location

BASE MAP SOURCE:
CSUMB, ESRI, GARMIN, NATURALVUE, ESRI, GEBCO, GARMIN, NATURALVUE
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATA SET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, 2020
C.G.S. HISTORIC EARTHQUAKE DATABASE

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# REGIONAL FAULTING AND SEISMICITY MAP

PENITENCIA WATER TREATMENT PLANT
RESIDUALS MANAGEMENT PROJECT
SAN JOSE, CALIFORNIA

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| PROJECT NO. : | 19990.000.001 |
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| CHECKED BY: | NN |

FIGURE NO. 4

PATH: G:\DRAFTING\PROJECTS_18000 TO 19999\19990\19990000001\GEOTECHNICAL\GEX\19990000001_RESIDUALSMANAGEMENTPROJECT_GEX - GEX.APRX
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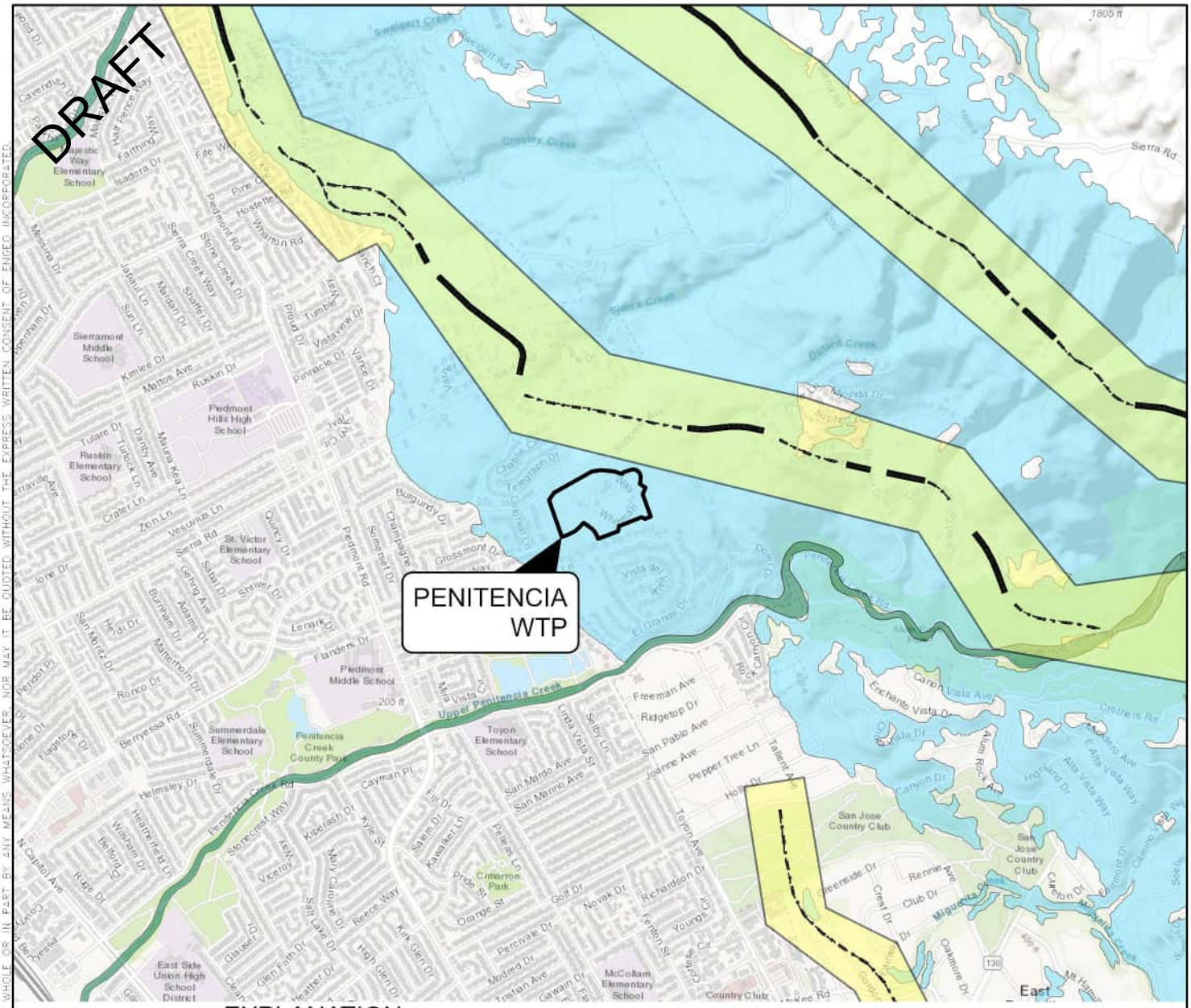
ORIGINAL FIGURE PRINTED IN COLOR




## EXPLANATION

ALL LOCATIONS ARE APPROXIMATE

**FAULT TRACES**

APPROXIMATELY LOCATED — CONCEALED — INFERRED

**Earthquake Fault Zone**

Zone boundaries are delineated by straight-line segments; the boundaries define the zone encompassing active faults that constitute a potential hazard to structures from surface faulting or creep such that avoidance as described in Public Resources Code Section 2621.5(a) would be required

**Earthquake-Induced Landslide Zones**

Areas where the previous occurrence of landslide movement, or local topographic, geological, Geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

**Liquefaction Zone**

Areas where the historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required

N

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FEET

BASEMAP SOURCE: ESRI MAPPING SERVICE AND GOOGLE MAP MAPPING SERVICE
CALIFORNIA DEPARTMENT OF CONSERVATION, CALIFORNIA GEOLOGICAL SURVEY

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# SEISMIC HAZARDS ZONE MAP

PENITENCIA WATER TREATMENT PLANT
RESIDUALS MANAGEMENT PROJECT
SAN JOSE, CALIFORNIA

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|---|---|
| PROJECT NO. | 19990.000.001 |
| SCALE: | AS SHOWN |
| DRAWN BY: | NWC |
| CHECKED BY: | NN |

FIGURE NO. 5

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LAYOUT: SEISMIC HAZARD USER: NCLOUGH

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N

PENITENCIA WTP

P-18 &
P-19

OW-28

P-16
&P-17
(9-PZ)

OW-29

KB-4

I-30

KB-12

P-1

I-31

0 100
FEET

## EXPLANATION

*ALL LOCATIONS ARE APPROXIMATE*

- KB-7 — Open Standpipe Well (Kleinfelder, 2023)
- P-16 &P-17 (9-PZ) — Pneumatic Piezometer (Valley Water, 1971-1986)
- OW-29 — Open Standpipe Well (Valley Water, 2002)
- I-13 — Inclinometers with Vibrating Wire Piezometers (Valley Water, 2014)
  - VWP-1, VWP-2, and VWP-3 installed in I-30
  - VWP-4, VWP-5, and VWP-6 installed in I-31

*BASE MAP SOURCE: STANTEC*

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# GROUNDWATER MONITORING LOCATIONS

PENITENCIA WATER TREATMENT PLANT
RESIDUALS MANAGEMENT PROJECT
SAN JOSE, CALIFORNIA

| | |
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| PROJECT NO.: 19990.000.001 | FIGURE NO. 6 |
| SCALE: AS SHOWN | |
| DRAWN BY: SPPE | CHECKED BY: SOS |

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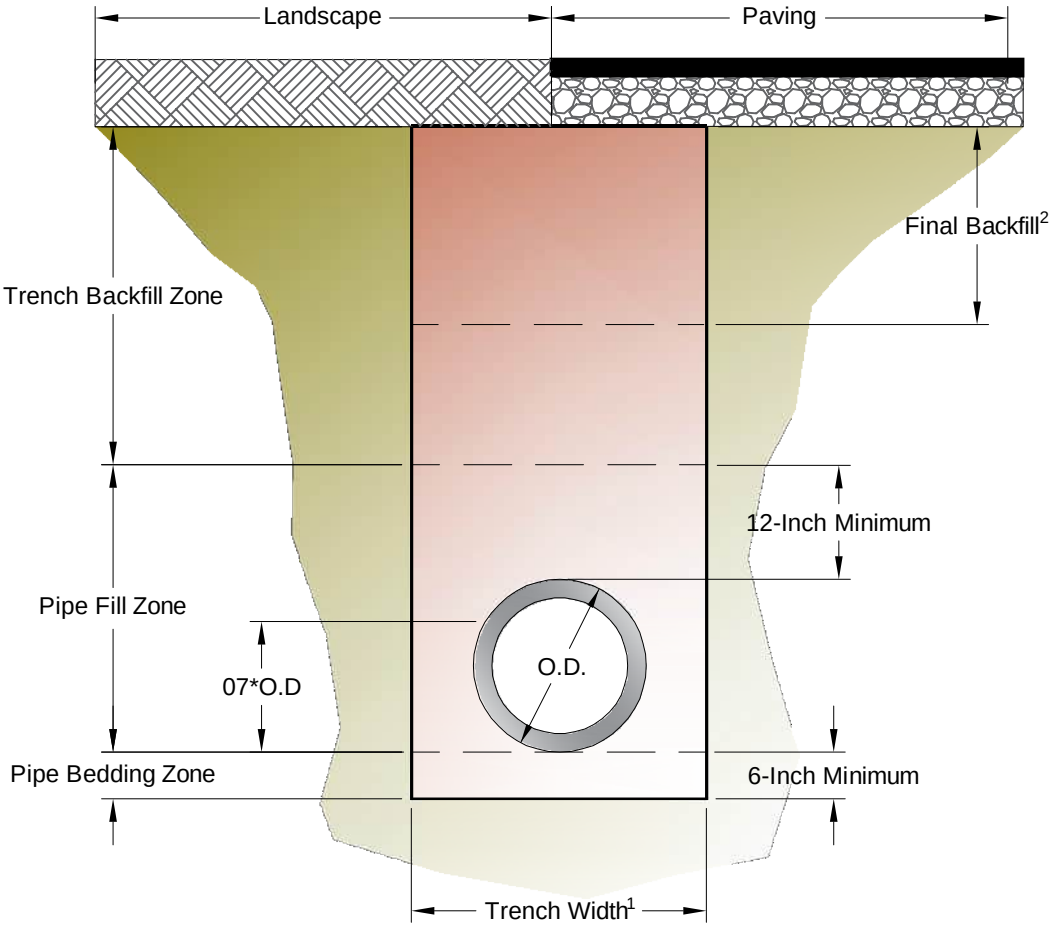


Notes:

1. Minimum trench width for granular pipe zone backfill = Outside Diameter (O.D.) + 36 inches. Trench width for CLSM pipe zone backfill = O.D. + 18 inches.

2. Final Backfill shall be compacted to 95% relative compaction per ASTM D1557 when supporting either traffic or foundation loads.

3. If CLSM is used, it should be placed above the bottom of the pipe to at least 0.7*O.D. The remaining pipe zone fill should comply with the recommendations for pipe zone fill.

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PIPE TRENCH DETAIL
PENITENCIA WATER TREATMENT PLANT
RESIDUALS MANAGEMENT PROJECT
SAN JOSE, CALIFORNIA

| | |
|---|---|
| PROJECT NO.: 19990.000.001 | FIGURE NO. 7 |
| SCALE: NO SCALE | |
| DRAWN BY: LL | CHECKED BY: SOS |

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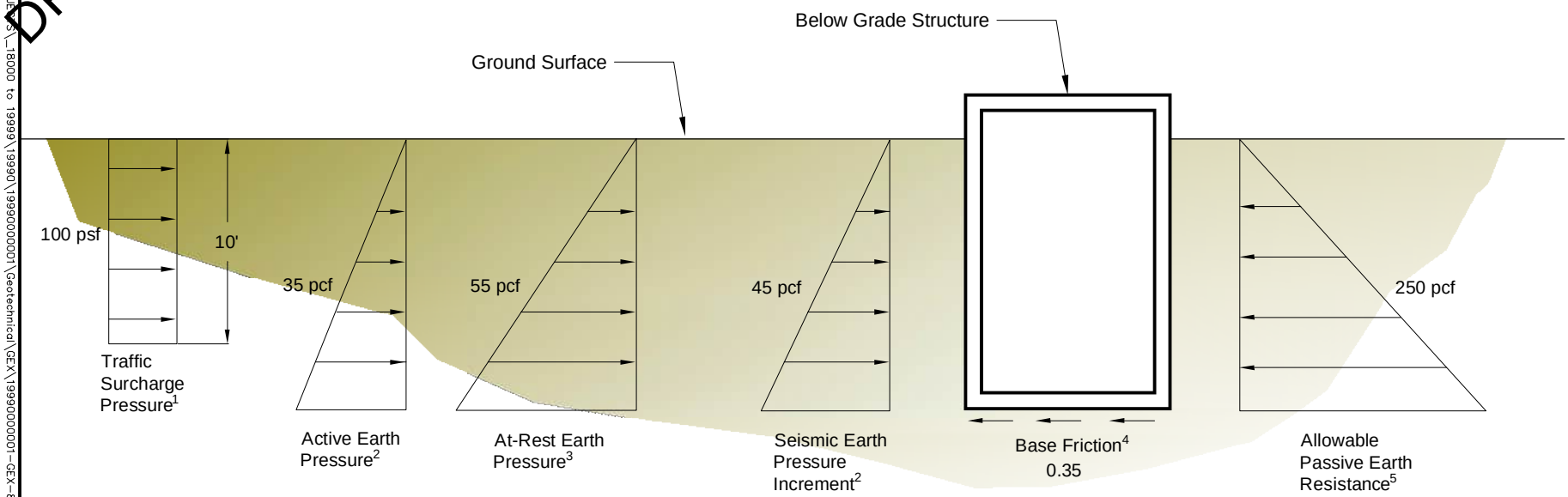


Notes:

1. Traffic surcharge pressure is based on AASHTO HS20 loading.
2. For the seismic case use the active pressure (plus hydrostatic) added to the seismic earth pressure increment.
3. For the static case, use the at-rest earth pressure for rigid non-yielding walls (e.g. most treatment facilities) and the active earth pressure for flexible unrestrained walls (e.g. retaining walls, etc.).
4. The base friction should be reduced to 0.30 if a foundation design includes a waterproofing membrane.
5. Mobilization of allowable passive resistance is based on wall movement of 1 percent of wall height.

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# LATERAL EARTH PRESSURE DIAGRAM

PENITENCIA WATER TREATMENT PLANT
RESIDUALS MANAGEMENT PROJECT
SAN JOSE, CALIFORNIA

| | |
|---|---|
| PROJECT NO.: 19990.000.001 | FIGURE NO. 8 |
| SCALE: NO SCALE | |
| DRAWN BY: LL | CHECKED BY: SOS |

ORIGINAL FIGURE PRINTED IN COLOR

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# APPENDIX A

## CURRENT BORING LOGS
## (Kleinfelder, 2023)

## SAMPLE/SAMPLER TYPE GRAPHICS

BULK SAMPLE

CALIFORNIA SAMPLER
(3 in. (76.2 mm.) outer diameter)

STANDARD PENETRATION SPLIT SPOON SAMPLER
(2 in. (50.8 mm.) outer diameter and 1-3/8 in. (34.9 mm.) inner diameter)

## GROUND WATER GRAPHICS

WATER LEVEL (level where first observed)

WATER LEVEL (level after exploration completion)

WATER LEVEL (additional levels after exploration)

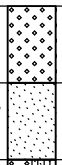
OBSERVED SEEPAGE

## NOTES

- The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.
- Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown.
- No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.
- Logs represent general soil or rock conditions observed at the point of exploration on the date indicated.
- In general, Unified Soil Classification System designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.
- Fine grained soils that plot within the hatched area on the Plasticity Chart, and coarse grained soils with between 5% and 12% passing the No. 200 sieve require dual USCS symbols, ie., GW-GM, GP-GM, GW-GC, GP-GC, GC-GM, SW-SM, SP-SM, SW-SC, SP-SC, SC-SM.
- If sampler is not able to be driven at least 6 inches then 50/X indicates number of blows required to drive the identified sampler X inches with a 140 pound hammer falling 30 inches.

**ABBREVIATIONS**
**WOH -** Weight of Hammer
**WOR -** Weight of Rod

## UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

| | | | | | | |
|---|---|---|---|---|---|---|
| **COARSE GRAINED SOILS** (More than half of material is larger than the #200 sieve) | **GRAVELS** (More than half of coarse fraction is larger than the #4 sieve) | CLEAN GRAVEL WITH <5% FINES | Cu≥4 and 1≤Cc≤3 | | **GW** | WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES |
| | | | Cu<4 and/ or 1>Cc>3 | | **GP** | POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES |
| | | GRAVELS WITH 5% TO 12% FINES | Cu≥4 and 1≤Cc≤3 | | **GW-GM** | WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES |
| | | | | | **GW-GC** | WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES |
| | | | Cu<4 and/ or 1>Cc>3 | | **GP-GM** | POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES |
| | | | | | **GP-GC** | POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES |
| | | GRAVELS WITH > 12% FINES | | | **GM** | SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES |
| | | | | | **GC** | CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES |
| | | | | | **GC-GM** | CLAYEY GRAVELS, GRAVEL-SAND-CLAY-SILT MIXTURES |
| | **SANDS** (Half or more of coarse fraction is smaller than the #4 sieve) | CLEAN SANDS WITH <5% FINES | Cu≥6 and 1≤Cc≤3 |  | **SW** | WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES |
| | | | Cu<6 and/ or 1>Cc>3 | | **SP** | POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES |
| | | SANDS WITH 5% TO 12% FINES | Cu≥6 and 1≤Cc≤3 | | **SW-SM** | WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES |
| | | | | | **SW-SC** | WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES |
| | | | Cu<6 and/ or 1>Cc>3 | | **SP-SM** | POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES |
| | | | | | **SP-SC** | POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES |
| | | SANDS WITH > 12% FINES | | | **SM** | SILTY SANDS, SAND-GRAVEL-SILT MIXTURES |
| | | | | | **SC** | CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES |
| | | | | | **SC-SM** | CLAYEY SANDS, SAND-SILT-CLAY MIXTURES |

| | | | | |
|---|---|---|---|---|
| **FINE GRAINED SOILS** (Half or more of material is smaller than the #200 sieve) | SILTS AND CLAYS (Liquid Limit less than 50) | | **ML** | INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY |
| | | | **CL** | INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS |
| | | | **CL-ML** | INORGANIC CLAYS-SILTS OF LOW PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS |
| | | | **OL** | ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY |
| | SILTS AND CLAYS (Liquid Limit 50 or greater) | | **MH** | INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT |
| | | | **CH** | INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS |
| | | | **OH** | ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY |

KLEINFELDER
*Bright People. Right Solutions.*

| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | MK |
| DATE: | 10/4/2023 |

GRAPHICS KEY

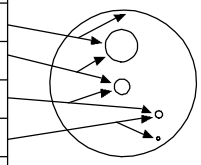
Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-1

PLOTTED: 10/18/2023 08:58 PM BY: DArakkal
PROJECT NUMBER: 20201694.018A OFFICE FILTER: SAN JOSE
gINT FILE: Klf_gint_master_2020 gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_GEO-LEG1 (GRAPHICS KEY) WITH USCS]

## GRAIN SIZE

| DESCRIPTION | | SIEVE SIZE | GRAIN SIZE | APPROXIMATE SIZE |
|---|---|---|---|---|
| Boulders | | >12 in. (304.8 mm.) | >12 in. (304.8 mm.) | Larger than basketball-sized |
| Cobbles | | 3 - 12 in. (76.2 - 304.8 mm.) | 3 - 12 in. (76.2 - 304.8 mm.) | Fist-sized to basketball-sized |
| Gravel | coarse | 3/4 -3 in. (19 - 76.2 mm.) | 3/4 -3 in. (19 - 76.2 mm.) | Thumb-sized to fist-sized |
| | fine | #4 - 3/4 in. (#4 - 19 mm.) | 0.19 - 0.75 in. (4.8 - 19 mm.) | Pea-sized to thumb-sized |
| Sand | coarse | #10 - #4 | 0.079 - 0.19 in. (2 - 4.9 mm.) | Rock salt-sized to pea-sized |
| | medium | #40 - #10 | 0.017 - 0.079 in. (0.43 - 2 mm.) | Sugar-sized to rock salt-sized |
| | fine | #200 - #40 | 0.0029 - 0.017 in. (0.07 - 0.43 mm.) | Flour-sized to sugar-sized |
| Fines | | Passing #200 | <0.0029 in. (<0.07 mm.) | Flour-sized and smaller |



## SECONDARY CONSTITUENT

| | AMOUNT | |
|---|---|---|
| Term of Use | Secondary Constituent is Fine Grained | Secondary Constituent is Coarse Grained |
| Trace | <5% | <15% |
| With | ≥5 to <15% | ≥15 to <30% |
| Modifier | ≥15% | ≥30% |

## MOISTURE CONTENT

| DESCRIPTION | FIELD TEST |
|---|---|
| Dry | Absence of moisture, dusty, dry to the touch |
| Moist | Damp but no visible water |
| Wet | Visible free water, usually soil is below water table |

## CEMENTATION

| DESCRIPTION | FIELD TEST |
|---|---|
| Weakly | Crumbles or breaks with handling or slight finger pressure |
| Moderately | Crumbles or breaks with considerable finger pressure |
| Strongly | Will not crumble or break with finger pressure |

## CONSISTENCY - FINE-GRAINED SOIL

| CONSISTENCY | SPT - $N_{60}$ (# blows / ft) | Pocket Pen (tsf) | UNCONFINED COMPRESSIVE STRENGTH ($Q_u$)(psf) | VISUAL / MANUAL CRITERIA |
|---|---|---|---|---|
| Very Soft | <2 | PP < 0.25 | <500 | Thumb will penetrate more than 1 inch (25 mm). Extrudes between fingers when squeezed. |
| Soft | 2 - 4 | 0.25 ≤ PP <0.5 | 500 - 1000 | Thumb will penetrate soil about 1 inch (25 mm). Remolded by light finger pressure. |
| Medium Stiff | 4 - 8 | 0.5 ≤ PP <1 | 1000 - 2000 | Thumb will penetrate soil about 1/4 inch (6 mm). Remolded by strong finger pressure. |
| Stiff | 8 - 15 | 1 ≤ PP <2 | 2000 - 4000 | Can be imprinted with considerable pressure from thumb. |
| Very Stiff | 15 - 30 | 2 ≤ PP <4 | 4000 - 8000 | Thumb will not indent soil but readily indented with thumbnail. |
| Hard | >30 | 4 ≤ PP | >8000 | Thumbnail will not indent soil. |

FROM TERZAGHI AND PECK, 1948; LAMBE AND WHITMAN, 1969; FHWA, 2002; AND ASTM D2488

## REACTION WITH HYDROCHLORIC ACID

| DESCRIPTION | FIELD TEST |
|---|---|
| None | No visible reaction |
| Weak | Some reaction, with bubbles forming slowly |
| Strong | Violent reaction, with bubbles forming immediately |

## APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

| APPARENT DENSITY | SPT-$N_{60}$ (# blows/ft) | MODIFIED CA SAMPLER (# blows/ft) | CALIFORNIA SAMPLER (# blows/ft) | RELATIVE DENSITY (%) |
|---|---|---|---|---|
| Very Loose | <4 | <4 | <5 | 0 - 15 |
| Loose | 4 - 10 | 5 - 12 | 5 - 15 | 15 - 35 |
| Medium Dense | 10 - 30 | 12 - 35 | 15 - 40 | 35 - 65 |
| Dense | 30 - 50 | 35 - 60 | 40 - 70 | 65 - 85 |
| Very Dense | >50 | >60 | >70 | 85 - 100 |

FROM TERZAGHI AND PECK, 1948

## PLASTICITY

| DESCRIPTION | LL | FIELD TEST |
|---|---|---|
| Non-plastic | NP | A 1/8-in. (3 mm.) thread cannot be rolled at any water content. |
| Low (L) | < 30 | The thread can barely be rolled and the lump or thread cannot be formed when drier than the plastic limit. |
| Medium (M) | 30 - 50 | The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump or thread crumbles when drier than the plastic limit. |
| High (H) | > 50 | It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump or thread can be formed without crumbling when drier than the plastic limit. |

## STRUCTURE

| DESCRIPTION | CRITERIA |
|---|---|
| Stratified | Alternating layers of varying material or color with layers at least 1/4-in. thick, note thickness. |
| Laminated | Alternating layers of varying material or color with the layer less than 1/4-in. thick, note thickness. |
| Fissured | Breaks along definite planes of fracture with little resistance to fracturing. |
| Slickensided | Fracture planes appear polished or glossy, sometimes striated. |
| Blocky | Cohesive soil that can be broken down into small angular lumps which resist further breakdown. |
| Lensed | Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness. |

## ANGULARITY

| DESCRIPTION | CRITERIA |
|---|---|
| Angular | Particles have sharp edges and relatively plane sides with unpolished surfaces. |
| Subangular | Particles are similar to angular description but have rounded edges. |
| Subrounded | Particles have nearly plane sides but have well-rounded corners and edges. |
| Rounded | Particles have smoothly curved sides and no edges. |

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 20201694.018A
DRAWN BY: DA
CHECKED BY: MK
DATE: 10/4/2023

SOIL DESCRIPTION KEY

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-2

PLOTTED: 10/18/2023 08:59 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_GEO-LEG 2 (SOIL DESC KEY)]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/22/2023 | **Drilling Company:** | EGI | **BORING LOG KB-1** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 389.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 5.5-inch Asphalt over 6.5-inch Aggregate Base | | | | | | | | | | | |
| | | | **Fat CLAY with Sand (CH)**: high plasticity, olive gray, moist, (FILL) | | | | CH | 26.1 | | | 78 | 56 | 36 | Hand Auger to 5 feet below existing grade |
| 385 | | | | | | | | | | | | | | |
| | 5 | | very stiff | | BC=4<br>7<br>10<br>PP=2.75 | 11" | | | | | | | | |
| | | | | | BC=4<br>6<br>10<br>PP=2.0 | 9" | | | | | | | | |
| 380 | | | | | | | | | | | | | | |
| | 10 | | **Lean CLAY with Sand (CL)**: medium-grained sand, medium plasticity, olive yellow, moist, very stiff | | BC=4<br>8<br>9<br>PP=2.0<br>PP=2.5 | 16" | CL | 24.2 | 101.7 | | 80 | 47 | 29 | |
| 375 | | | | | | | | | | | | | | |
| | 15 | | | | BC=9<br>12<br>13<br>PP=3.75<br>PP=3.5 | 17" | | | | | | | | |
| 370 | | | | | | | | | | | | | | |
| | 20 | | **Sandy Lean CLAY (CL)**: fine to medium-grained sand, low plasticity, olive yellow, moist, very stiff | | BC=5<br>11<br>18 | 17" | | 21.4 | | | | | | |
| 365 | | | | | | | | | | | | | | |
| | 25 | | pale olive | | BC=6<br>10<br>14<br>PP=3.5 | 18" | | | | | | | | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | medium plasticity, with fine grained sand, yellowish brown | | BC=4<br>8<br>14 | 18" | | | | | | | | |
| | | | **Clayey SAND with Gravel (SC)**: fine to coarse-grained sand, fine-grained gravel, low plasticity, gray and light brownish gray, moist, medium dense | | | | | | | | | | | |
| 355 | | | | | | | | | | | | | | |

KLEINFELDER
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PROJECT NO.: 20201694.018A
DRAWN BY: DA
CHECKED BY: CC
DATE: 8/24/2023

BORING LOG KB-1

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-3a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:47 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/22/2023 | **Drilling Company:** | EGI | **BORING LOG KB-1** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 389.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 350 | 40 | | **Clayey SAND (SC)**: fine-grained sand, non-plastic, reddish and yellowish brown, moist, dense | | BC=11<br>18<br>23 | 18" | | | | | | | | |
| 345 | 45 | | **Poorly Graded SAND with Clay (SP-SC)**: fine-grained sand, non-plastic, bluish gray, moist, dense | | BC=19<br>21<br>29 | 18" | | | | | | | | |
| 340 | 50 | | **Lean CLAY with Sand (CL)**: fine-grained sand, medium plasticity, olive brown, moist, very stiff to hard | | BC=9<br>16<br>22<br>PP=3.0<br>PP=3.5 | 18" | | | | | | | | |
| | | | | | BC=9<br>12<br>21<br>PP=3.75<br>PP=4.5+ | 17" | | | | | | | | |
| 335 | 55 | | | | | | | | | | | | | |
| 330 | 60 | | | | | | | | | | | | | |
| 325 | 65 | | | | | | | | | | | | | |
| 320 | | | | | | | | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was backfilled with Portland cement grout, capped with concrete and black dye on August 22, 2023.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-1

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-3b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:47 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/23/2023 | **Drilling Company:** | EGI | **BORING LOG KB-2** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

FIELD EXPLORATION

Approximate Ground Surface Elevation (ft.): 388.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4-inch Asphalt | | | | | | | | | | | Hand Auger to 5 feet below existing grade |
| | | | **Sandy Fat CLAY (CH)**: high plasticity, pale olive to olive gray, moist, (FILL) | | | | CH | 27.2 | | | 60 | 65 | 43 | |
| 385 | | | | | | | | | | | | | | |
| | 5 | | stiff to very stiff | | BC=5<br>7<br>9 | 14" | | 30.4 | 92.2 | | | | | |
| 380 | | | | | BC=4<br>7<br>9<br>PP=2.0<br>PP=2.5 | 10" | | | | | | | | |
| | 10 | | | | BC=4<br>5<br>8 | 18" | | | | 88 | 63 | | | |
| 375 | | | **Sandy Lean CLAY (CL)**: medium to coarse-grained sand, trace fine-grained gravel, angular gravel, medium plasticity, moist, stiff | | | | | | | | | | | |
| | 15 | | **Clayey SAND (SC)**: fine to medium-grained sand, non-plastic, light brownish and bluish gray, moist | | | | | | | | | | | |
| | | | **Lean CLAY with Sand (CL)**: fine to medium-grained sand, pale olive, moist, very stiff | | BC=6<br>9<br>14<br>PP=3.5 | 18" | CL | | | | 85 | 44 | 25 | |
| 370 | | | | | | | | | | | | | | |
| | 20 | | **Sandy Lean CLAY (CL)**: fine-grained sand, medium plasticity, yellowish brown lamintaed with light brownish gray, moist, very stiff | | BC=4<br>7<br>12<br>PP=3.5 | 18" | | | | | | | | |
| 365 | | | | | | | | | | | | | | |
| | 25 | | fine to coarse-grained sand, reddish brown and yellowish brown, trace fine gravel | | BC=6<br>13<br>18 | 18" | | 19.4 | | | 63 | | | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | **Clayey SAND with Gravel (SC)**: fine to medium-grained sand, low plasticity, yellowish brown laminated with light brownish and bluish gray, moist, medium dense | | BC=6<br>11<br>14 | 18" | | | | | | | | |
| 355 | | | **Sandy Lean CLAY (CL)**: fine to medium-grained sand, medium plasticity, yellowish brown laminated with light brownish gray, moist, very stiff | | | | | | | | | | | |

LABORATORY RESULTS

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-2

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-4a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:47 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/23/2023 | **Drilling Company:** | EGI | **BORING LOG KB-2** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

FIELD EXPLORATION

Approximate Ground Surface Elevation (ft.): 388.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) |
|---|---|---|---|---|---|---|
| 350 | | | **Sandy Lean CLAY (CL)**: fine to medium-grained sand, medium plasticity, yellowish brown laminated with light brownish gray, moist, very stiff | | BC=8<br>9<br>13<br>PP=3.75 | 18" |
| | 40 | | fine-grained sand, low plasticity, brown | | BC=6<br>9<br>13<br>PP=3.25<br>PP=3.0 | 18" |
| 345 | | | | | | |
| | 45 | | medium plasticity, increase in fine gravel, hard | | BC=6<br>13<br>19<br>PP=4.5+<br>PP=4.0 | 18" |
| 340 | | | | | | |
| | 50 | | decrease in gravel content | | BC=9<br>16<br>28<br>PP=4.0<br>PP=4.5+ | 18" |
| 335 | | | | | | |
| | 55 | | | | | |
| 330 | | | | | | |
| | 60 | | | | | |
| 325 | | | | | | |
| | 65 | | | | | |
| 320 | | | | | | |

LABORATORY RESULTS

| USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was backfilled with Portland cement grount, capped with concrete and black dye on August 23, 2023.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
Bright People. Right Solutions.

| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-2

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-4b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:47 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/18/2023 | **Drilling Company:** | EGI | **BORING LOG KB-4** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

FIELD EXPLORATION

Approximate Ground Surface Elevation (ft.): 386.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 385 | 0 | | 4.5-inch Asphalt over 10.5-inch Aggregate Base | | | | | | | | | | | Hand Auger to 5 feet below existing grade |
| | | | **Clayey SAND (SC)**: fine to coarse-grained sand, olive, moist (FILL) | | | | SC | 20.7 | | | 45 | 57 | 35 | |
| | 5 | | **Sandy Lean CLAY (CL)**: fine to medium-grained sand, medium plasticity, olive, moist, stiff | | BC=3<br>6<br>7<br>PP=1.25 | 18" | | | | | | | | |
| 380 | | | | | | | | 24.3 | 94.2 | | | | | |
| | | | | | BC=1<br>4<br>7<br>PP=1.5 | 13" | | | | | 69 | | | |
| | 10 | | very stiff | | BC=2<br>6<br>8<br>PP=2.0 | 18" | | | | | | | | |
| 375 | | | | | | | | | | | | | | |
| | | | **Lean CLAY with Sand (CL)**: fine to coarse-grained sand, medium plasticity, olive brown, moist, very stiff | | | | | | | | | | | |
| | 15 | | | | BC=3<br>7<br>10<br>PP=2.5 | 12" | | | | | 74 | | | |
| 370 | | | | | | | | | | | | | | |
| | 20 | | | | BC=5<br>8<br>6<br>PP=2.0 | 18" | | | | | | | | |
| 365 | | | | | | | | | | | | | | |
| | | | fine-grained sand, pale olive, very stiff to hard | | | | | | | | | | | |
| | 25 | | | | BC=6<br>10<br>17<br>PP=4.5+<br>PP=3.75 | 18" | | | | | | | | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | hard | | BC=6<br>11<br>16<br>PP=4.5+<br>PP=4.25 | 18" | | | | | | | | |
| 355 | | | | | | | | | | | | | | |

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-4

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-5a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:48 PM BY: DArakkal
PROJECT NUMBER: 20201694.018A OFFICE FILTER: SAN JOSE
gINT FILE: Klf_gint_master_2020 gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/18/2023 | **Drilling Company:** | EGI | **BORING LOG KB-4** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 386.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 350 | | | **Sandy Lean CLAY (CL)**: fine to medium-grained sand, low to medium plasticity, pale olive with interbedded/lense of light brownish gray, moist, hard | | BC=7<br>11<br>17<br>PP=4.0<br>PP=4.5+ | 18" | | | | | | | | |
| 345 | 40 | | **Sandy Lean CLAY with Gravel (CL)**: fine to coarse-grained sand, low plasticity, pale olive, moist, very stiff to hard, with fine gravel | | BC=8<br>10<br>17<br>PP=4.25<br>PP=3.75<br>PP=4.5+ | 18" | | | | | | | | |
| 340 | 45 | | **Clayey SAND with Gravel (SC)**: fine to coarse-grained sand, low plasticity, yellow to dark reddish brown, moist, medium dense, pale olive fines, with gravel up to 2" | | BC=7<br>12<br>18 | 18" | | | | | | | | |
| | 50 | | **Sandy Lean CLAY (CL)**: fine to medium-grained sand, low to medium plasticity, dark brown, moist, hard, with fine gravel | | BC=7<br>13<br>21<br>PP=4.5+ | 15" | | | | | | | | |
| 335 | | | | | | | | | | | | | | |
| | 55 | | | | | | | | | | | | | |
| 330 | | | | | | | | | | | | | | |
| | 60 | | | | | | | | | | | | | |
| 325 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | |
| 320 | | | | | | | | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was converted to a monitoring well, see Figure 3 in the main report for construction details.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-4

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-5b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:48 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

**BORING LOG KB-5**

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/17/2023 | **Drilling Company:** | EGI | | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

FIELD EXPLORATION

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4-inch Asphalt | | | | | | | | | | | Hand Auger to 5 feet below existing grade |
| 385 | | | **Sandy Fat CLAY (CH)**: fine to medium-grained sand, high plasticity, olive brown and olive, moist, (FILL) | | | | | | | | | | | |
| | 5 | | medium-grained sand, stiff | | BC=3<br>4<br>5 | 18" | CH | 20.8 | 101.5 | | 70 | 52 | 34 | |
| 380 | | | | | BC=4<br>6<br>8<br>PP=1.5 | 18" | | | | | | | | |
| | 10 | | fine to medium-grained sand, very stiff | | BC=5<br>7<br>12<br>PP=2.5 | 18" | | | | | | | | |
| 375 | | | | | | | | | | | | | | |
| | 15 | | olive gray | | BC=2<br>6<br>9<br>PP=2.75 | 18" | | 24.6 | | | | | | |
| 370 | | | | | | | | | | | | | | |
| | 20 | | fine-grained sand, pale olive | | BC=4<br>8<br>10<br>PP=3.5 | 18" | | 23.5 | 101.1 | | 80 | | | |
| 365 | | | | | | | | | | | | | | |
| | 25 | | hard | | BC=4<br>9<br>12<br>PP=4.0 | 18" | | | | | | | | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | **Clayey SAND with Gravel (SC)**: fine to coarse-grained sand, pale olive and olive, moist, medium dense, with gravel up to 2" | | BC=4<br>7<br>10 | 18" | | | | | | | | |
| 355 | | | | | | | | | | | | | | |

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-5

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-6a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:48 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/17/2023 | **Drilling Company:** | EGI | **BORING LOG KB-5** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

FIELD EXPLORATION | LABORATORY RESULTS

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 350 | | | **Lean CLAY (CL)**: medium plasticity, olive, moist, very stiff | | BC=12<br>5<br>10<br>PP=2.0 | 18" | | | | | | | | |
| | 40 | | **Clayey SAND (SC)**: fine to coarse-grained sand, non-plastic, yellowish brown, moist, medium dense | | BC=4<br>12<br>18 | 18" | | | | | | | | |
| 345 | | | **Sandy Lean CLAY (CL)**: fine-grained sand, medium plasticity, olive, moist, hard<br><br>light brownish gray | | | | | | | | | | | |
| | 45 | | | | BC=7<br>15<br>17<br>PP=4.5+ | 18" | | | | | | | | |
| 340 | | | **Clayey SAND (SC)**: fine-grained sand, low plasticity, olive, moist, medium dense | | | | | | | | | | | |
| | 50 | | | | BC=9<br>12<br>15 | 18" | | | | | | | | |
| 335 | | | | | | | | | | | | | | |
| | 55 | | | | | | | | | | | | | |
| 330 | | | | | | | | | | | | | | |
| | 60 | | | | | | | | | | | | | |
| 325 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | |
| 320 | | | | | | | | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was backfilled with Portland cement grout, capped with concrete and black dye on August 17, 2023.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-5

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-6b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:48 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/17/2023 | **Drilling Company:** | EGI | **BORING LOG KB-6** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 5-inch Asphalt | | | | | | | | | | | |
| 385 | | | **Clayey SAND (SC)**: fine to medium-grained sand, high plasticity, olive, moist, (FILL) | | | | SC | 21.7 | | | 46 | 60 | 38 | Hand Auger to 5 feet below existing grade |
| | 5 | | **Sandy Fat CLAY (CH)**: fine to medium-grained sand, medium to high plasticity, olive and olive gray, moist, very stiff, (FILL) | | BC=5<br>7<br>9<br>PP=2.75<br>PP=2.25 | 18" | | 20.7 | 104.0 | | 67 | | | |
| 380 | | | fine-grained sand, olive and pale olive | | BC=5<br>7<br>9<br>PP=2.5 | 18" | | | | | | | | |
| | 10 | | | | BC=5<br>7<br>10 | 2" | | | | | | | | |
| 375 | | | | | | | | | | | | | | |
| | 15 | | **Poorly Graded SAND with Gravel (SP)**: reddish brown, dry, medium dense, strongly cemented Sandstone | | BC=7<br>11<br>16 | NR | | | | | | | | |
| 370 | | | | | | | | | | | | | | |
| | 20 | | **Sandy Lean CLAY (CL)**: fine to coarse-grained sand, low plasticity, pale olive, moist, very stiff to hard | | BC=12<br>16<br>20<br>PP=4.5+ | 13" | | 19.2 | | | 53 | | | |
| 365 | | | | | | | | | | | | | | |
| | 25 | | yellowish brown | | BC=7<br>11<br>14<br>PP=4.5+<br>PP=3.0 | 18" | | | | | | | | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | medium-grained sand, olive brown | | BC=11<br>14<br>19<br>PP=4.5+<br>PP=4.0 | 18" | | | | | | | | |
| 355 | | | | | | | | | | | | | | |

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|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-6

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-7a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:49 PM BY: DArakkal
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]
PROJECT NUMBER: 20201694.018A
OFFICE FILTER: SAN JOSE

**Date Begin - End:** 8/17/2023 **Drilling Company:** EGI

**Logged By:** C. Conti **Drill Crew:** Loren, Lyle, Gabriel

**Hor.-Vert. Datum:** Not Available **Drilling Equipment:** B-53B **Hammer Type - Drop:** 140 lb. Auto - 30 in.

**Plunge:** -90 degrees **Drilling Method:** Hollow Stem Auger

**Weather:** Sunny **Exploration Diameter:** 8" in. O.D.

# BORING LOG KB-6

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 350 | | | **Clayey SAND (SC)**: fine to coarse-grained sand, non-plastic, pale olive, moist, medium dense | | BC=9<br>14<br>21 | 18" | | | | | | | | |
| | 40 | | **Lean CLAY (CL)**: medium plasticity, yellowish brown, moist, hard | | BC=12<br>15<br>20<br>PP=4.5+ | 18" | | | | | | | | |
| 345 | | | | | | | | | | | | | | |
| | 45 | | **Clayey SAND (SC)**: fine to coarse-grained sand, non-plastic, light brownish gray and bluish gray, moist, medium dense | | BC=10<br>15<br>23 | 18" | | | | | | | | |
| 340 | | | | | | | | | | | | | | |
| | 50 | | **Lean CLAY (CL)**: olive brown, moist, hard | | BC=17<br>28<br>36<br>PP=4.5+ | 18" | | | | | | | | |
| 335 | | | | | | | | | | | | | | |
| | 55 | | | | | | | | | | | | | |
| 330 | | | | | | | | | | | | | | |
| | 60 | | | | | | | | | | | | | |
| 325 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | |
| 320 | | | | | | | | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was backfilled with Portland cement grout, capped with concrete and black dye on August 17, 2023.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-6

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-7b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:49 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/22/2023 | **Drilling Company:** | EGI | **BORING LOG KB-7** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 388.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4-inch Asphalt over 6-inch Aggregate Base | | | | | | | | | | | |
| 385 | | | **Sandy Fat CLAY (CH)**: medium to coarse-grained sand, olive, moist, trace fine gravel (FILL) | | | | CH | 27.5 | | 92 | 61 | 68 | 44 | Hand Auger to 5 feet below existing grade |
| | 5 | | fine to medium-grained sand, high plasticity, olive gray, stiff | | BC=3<br>4<br>8<br>PP=2.0 | 12" | | 25.3 | 95.8 | | 69 | | | |
| 380 | | | **Sandy Lean CLAY with Gravel (CL)**: fine to coarse-grained sand, low plasticity, light brownish gray, moist, hard | | BC=6<br>9<br>11 | 18" | | | | | | | | |
| | 10 | | **Lean CLAY with Sand (CL)**: medium plasticity, light brownish gray, moist, very stiff | | BC=5<br>8<br>13<br>PP=3.5 | 12" | | | | | | | | |
| 375 | | | | | | | | | | | | | | |
| | 15 | | **Sandy Lean CLAY (CL)**: fine to coarse-grained sand, low plasticity, pale olive, moist, very stiff | | BC=6<br>8<br>12<br>PP=3.5 | 18" | | 17.3 | | | 50 | | | |
| 370 | | | **Clayey SAND with Gravel (SC)**: fine to coarse-grained, non-plastic, plae olive, yellowish brown and reddish brown, moist, medium dense, with fine gravel | | | | | | | | | | | |
| | 20 | | | | BC=7<br>12<br>18 | 16" | | | | 92 | 42 | | | |
| 365 | | | **Clayey SAND (SC)**: fine-grained sand, non-plastic, yellowish brown, moist, dense | | | | | | | | | | | |
| | 25 | | | | BC=11<br>24<br>33 | 18" | | | | | | | | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | yellowish brown and reddish brown | | BC=9<br>16<br>24 | 14" | | | | | | | | |
| 355 | | | **Poorly Graded SAND with Gravel (SP)**: non-plastic, bluish gray, moist | | | | | | | | | | | |

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|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-7

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-8a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:49 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/22/2023 | **Drilling Company:** | EGI | **BORING LOG KB-7** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

FIELD EXPLORATION

Approximate Ground Surface Elevation (ft.): 388.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) |
|---|---|---|---|---|---|---|
| | | | | | BC=6<br>12<br>16<br>PP=4.25 | 18" |
| | | | **Sandy Lean CLAY (CL)**: fine-grained sand, medium plasticity, pale olive, moist, hard | | | |
| 350 | | | **Clayey SAND with Gravel (SC)**: low plasticity, pale olive and light brownish gray, moist, dense, with fine gravel | | | |
| | 40 | | | | BC=12<br>27<br>31 | 18" |
| 345 | | | | | | |
| | 45 | | | | BC=10<br>15<br>21<br>PP=4.5+ | 18" |
| | | | **Sandy Lean CLAY (CL)**: fine-grained sand, low to medium plasticity, olive brown, moist, hard | | | |
| 340 | | | | | | |
| | | | light brownish gray and yellowish brown | | BC=9<br>14<br>23<br>PP=4.5+ | 18" |
| | 50 | | | | | |
| 335 | | | | | | |
| | 55 | | | | | |
| 330 | | | | | | |
| | 60 | | | | | |
| 325 | | | | | | |
| | 65 | | | | | |
| 320 | | | | | | |

LABORATORY RESULTS

| USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was backfilled with Portland cement grout, capped with concrete and black dye on August 22, 2023.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-7

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-8b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:49 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

**Date Begin - End:** 8/15/2023 **Drilling Company:** EGI

**Logged By:** C. Conti **Drill Crew:** Loren, Lyle, Gabriel

**Hor.-Vert. Datum:** Not Available **Drilling Equipment:** B-53B **Hammer Type - Drop:** 140 lb. Auto - 30 in.

**Plunge:** -90 degrees **Drilling Method:** Hollow Stem Auger

**Weather:** Sunny **Exploration Diameter:** 8" in. O.D.

# BORING LOG KB-8

Approximate Ground Surface Elevation (ft.): 386.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | FIELD EXPLORATION | | | | LABORATORY RESULTS | | | | | | | |
| 385 | | | 5-inch Asphalt over 13-inch Aggregate Base | | | | | | | | | | | Hand Auger to 5 feet below existing grade |
| | | | **Sandy Fat CLAY (CH)**: coarse-grained, olive brown, moist, trace fine gravel (FILL) | | | | CH | 19.1 | | | 57 | 53 | 34 | |
| 380 | 5 | | fine to coarse-grained sand, yellowish brown, very stiff, with fine gravel | | BC=3<br>5<br>9<br>PP=2.5 | 11" | | 22.0 | 102.3 | | 73 | | | |
| | | | | | BC=4<br>8<br>12<br>PP=3.5 | 12" | | | | | | | | |
| | | | **Sandy Lean CLAY with Gravel (CL)**: fine to coarse-grained sand, medium plasticity, light brownish gray, moist, very stiff | | | | | | | | | | | |
| 375 | 10 | | **Sandy Lean CLAY (CL)**: fine to coarse-grained sand, medium plasticity, yellowish brown, moist, very stiff, trace fine gravel | | BC=3<br>7<br>9<br>PP=3.0 | 17" | | 17.1 | | | 53 | | | |
| | | | increase in fine to coarse gravel content | | BC=9<br>17<br>14 | 2" | | | | | | | | |
| 370 | 15 | | | | | | | | | | | | | |
| | | | yellowish brown clayey sand layer at 20' | | BC=6<br>15<br>15 | 17" | | | | | | | | |
| 365 | 20 | | | | | | | | | | | | | |
| | | | | | BC=7<br>9<br>14<br>PP=2.5 | 17" | | 17.1 | | | 64 | | | |
| 360 | 25 | | | | | | | | | | | | | |
| | | | **Clayey SAND with Gravel (SC)**: fine to coarse-grained sand, low plasticity, pale olive and olive, moist, medium dense, with angular to sub-angular gravel | | | | | | | | | | | |
| 355 | 30 | | | | BC=12<br>16<br>22 | 17" | | | | | | | | |

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PROJECT NO.: 20201694.018A
DRAWN BY: DA
CHECKED BY: CC
DATE: 8/24/2023

BORING LOG KB-8

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-9a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:50 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/15/2023 | **Drilling Company:** | EGI | **BORING LOG KB-8** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

FIELD EXPLORATION | LABORATORY RESULTS

Approximate Ground Surface Elevation (ft.): 386.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 350 | | | **Clayey SAND with Gravel (SC)**: fine to coarse-grained sand, low plasticity, pale olive and olive, moist, medium dense, with angular to sub-angular gravel | | BC=9<br>14<br>18 | 18" | | | | | | | | |
| | 40 | | dense | | BC=14<br>25<br>42 | 17" | | | | | | | | |
| 345 | | | **Lean CLAY (CL)**: medium plasticity, yellowish brown, moist, hard | | | | | | | | | | | |
| | 45 | | | | BC=14<br>23<br>32 | 16" | | | | | | | | |
| 340 | | | | | PP=4.5+ | | | | | | | | | |
| | | | | | BC=13<br>22<br>34 | 16" | | | | | | | | |
| | 50 | | | | PP=4.5+ | | | | | | | | | |
| 335 | | | | | | | | | | | | | | |
| | 55 | | | | | | | | | | | | | |
| 330 | | | | | | | | | | | | | | |
| | 60 | | | | | | | | | | | | | |
| 325 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | |
| 320 | | | | | | | | | | | | | | |

The boring was terminated at approximately 48.5 ft. below ground surface. The boring was backfilled with Portland cement grount, capped with concrete and black dye on August 15, 2023.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-8

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-9b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:50 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/22/2023 | **Drilling Company:** | EGI | **BORING LOG KB-9** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4-inch Asphalt over 8-inch Aggregate Base | | | | | | | | | | | Hand Auger to 5 feet below existing grade |
| 385 | | | **Fat CLAY with Sand (CH)**: fine-grained sand, yellowish brown, moist, (FILL) | | | | CH | 22.9 | | | 78 | 58 | 38 | |
| | 5 | | medium-grained sand, stiff to very stiff | | BC=3<br>5<br>10 | 17" | | 20.7 | 102.9 | | | | | |
| 380 | | | trace fine gravel | | BC=2<br>5<br>10<br>PP=2.5 | 18" | | | | | | | | |
| | 10 | | **Clayey SAND with Gravel (SC)**: angular, non-plastic, pale olive, moist, medium dense, trace intensely weathered to decomposed sandstone | | BC=7<br>9<br>14 | 18" | | 14.2 | | | 40 | | | |
| 375 | | | **Sandy Lean CLAY (CL)**: fine-grained sand, medium plasticity, light brownish gray with lenses of yellowish brown, moist, very stiff | | | | | 19.9 | | | 62 | | | |
| | 15 | | increase in medium to coarse grained sand | | BC=5<br>11<br>14<br>PP=3.0<br>PP=3.5 | 17" | | | | | | | | |
| 370 | | | | | | | | | | | | | | |
| | 20 | | yellowish brown, trace fine gravel | | BC=5<br>9<br>18<br>PP=3.5 | 18" | | | | | | | | |
| 365 | | | | | | | | | | | | | | |
| | 25 | | yellowish brown and dark reddish brown, hard, trace intensely weathered to decomposed claystone | | BC=11<br>18<br>30<br>PP=4.5+ | 18" | | | | | | | | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | increase in sand content | | BC=11<br>12<br>22<br>PP=4.5+ | 18" | | | | | | | | |
| 355 | | | | | | | | | | | | | | |

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PROJECT NO.: 20201694.018A
DRAWN BY: DA
CHECKED BY: CC
DATE: 8/24/2023

BORING LOG KB-9

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-10a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:50 PM BY: DArakkal
PROJECT NUMBER: 20201694.018A OFFICE FILTER: SAN JOSE
gINT FILE: Klf_gint_master_2020 gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/22/2023 | **Drilling Company:** | EGI | **BORING LOG KB-9** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | FIELD EXPLORATION | | | | LABORATORY RESULTS | | | | | | | |
| 350 | | | **Sandy Lean CLAY (CL)**: fine-grained sand, medium plasticity, light brownish gray with lenses of yellowish brown, moist, very stiff | | BC=10<br>20<br>32<br>PP=4.5+ | 18" | | | | | | | | |
| | 40 | | fine to medium-grained sand, yellowish brown, trace intensely weathered to decomposed claystone | | BC=11<br>24<br>40<br>PP=4.5+ | 18" | | | | | | | | |
| 345 | | | | | | | | | | | | | | |
| | 45 | | | | BC=16<br>32<br>47<br>PP=4.5+ | 18" | | | | | | | | |
| 340 | | | **Clayey SAND (SC)**: medium to coarse-grained sand, angular, non-plastic, olive and olive brown, moist, very dense | | | | | | | | | | | |
| | 50 | | **Lean CLAY (CL)**: medium plasticity, yellowish brown and reddish brown, moist, hard, strongly cemented claystone | | BC=15<br>35<br>50/4"<br>PP=4.5+ | 18" | | | | | | | | |
| 335 | | | | | | | | | | | | | | |
| | 55 | | | | | | | | | | | | | |
| 330 | | | | | | | | | | | | | | |
| | 60 | | | | | | | | | | | | | |
| 325 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | |
| 320 | | | | | | | | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was backfilled with Portland cement grout, capped with concrete and black dye on August 22, 2023.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-9

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-10b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:50 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/23/2023 | **Drilling Company:** | EGI | **BORING LOG KB-10** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3.5-inch Asphalt over 5.5-inch Aggregate Base | | | | | | | | | | | Hand Auger to 5 feet below existing grade |
| 385 | | | **Sandy Fat CLAY (CH)**: fine to medium-grained sand, medium to high plasticity, gray, moist, (FILL) | | | | | | | | | | | |
| | 5 | | olive, very stiff | | BC=2<br>4<br>7<br>PP=2.0 | 6" | CH | 25.7 | | | 53 | 55 | 29 | |
| 380 | | | yellow | | BC=5<br>8<br>10 | NR | | | | | | | | |
| | 10 | | **Sandy Lean CLAY (CL)**: fine to medium-grained sand, medium plasticity, yellowish brown, moist, very stiff | | BC=4<br>6<br>8<br>PP=2.5 | 18" | | | | | | | | |
| 375 | | | | | | | | | | | | | | |
| | 15 | | fine-grained sand, yellowish brown with laminated gray and light brownish gray | | BC=6<br>10<br>13<br>PP=3.5 | 18" | | 18.0 | | | | | | |
| 370 | | | | | | | | | | | | | | |
| | 20 | | **Clayey SAND (SC)**: fine to coarse-grained sand, low plasticity, yellowish brown and reddish brown, moist, medium dense | | BC=4<br>7<br>11 | 18" | SC | 15.3 | | | 41 | 41 | 24 | |
| 365 | | | | | | | | | | | | | | |
| | 25 | | **Sandy Lean CLAY (CL)**: fine to medium-grained sand, medium plasticity, brown and olive brown, moist, very stiff, trace gravel | | BC=5<br>10<br>16 | 18" | | | | 99 | 71 | | | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | increase in fine to coarse gravel | | BC=11<br>16<br>15 | 18" | | | | | | | | |
| 355 | | | | | | | | | | | | | | |

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-10

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-11a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:50 PM BY: DArakkal
PROJECT NUMBER: 20201694.018A OFFICE FILTER: SAN JOSE
gINT FILE: Klf_gint_master_2020 gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/23/2023 | **Drilling Company:** | EGI | **BORING LOG KB-10** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Poorly Graded GRAVEL with Sand (GP)**: fine-grained gravel, non-plastic, moist | | BC=6<br>9<br>13 | 18" | | | | | | | | |
| 350 | | | **Sandy Lean CLAY (CL)**: fine-grained sand, medium plasticity, dark reddish brown, moist, very stiff | | | | | | | | | | | |
| | 40 | | increase in sand content | | BC=10<br>15<br>21<br>PP=4.5+ | 15" | | | | | | | | |
| 345 | | | **Sandy Lean CLAY with Gravel (CL)**: fine-grained sand, medium plasticity, yellowish brown, moist, very stiff to hard | | | | | | | | | | | |
| | 45 | | fine to coarse-grained sand, increase in fine gravel | | BC=10<br>11<br>16<br>PP=3.0<br>PP=4.0 | 18" | | | | | | | | |
| 340 | | | | | | | | | | | | | | |
| | | | fine to medium-grained sand, brown and yellowish brown | | BC=8<br>12<br>17<br>PP=4.5+<br>PP=2.5 | 17" | | | | | | | | |
| | 50 | | | | | | | | | | | | | |
| 335 | | | | | | | | | | | | | | |
| | 55 | | | | | | | | | | | | | |
| 330 | | | | | | | | | | | | | | |
| | 60 | | | | | | | | | | | | | |
| 325 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | |
| 320 | | | | | | | | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was backfilled with Portland cement grout, capped with concrete and black dye on August 23, 2023.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-10

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-11b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:50 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/15/2023 - 8/16/2023 | **Drilling Company:** | EGI | **BORING LOG KB-11** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

FIELD EXPLORATION

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4-inch Asphalt over 8-inch Aggregate Base | | | | | | | | | | | Hand Auger to 5 feet below existing grade |
| 385 | | | **Fat CLAY with Sand (CH)**: olive gray, moist, (FILL) | | | | CH | 24.5 | | | 77 | 66 | 47 | |
| | 5 | | medium-grained sand, olive brown, moist, very stiff | | BC=3<br>7<br>13 | 12" | CH | 21.9 | 100.9 | | 75 | 56 | 34 | |
| 380 | | | **Sandy Lean CLAY (CL)**: fine to medium-grained sand, medium plasticity, olive, very stiff | | BC=4<br>8<br>12 | 18" | | | | | | | | |
| | 10 | | increase in fine-grained sand | | BC=4<br>9<br>14 | 10" | | | | | | | | |
| 375 | | | **Clayey SAND (SC)**: fine to coarse-grained sand, low plasticity, moist, loose | | | | | | | | | | | |
| | 15 | | | | BC=2<br>5<br>6 | 18" | | | | | 37 | | | |
| 370 | | | | | | | | | | | | | | |
| | 20 | | **Sandy Lean CLAY (CL)**: medium to coarse-grained sand, low to medium plasticity, yellowish brown, moist, very stiff to hard, angular gravel | | BC=5<br>12<br>19<br>PP=4.25 | 18" | | | | | | | | |
| 365 | | | | | | | | | | | | | | |
| | 25 | | | | BC=7<br>9<br>13<br>PP=3.0<br>PP=2.0 | 18" | | | | | | | | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | **Sandy Lean CLAY with Gravel (CL)**: medium to coarse-grained sand, low plasticity, yellowish brown, moist, hard | | BC=11<br>18<br>30<br>PP=4.5+ | 18" | | | | | | | | |
| 355 | | | | | | | | | | | | | | |

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PROJECT NO.: 20201694.018A
DRAWN BY: DA
CHECKED BY: CC
DATE: 8/24/2023

BORING LOG KB-11

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-12a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:51 PM BY: DArakkal
PROJECT NUMBER: 20201694.018A
OFFICE FILTER: SAN JOSE
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/15/2023 - 8/16/2023 | **Drilling Company:** | EGI | **BORING LOG KB-11** | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 350 | | | **Sandy Lean CLAY (CL)**: fine-grained sand, low plasticity, yellowish brown, moist, hard | | BC=5<br>10<br>24<br>PP=4.5+ | 18" | | | | | | | | |
| | 40 | | fine to medium-grained sand, low to medium plasticity, pale olive and olive | | BC=10<br>25<br>30<br>PP=4.5+ | 18" | | | | | | | | |
| 345 | | | | | | | | | | | | | | |
| | 45 | | fine to coarse-grained sand, reddish brown and dark reddish brown | | BC=12<br>22<br>27<br>PP=4.5+ | 18" | | | | | | | | |
| 340 | | | | | | | | | | | | | | |
| | 50 | | medium-grained sand, olive brown | | BC=9<br>16<br>30<br>PP=4.5+ | 17" | | | | | | | | |
| 335 | | | | | | | | | | | | | | |
| | 55 | | | | | | | | | | | | | |
| 330 | | | | | | | | | | | | | | |
| | 60 | | | | | | | | | | | | | |
| 325 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | |
| 320 | | | | | | | | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was backfilled with Portland cement grout, capped with concrete and black dye on August 16, 2023.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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| | |
|---|---|
| PROJECT NO.: | 20201694.018A |
| DRAWN BY: | DA |
| CHECKED BY: | CC |
| DATE: | 8/24/2023 |

BORING LOG KB-11

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-12b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:51 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

**BORING LOG KB-12**

| | | | | | |
|---|---|---|---|---|---|
| **Date Begin - End:** | 8/21/2023 | **Drilling Company:** | EGI | | |
| **Logged By:** | C. Conti | **Drill Crew:** | Loren, Lyle, Gabriel | | |
| **Hor.-Vert. Datum:** | Not Available | **Drilling Equipment:** | B-53B | **Hammer Type - Drop:** | 140 lb. Auto - 30 in. |
| **Plunge:** | -90 degrees | **Drilling Method:** | Hollow Stem Auger | | |
| **Weather:** | Sunny | **Exploration Diameter:** | 8" in. O.D. | | |

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4-inch Asphalt over 20-inch Aggregate Base | | | | | | | | | | | Hand Auger to 5 feet below existing grade |
| 385 | | | **Sandy Fat CLAY with Gravel (CH)**: fine to coarse-grained sand, pale olive, moist, with fine gravel (FILL) | | | | CH | 24.1 | | | 66 | 56 | 35 | |
| | 5 | | fine to medium-grained sand, olive brown | | | | | | | | | | | |
| 380 | | | **Sandy Lean CLAY (CL)**: fine to coarse-grained sand, low to medium plasticity, olive gray and olive yellow, moist, very stiff, trace fine gravel | | | | | | | | | | | |
| | 10 | | | | BC=3<br>3<br>6 | 10" | | 19.5 | 104.3 | | | | | |
| 375 | | | | | | | | | | | | | | |
| | 15 | | fine-grained sand, olive yellow and yellowish brown | | BC=4<br>7<br>11<br>PP=2.25<br>PP=3.5 | 18" | | | | | | | | |
| 370 | | | | | | | | | | | | | | |
| | 20 | | yellowish brown with lenses of light brownish gray and gray | | BC=5<br>7<br>8<br>PP=3.25<br>PP=2.0 | 17" | | | | | | | | |
| 365 | | | | | | | | | | | | | | |
| | 25 | | **Fat CLAY with Sand (CH)**: fine-grained sand, yellowish and reddish brown, moist, very stiff | | BC=7<br>10<br>16<br>PP=3.5 | 18" | CH | 15.9 | | | 71 | 51 | 34 | |
| 360 | | | | | | | | | | | | | | |
| | 30 | | **Clayey SAND (SC)**: fine to coarse-grained sand, low plasticity, pale olive, moist, medium dense to dense | | BC=6<br>9<br>16 | 18" | | | | | | | | |
| 355 | | | yellowish brown | | | | | | | | | | | |

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PROJECT NO.: 20201694.018A
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CHECKED BY: CC
DATE: 8/24/2023

BORING LOG KB-12

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-13a
PAGE: 1 of 2

PLOTTED: 10/18/2023 08:51 PM BY: DArakkal
PROJECT NUMBER: 20201694.018A OFFICE FILTER: SAN JOSE
gINT FILE: Klf_gint_master_2020 gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

**Date Begin - End:** 8/21/2023 **Drilling Company:** EGI

**Logged By:** C. Conti **Drill Crew:** Loren, Lyle, Gabriel

**Hor.-Vert. Datum:** Not Available **Drilling Equipment:** B-53B **Hammer Type - Drop:** 140 lb. Auto - 30 in.

**Plunge:** -90 degrees **Drilling Method:** Hollow Stem Auger

**Weather:** Sunny **Exploration Diameter:** 8" in. O.D.

# BORING LOG KB-12

Approximate Ground Surface Elevation (ft.): 387.00
Surface Condition: Asphalt

| Approximate Elevation (feet) | Depth (feet) | Graphical Log | Lithologic Description | Sample Type | Blow Counts(BC)= Uncorr. Blows/6 in. Pocket Pen(PP)= tsf | Recovery (NR=No Recovery) | USCS Symbol | Water Content (%) | Dry Unit Wt. (pcf) | Passing #4 (%) | Passing #200 (%) | Liquid Limit | Plasticity Index (NP=NonPlastic) | Additional Tests/ Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 350 | | | **Clayey SAND (SC)**: fine to coarse-grained sand, low plasticity, pale olive, moist, medium dense to dense | | BC=8 16 21 | 18" | | | | | | | | |
| | 40 | | fine to coarse-grained sand, non-plastic, olive yellow and reddish yellow | | BC=12 19 24 | 18" | | | | | | | | |
| 345 | | | | | | | | | | | | | | |
| | 45 | | | | BC=7 14 19 | 14" | | | | | | | | |
| 340 | | | fine-grained sand, olive yellow, increase in gravel content | | BC=10 16 23 | 15" | | | | | | | | |
| | 50 | | | | | | | | | | | | | |
| 335 | | | | | | | | | | | | | | |
| | 55 | | | | | | | | | | | | | |
| 330 | | | | | | | | | | | | | | |
| | 60 | | | | | | | | | | | | | |
| 325 | | | | | | | | | | | | | | |
| | 65 | | | | | | | | | | | | | |
| 320 | | | | | | | | | | | | | | |

The boring was terminated at approximately 50 ft. below ground surface. The boring was converted to a monitoring well, see Figure 3 in the main report for construction details.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Kleinfelder.

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DATE: 8/24/2023

BORING LOG KB-12

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
C-13b
PAGE: 2 of 2

PLOTTED: 10/18/2023 08:51 PM BY: DArakkal
OFFICE FILTER: SAN JOSE
PROJECT NUMBER: 20201694.018A
gINT FILE: Klf_gint_master_2020
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# APPENDIX B

## CURRENT LABORATORY TEST DATA
## (Kleinfelder, 2023)

| Exploration ID | Depth (ft.) | Sample Description | Water Content (%) | Dry Unit Wt. (pcf) | Sieve Analysis (%) | | | Atterberg Limits | | | Additional Tests |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Passing 3/4" | Passing #4 | Passing #200 | Liquid Limit | Plastic Limit | Plasticity Index | |
| KB-1 | 1.0 - 2.0 | FAT CLAY WITH SAND (CH) | 26.1 | | | | 78 | 56 | 20 | 36 | |
| KB-1 | 11.0 | LEAN CLAY WITH SAND (CL) | 24.2 | 101.7 | | | 80 | 47 | 18 | 29 | |
| KB-1 | 21.0 | | 21.4 | | | | | | | | |
| KB-2 | 1.0 - 5.0 | SANDY FAT CLAY (CH) | 27.2 | | | | 60 | 65 | 22 | 43 | |
| KB-2 | 6.0 | | 30.4 | 92.2 | | | | | | | |
| KB-2 | 11.0 | SANDY LEAN CLAY (CL) | | | 97 | 88 | 63 | | | | |
| KB-2 | 16.0 | LEAN CLAY WITH SAND (CL) | | | | | 85 | 44 | 19 | 25 | |
| KB-2 | 26.0 | SANDY LEAN CLAY (CL) | 19.4 | | | | 63 | | | | |
| KB-4 | 1.0 - 3.0 | CLAYEY SAND (SC) | 20.7 | | | | 45 | 57 | 22 | 35 | |
| KB-4 | 6.0 | | 24.3 | 94.2 | | | | | | | |
| KB-4 | 8.5 | SANDY LEAN CLAY (CL) | | | | | 69 | | | | |
| KB-4 | 16.0 | LEAN CLAY WITH SAND (CL) | | | | | 74 | | | | |
| KB-5 | 6.0 | SANDY FAT CLAY (CH) | 20.8 | 101.5 | | | 70 | 52 | 18 | 34 | |
| KB-5 | 16.0 | | 24.6 | | | | | | | | |
| KB-5 | 21.0 | LEAN CLAY WITH SAND (CL) | 23.5 | 101.1 | | | 80 | | | | |
| KB-6 | 1.0 - 3.0 | CLAYEY SAND WITH GRAVEL (SC) | 21.7 | | | | 46 | 60 | 22 | 38 | |
| KB-6 | 6.0 | SANDY LEAN CLAY (CL) | 20.7 | 104.0 | | | 67 | | | | |
| KB-6 | 21.0 | SNADY LEAN CLAY (CL) | 19.2 | | | | 53 | | | | |
| KB-7 | 1.0 - 5.0 | SANDY FAT CLAY (CH) | 27.5 | | 100 | 92 | 61 | 68 | 24 | 44 | |
| KB-7 | 6.0 | SANDY LEAN CLAY (CL) | 25.3 | 95.8 | | | 69 | | | | |
| KB-7 | 16.0 | CLAYEY SAND WITH GRAVEL (SC) | 17.3 | | | | 50 | | | | |
| KB-7 | 21.0 | CLAYEY SAND (SC) | | | 100 | 92 | 42 | | | | |
| KB-8 | 1.0 - 3.0 | SANDY FAT CLAY (CH) | 19.1 | | | | 57 | 53 | 19 | 34 | |
| KB-8 | 6.0 | LEAN CLAY WITH SAND (CL) | 22.0 | 102.3 | | | 73 | | | | |
| KB-8 | 11.0 | SANDY LEAN CLAY (CL) | 17.1 | | | | 53 | | | | |
| KB-8 | 26.0 | SANDY LEAN CLAY (CL) | 17.1 | | | | 64 | | | | |
| KB-9 | 1.0 - 5.0 | FAT CLAY WITH SAND (CH) | 22.9 | | | | 78 | 58 | 20 | 38 | |
| KB-9 | 6.0 | | 20.7 | 102.9 | | | | | | | |

Refer to the Geotechnical Evaluation Report or the supplemental plates for the method used for the testing performed above.
NP = NonPlastic

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PROJECT NO.: 20201694.018A
DRAWN BY: DA
CHECKED BY: MK
DATE: 10/4/2023

LABORATORY TEST RESULT SUMMARY

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
D-1a

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| Exploration ID | Depth (ft.) | Sample Description | Water Content (%) | Dry Unit Wt. (pcf) | Sieve Analysis (%) | | | Atterberg Limits | | | Additional Tests |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Passing 3/4" | Passing #4 | Passing #200 | Liquid Limit | Plastic Limit | Plasticity Index | |
| KB-9 | 10.0 | CLAYEY SAND WITH GRAVEL (SC) | 14.2 | | | | 40 | | | | |
| KB-9 | 11.0 | SANDY LEAN CLAY (CL) | 19.9 | | | | 62 | | | | |
| KB-10 | 6.0 | SANDY FAT CLAY (CH) | 25.7 | | | | 53 | 55 | 26 | 29 | |
| KB-10 | 16.0 | | 18.0 | | | | | | | | |
| KB-10 | 21.0 | CLAYEY SAND WITH GRAVEL (SC) | 15.3 | | | | 41 | 41 | 17 | 24 | |
| KB-10 | 26.0 | LEAN CLAY WITH SAND (CL) | | | | 99 | 71 | | | | |
| KB-11 | 1.0 - 5.0 | FAT CLAY WITH SAND (CH) | 24.5 | | | | 77 | 66 | 19 | 47 | |
| KB-11 | 6.0 | FAT CLAY WITH SAND (CH) | 21.9 | 100.9 | | | 75 | 56 | 22 | 34 | |
| KB-11 | 15.0 | CLAYEY SAND (SC) | | | | | 37 | | | | |
| KB-12 | 2.0 - 5.0 | SANDY FAT CLAY (CH) | 24.1 | | | | 66 | 56 | 21 | 35 | |
| KB-12 | 11.0 | | 19.5 | 104.3 | | | | | | | |
| KB-12 | 26.0 | FAT CLAY WITH SAND (CH) | 15.9 | | | | 71 | 51 | 17 | 34 | |

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Refer to the Geotechnical Evaluation Report or the supplemental plates for the method used for the testing performed above.
NP = NonPlastic

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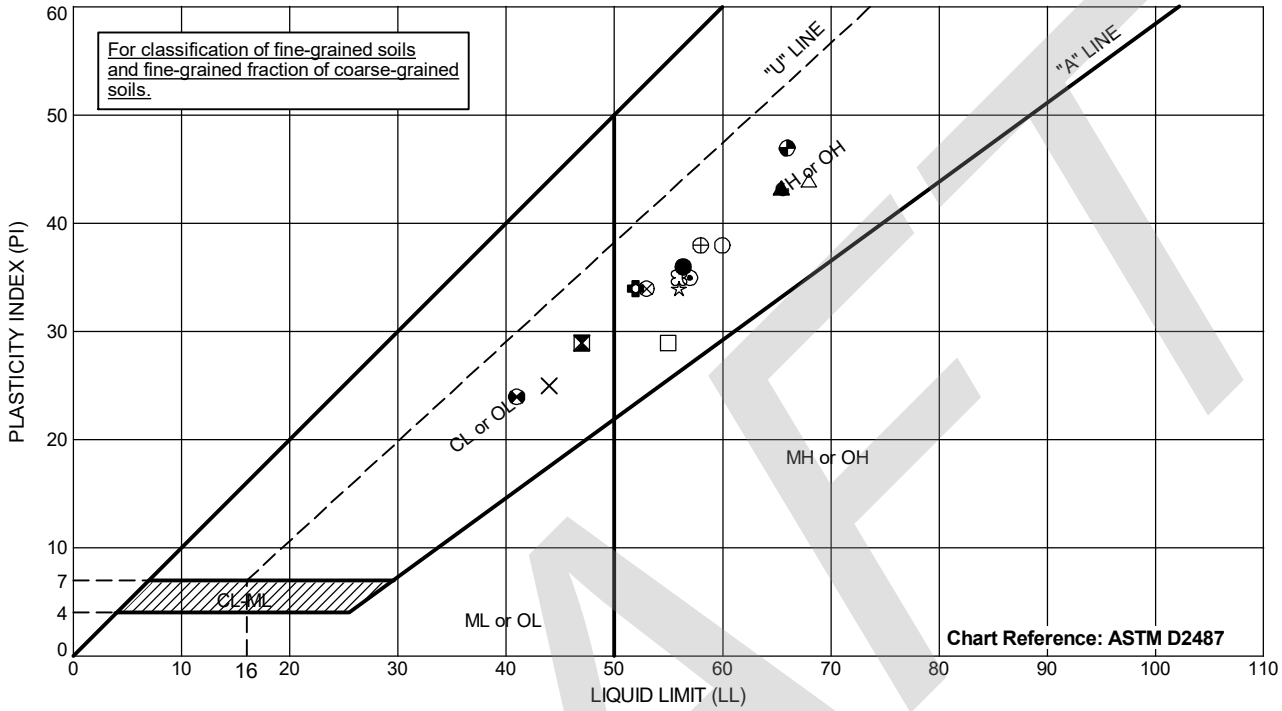
CHECKED BY: MK
DATE: 10/4/2023

LABORATORY TEST RESULT SUMMARY

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
D-1b




| Exploration ID | | Depth (ft.) | Sample Description | Passing #200 | LL | PL | PI |
|---|---|---|---|---|---|---|---|
| ● | KB-1 | 1 - 2 | FAT CLAY WITH SAND (CH) | 78 | 56 | 20 | 36 |
| ⊠ | KB-1 | 11 | LEAN CLAY WITH SAND (CL) | 80 | 47 | 18 | 29 |
| ▲ | KB-2 | 1 - 5 | SANDY FAT CLAY (CH) | 60 | 65 | 22 | 43 |
| × | KB-2 | 16 | LEAN CLAY WITH SAND (CL) | 85 | 44 | 19 | 25 |
| ⊙ | KB-4 | 1 - 3 | CLAYEY SAND (SC) | 45 | 57 | 22 | 35 |
| ✿ | KB-5 | 6 | SANDY FAT CLAY (CH) | 70 | 52 | 18 | 34 |
| ○ | KB-6 | 1 - 3 | CLAYEY SAND WITH GRAVEL (SC) | 46 | 60 | 22 | 38 |
| △ | KB-7 | 1 - 5 | SANDY FAT CLAY (CH) | 61 | 68 | 24 | 44 |
| ⊗ | KB-8 | 1 - 3 | SANDY FAT CLAY (CH) | 57 | 53 | 19 | 34 |
| ⊕ | KB-9 | 1 - 5 | FAT CLAY WITH SAND (CH) | 78 | 58 | 20 | 38 |
| □ | KB-10 | 6 | SANDY FAT CLAY (CH) | 53 | 55 | 26 | 29 |
| ⊛ | KB-10 | 21 | CLAYEY SAND WITH GRAVEL (SC) | 41 | 41 | 17 | 24 |
| ◕ | KB-11 | 1 - 5 | FAT CLAY WITH SAND (CH) | 77 | 66 | 19 | 47 |
| ☆ | KB-11 | 6 | FAT CLAY with SAND (CH) | 75 | 56 | 22 | 34 |
| ⊠ | KB-12 | 2 - 5 | SANDY FAT CLAY (CH) | 66 | 56 | 21 | 35 |

Testing performed in general accordance with ASTM D4318.
NP = Nonplastic
NM = Not Measured

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PROJECT NO.: 20201694.018A
DRAWN BY: DA
CHECKED BY: CC
DATE: 8/24/2023

ATTERBERG LIMITS

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
D-2a

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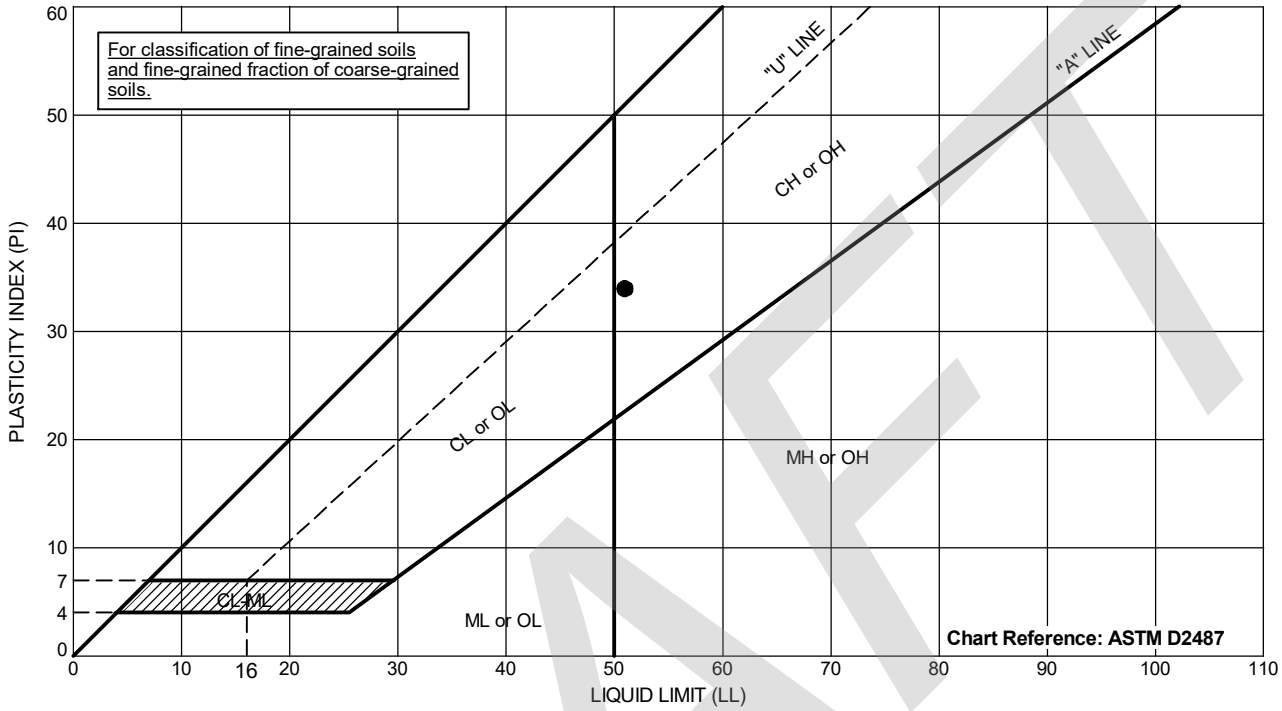


| Exploration ID | Depth (ft.) | Sample Description | Passing #200 | LL | PL | PI |
|---|---|---|---|---|---|---|
| ● KB-12 | 26 | FAT CLAY WITH SAND (CH) | 71 | 51 | 17 | 34 |

Testing performed in general accordance with ASTM D4318.
NP = Nonplastic
NM = Not Measured

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PROJECT NO.: 20201694.018A
DRAWN BY: DA
CHECKED BY: CC
DATE: 8/24/2023

ATTERBERG LIMITS

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
D-2b

DRAFT

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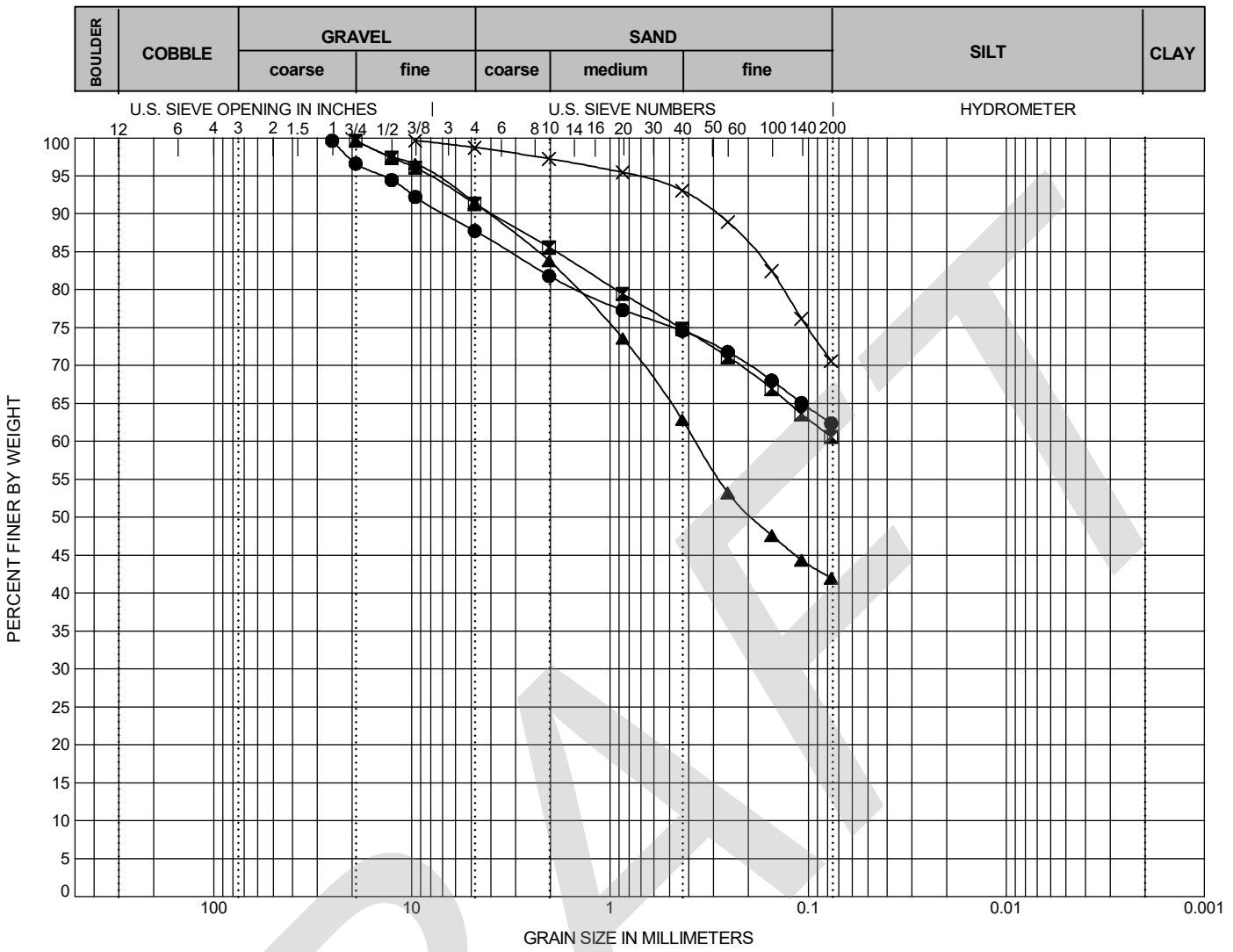


| Exploration ID | | Depth (ft.) | Sample Description | LL | PL | PI |
|---|---|---|---|---|---|---|
| ● | KB-2 | 11 | SANDY LEAN CLAY (CL) | NM | NM | NM |
| ⊠ | KB-7 | 1 - 5 | SANDY FAT CLAY (CH) | 68 | 24 | 44 |
| ▲ | KB-7 | 21 | CLAYEY SAND (SC) | NM | NM | NM |
| × | KB-10 | 26 | LEAN CLAY WITH SAND (CL) | NM | NM | NM |

| Exploration ID | | Depth (ft.) | $D_{100}$ | $D_{60}$ | $D_{30}$ | $D_{10}$ | Cc | Cu | Passing 3/4" | Passing #4 | Passing #200 | %Silt* | %Clay* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ● | KB-2 | 11 | 25 | NM | NM | NM | NM | NM | 97 | 88 | 63 | NM | NM |
| ⊠ | KB-7 | 1 - 5 | 19 | NM | NM | NM | NM | NM | 100 | 92 | 61 | NM | NM |
| ▲ | KB-7 | 21 | 19 | 0.358 | NM | NM | NM | NM | 100 | 92 | 42 | NM | NM |
| × | KB-10 | 26 | 9.5 | NM | NM | NM | NM | NM | | 99 | 71 | NM | NM |

*These numbers represent silt-sized and clay-sized content but may not indicate the percentage of the material with the engineering properties of silt or clay. Sieve Analysis and Hydrometer Analysis testing performed in general accordance with ASTM D6913(Sieve Analysis) and ASTM D7928 (Hydrometer Analysis).
NP = Nonplastic
NM = Not Measured

Coefficients of Uniformity - $C_u = D_{60} / D_{10}$
Coefficients of Curvature - $C_C = (D_{30})^2 / D_{60} D_{10}$
$D_{60}$ = Grain diameter at 60% passing
$D_{30}$ = Grain diameter at 30% passing
$D_{10}$ = Grain diameter at 10% passing

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PROJECT NO.: 20201694.018A
DRAWN BY: DA
CHECKED BY: CC
DATE: 8/24/2023

SIEVE ANALYSIS

Penitencia Water Treatment Plant
3959 Whitman Way
San Jose, California

APPENDIX
D-3

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gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_SIEVE ANALYSIS]

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Client: Kleinfelder
Client's Project No.: 20201694.018A
Client's Project Name: Penitencia Water Treatment Plant
Date Sampled: 21-Aug-23
Date Received: 28-Sep-23
Matrix: Soil
Authorization: Chain of Custody

Date of Report: 2-Oct-2023

| Job/Sample No. | Sample I.D. | Redox (mV) | pH | Resistivity (As Received) (ohms-cm) | Resistivity (100% Saturation) (ohms-cm) | Sulfide (mg/kg)* | Chloride (mg/kg)* | Sulfate (mg/kg)* |
|---|---|---|---|---|---|---|---|---|
| 2309046-001 | KB-8 Bulk 1 @ 1-3' | +120 | 9.10 | 1,000 | 920 | N.D. | N.D. | 19 |
| | | | | | | | | |
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| Method: | ASTM D1498 | ASTM D4972 | ASTM D1125M | ASTM G57 | ASTM D4658M | ASTM D4327 | ASTM D4327 |
|---|---|---|---|---|---|---|---|
| Reporting Limit: | - | - | - | - | 50 | 15 | 15 |
| Date Analyzed: | 28-Sep-2023 | 29-Sep-2023 | 28-Sep-2023 | 28-Sep-2023 | 28-Sep-2023 | 29-Sep-2023 | 29-Sep-2023 |

* Results Reported on "As Received" Basis

N.D. - None Detected

Julia Clauson
Chemist

**Quality Control Summary - All laboratory quality control parameters were found to be within established limits**



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# APPENDIX C

## PREVIOUS BORING LOGS

## UNIFIED SOIL CLASSIFICATION SYSTEM

| Major Divisions | | grf | ltr | Description |
|---|---|---|---|---|
| Coarse Grained Soils | Gravel And Gravelly Soils | | GW | Well-graded gravels or gravel sand mixtures, little or no fines |
| | | | GP | Poorly-graded gravels or gravel sand mixture, little or no fines |
| | | | GM | Silty gravels, gravel-sand-silt mixtures |
| | | | GC | Clayey gravels, gravel-sand-clay mixtures |
| | Sand And Sandy Soils | | SW | Well-graded sands or gravelly sands, little or no fines |
| | | | SP | Poorly-graded sands or gravelly sands, little or no fines |
| | | | SM | Silty sands, sand-silt mixtures |
| | | | SC | Clayey sands, and-clay mixtures |
| Fine Grained Soils | Silts And Clays LL < 50 | | ML | Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity |
| | | | CL | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays |
| | | | OL | Organic silts and organic silt-clays of low plasticity |
| | Silts And Clays LL > 50 | | MH | Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts |
| | | | CH | Inorganic clays of high plasticity, fat clays |
| | | | OH | Organic clays of medium to high plasticity |
| Highly Organic Soils | | | PT | Peat and other highly organic soils |

## GRAIN SIZES

U.S. STANDARD SERIES SIEVE — CLEAR SQUARE SIEVE OPENINGS

| 200 | 40 | 10 | 4 | 3/4" | 3" | 12" |
|---|---|---|---|---|---|---|

| Silts and Clays | Sand | | | Gravel | | Cobbles | Boulders |
|---|---|---|---|---|---|---|---|
| | Fine | Medium | Coarse | Fine | Coarse | | |

## RELATIVE DENSITY

| Sands and Gravels | Blows/Foot* |
|---|---|
| Very Loose | 0 - 4 |
| Loose | 4 - 10 |
| Medium Dense | 10 - 30 |
| Dense | 30 - 50 |
| Very Dense | Over 50 |

## CONSISTENCY

| Silts and Clays | Blows/Foot* | Strength (tsf)** |
|---|---|---|
| Very Soft | 0 - 2 | 0 - 1/4 |
| Soft | 2 - 4 | 1/4 - 1/2 |
| Firm | 4 - 8 | 1/2 - 1 |
| Stiff | 8 - 16 | 1 - 2 |
| Very Stiff | 16 - 32 | 2 - 4 |
| Hard | Over 32 | Over 4 |

*Number of Blows for a 140-pound hammer falling 30 inches, driving a 2-inch O.D. (1-3/8" I.D ) split spoon sampler.

**Unconfined compressive strength.

## SYMBOLS

- Standard Penetration sample
- Modified California sample
- Shelby Tube sample
- Ground Water level during drilling
- Stabilized Ground Water level

## Increasing Visual Moisture Content

Dry
Damp
Moist
Wet
Saturated

HARZA Engineering Company

# KEY TO EXPLORATORY BORING LOGS

**WATER TREATMENT IMPROV. PROJECT, STAGE 2**
**Penitencia WTP, San Jose, CA**

| PROJECT NO. | DATE | FIGURE NO. |
|---|---|---|
| 17319-CA | November 2000 | A-1 |

File Name: G:\ENGINEER\GINTW\PROJECTS\17319P-1.GPJ Report Template: KEY A Output Date: 11/1/00

| DRILL RIG | Mobile B-61, HSA | SURFACE ELEVATION | 391 Feet | LOGGED BY | VWC |
|---|---|---|---|---|---|
| DEPTH TO GROUND WATER | 23 feet | BORING DIAMETER | 8-inch | DATE DRILLED | 5/17/00 |

| DESCRIPTION AND CLASSIFICATION | | | DEPTH | SAMPLER | PENETRATION RESISTANCE (BLOWS/FT) | WATER CONTENT(%) | DRY DENSITY (PCF) | UNCONFINED COMPRESSIVE STRENGTH (KSF) | OTHER TESTS |
|---|---|---|---|---|---|---|---|---|---|
| DESCRIPTION AND REMARKS | CONSIST | SOIL TYPE | (FEET) | | | | | | |
| **CLAY (CH)**: gray brown, silty, trace sand (fine-grained), moist | Stiff | | | | 21 | | | | R-Value = 3 |
| | | | | | 23 | 27 | 92 | 2.4 | Atterberg Limits: LL=93 PI=80 Passing #200 sieve = 98% |
| | | | 5 | | | | | | |
| at 6 feet, color to rust brown, trace gravel (fine, subangular), moist | | | | | | | | | |
| | Very Stiff | | | | 26 | 22 | 102 | 7.1 | |
| | | | 10 | | | | | | |
| at 12 feet, grade to sandy | | | | | | | | | |
| | Very Stiff | | | | | | | | |
| **SAND (SC)**: reddish brown, fine to coarse-grained, some clay, trace gravel (fine, subangular) | Medium Dense | | | | 30 | 14 | 111 | 2.2 | Atterberg Limits: LL=41 PI=29 Passing #200 sieve = 27% |
| | | | 15 | | | | | | |
| | Dense | | | | 55 | | | | |
| at 19 feet, gravelly | | | 20 | | | | | | |
| | | | | | | ▽ | | | |
| | | | | | 30 | | | | |
| at 24-1/2 feet, clayey | | | 25 | | | | | | Passing #200 sieve = 42% |
| | | | | | 30 | | | | |
| | | | 30 | | | | | | |

HARZA Engineering Company

# EXPLORATORY BORING LOG

**WATER TREATMENT IMPROV. PROJECT, STAGE 2**
**Penitencia WTP, San Jose, CA**

| PROJECT NO. | DATE | BORING NO. |
|---|---|---|
| 17319-CA | November 2000 | EB-1 |

File Name: G:\ENGINEER\GINT\WPROJECTS\17319P~1.GPJ Report Template: H Output Date: 11/1/00

| DRILL RIG | Mobile B-61, HSA | SURFACE ELEVATION | 391 Feet | LOGGED BY | VWC |
|---|---|---|---|---|---|
| DEPTH TO GROUND WATER | 23 feet | BORING DIAMETER | 8-inch | DATE DRILLED | 5/17/00 |

| DESCRIPTION AND CLASSIFICATION | | | DEPTH (FEET) | SAMPLER | PENETRATION RESISTANCE (BLOWS/FT) | WATER CONTENT(%) | DRY DENSITY (PCF) | UNCONFINED COMPRESSIVE STRENGTH (KSF) | OTHER TESTS |
|---|---|---|---|---|---|---|---|---|---|
| DESCRIPTION AND REMARKS | CONSIST | SOIL TYPE | | | | | | | |
| **SAND (SC)**: Continued | Dense | | 40 | | 38 | | | | |
| | | | 45 | | 45 | | | | |
| | | | 50 | | | | | | |

Bottom of Boring = 50 Feet

Notes:
1. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
2. For an explanation of penetration resistance values, see the first page of Appendix A.
3. Ground water was encountered at about 23 feet at the time of drilling.
4. The boring was grouted with neat cement immediately upon completion.
5. LL= Liquid Limit, PI= Plasticity Index.

HARZA Engineering Company

EXPLORATORY BORING LOG

**WATER TREATMENT IMPROV. PROJECT, STAGE 2**
**Penitencia WTP, San Jose, CA**

| PROJECT NO. | DATE | BORING NO. |
|---|---|---|
| **17319-CA** | **November 2000** | **EB-1** |

File Name: G:\ENGINEER\GINTW\PROJECTS\17319P~1.GPJ Report Template: H Output Date: 11/1/00

| DRILL RIG | Mobile B-61, HSA | SURFACE ELEVATION | 395 Feet | LOGGED BY | VWC |
|---|---|---|---|---|---|
| DEPTH TO GROUND WATER | Not Encountered | BORING DIAMETER | 8-inch | DATE DRILLED | 5/17/00 |

| DESCRIPTION AND CLASSIFICATION | | | DEPTH | SAMPLER | PENETRATION RESISTANCE (BLOWS/FT) | WATER CONTENT(%) | DRY DENSITY (PCF) | UNCONFINED COMPRESSIVE STRENGTH (KSF) | OTHER TESTS |
|---|---|---|---|---|---|---|---|---|---|
| DESCRIPTION AND REMARKS | CONSIST | SOIL TYPE | (FEET) | | | | | | |
| **CLAY (CH)**: dark brown, silty, some sand (fine to coarse-grained), damp | Very Stiff | | | | 42 | | | | |
| at 4 feet, color to green gray, trace gravel, moist | Stiff | | 5 | | 20 | 32 | 86 | 2.7 | |
| | | | 10 | | 24 | 41 | 79 | 2.0 | |
| **CLAY (CL)**: yellowish brown mixed with light gray and white, some silt, some sand, moist | Very Stiff | | 15 | | 24 | 24 | 102 | 4.4 | |
| **CLAY (CL)**: rust brown, some sand (fine to coarse-grained) | Hard | | 20 | | 46 | 19 | 111 | 6.9 | |
| | | | 25 | | 43 | | | | |
| **SAND (SC)**: rust brown, fine to coarse-grained, some clay | Very Dense | | 30 | | 50/6" | | | | |

HARZA Engineering Company

# EXPLORATORY BORING LOG

**WATER TREATMENT IMPROV. PROJECT, STAGE 2**
**Penitencia WTP, San Jose, CA**

| PROJECT NO. | DATE | BORING NO. |
|---|---|---|
| 17319-CA | November 2000 | EB-2 |

File Name G:\ENGINEER\GINTW\PROJECTS\17319P~1.GPJ Report Template: H Output Date: 11/1/00

| DRILL RIG | Mobile B-61, HSA | SURFACE ELEVATION | 395 Feet | LOGGED BY | VWC |
|---|---|---|---|---|---|
| DEPTH TO GROUND WATER | Not Encountered | BORING DIAMETER | 8-inch | DATE DRILLED | 5/17/00 |

| DESCRIPTION AND CLASSIFICATION | | | DEPTH | SAMPLER | PENETRATION RESISTANCE (BLOWS/FT) | WATER CONTENT(%) | DRY DENSITY (PCF) | UNCONFINED COMPRESSIVE STRENGTH (KSF) | OTHER TESTS |
|---|---|---|---|---|---|---|---|---|---|
| DESCRIPTION AND REMARKS | CONSIST | SOIL TYPE | (FEET) | | | | | | |
| **SAND (SC)**: Continued | Very Dense | | | | | | | | |
| at 39 feet, clayey | Dense | | 40 | | 37 | | | | Passing #200 sieve = 47% |
| at 48-1/2 feet, grades to sandy clay | Very Stiff | | 45 | | 26 | | | | |
| | | | 50 | | | | | | |

Bottom of Boring = 50 Feet

Notes:
1. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.
2. For an explanation of penetration resistance values, see the first page of Appendix A.
3. Ground water was not encountered at the time of drilling.
4. The boring was grouted with neat cement immediately upon completion.

HARZA Engineering Company

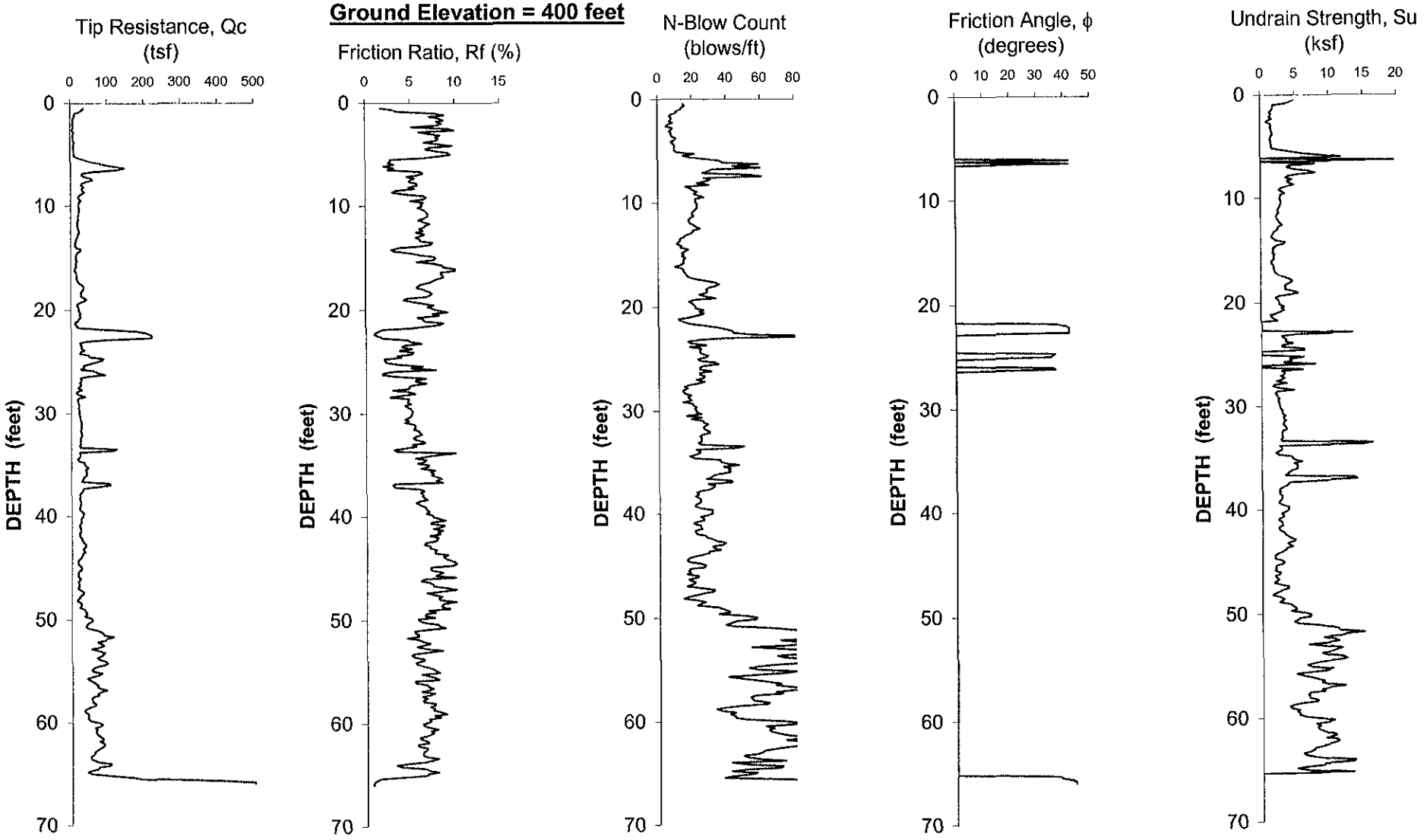
EXPLORATORY BORING LOG

**WATER TREATMENT IMPROV. PROJECT, STAGE 2**
**Penitencia WTP, San Jose, CA**

| PROJECT NO. | DATE | BORING NO. |
|---|---|---|
| 17319-CA | November 2000 | EB-2 |

File Name: G:\ENGINEER\GINTW\PROJECTS\17319P~1.GPJ Report Template H Output Date: 11/1/00

**Ground Elevation = 400 feet**





**HARZA**

*Engineering Company*

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| | |
|---|---|
| Drawn By | FDH |
| Prepared By | FDH |
| Approved By | SR |
| Scale | AS SHOWN |
| Date | 14JUNY00 |
| Drawing File | FDH |

## CONE PENETRATION TEST - 1

WATER TREATMENT IMPROVEMENT PROJECT, STAGE 2
PENITENCIA WTP
San Jose, CA

FIGURE
1

PROJECT NO.
17319-CA

## BORING AND TEST PIT LOG LEGEND:

SAMPLE TYPE:

- B - BAG SAMPLE
- J - JAR SAMPLE
- S - SPLIT BARREL (ASTM D1586 UNLESS OTHERWISE NOTED)
- W - WASH SAMPLE
- ST - SHELBY TUBE
- OT - OSTERBERG TUBE
- NX - DIAMOND CORE BARREL
- MC - MODIFIED CALIFORNIA SAMPLER

PENETRATION TEST:

6" - 6" - 6" – THE NUMBER OF BLOWS FOR THREE 6-INCH INCREMENTS REQUIRED FROM A 140-LB HAMMER FALLING 30 INCHES TO DRIVE A STANDARD 2-INCH O.D. SPLIT-BARREL SAMPLER (ASTM D1586) OR A 2½-INCH I.D. MODIFIED CALIFORNIA SAMPLER.

(N) – THE SUM OF BLOWS FOR THE SECOND AND THIRD 6-INCH INCREMENTS OF A STANDARD 2-INCH O.D. SPLIT-BARREL SAMPLER (ASTM D1586).

SYMBOLIC LOG:

SEE SYMBOLIC LOG LEGEND FOR KEY TO GRAPHIC PATTERN

COMMENTS:

PPT - POCKET PENETROMETER TEST RESULTS.
TV - TORVANE TEST RESULTS.

## NOTES:

1. THE BORING AND/OR TEST PIT LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE BORING AND/OR TEST PIT LOCATIONS. ALSO, THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE LOCATIONS.

2. BORINGS AND/OR TEST PITS WERE LOGGED IN THE FIELD BY A CH2M HILL ENGINEERING GEOLOGIST OR GEOTECHNICAL ENGINEER. SAMPLES WERE EXAMINED AND VISUALLY CLASSIFIED IN APPROXIMATE ACCORDANCE WITH ASTM D2488.

3. THE BORING AND TEST PIT LOGS ARE A SIMPLIFIED REPRESENTATION OF SUBSURFACE CONDITIONS. THEY ARE AN INTEGRATION OF FIELD CLASSIFICATIONS AND LABORATORY CLASSIFICATION TESTS.

4. VISUAL CLASSIFICATION AND LAB CLASSIFICATION TESTS WERE PERFORMED ON THE SOIL SAMPLES. NOT ALL SOIL TYPES WERE SAMPLED AND NOT ALL SAMPLED SOILS WERE TESTED.

| PROJECT NUMBER | BORING NUMBER |
|---|---|
| F22999.BO | B-1 SHEET 1 OF 2 |

# SOIL BORING LOG

PROJECT SCVWD Sludge Dewatering, Penitencia LOCATION San Jose, CA
ELEVATION Approx. 390 DRILLING CONTRACTOR HEW Drilling Co., Inc.
DRILLING METHOD AND EQUIPMENT Hollow Stem Auger, CME-45, Safety Hammer
WATER LEVEL AND DATE water not encountered START 9-8-87 FINISH 9-8-87 LOGGER S. Goessling

| DEPTH BELOW SURFACE (FT) | SAMPLE INTERVAL | SAMPLE TYPE AND NUMBER | SAMPLE RECOVERY (FT) | STANDARD PENETRATION TEST RESULTS 6" -6" -6" (N) | SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL) | SYMBOLIC LOG | COMMENTS (DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| | 2.5 | | | | | | |
| | 3.7 | S-1 | 1.2 | 7-9-10 (19) | FAT CLAY, dark grey-brown, slightly moist, very stiff (CH) | | PPT>4.5 tsf |
| | 5.0 | | | | | | |
| 5 | 5.1 | S-2 | 1.1 | 6-7-10 (17) | FAT CLAY WITH SAND, mottled brown and dark brown, slightly moist, very stiff (CH) | | |
| | 7.0 | | | | | | |
| | 8.5 | S-3 | 1.5 | 7-10-13 (23) | FAT SANDY CLAY, brown, slightly moist, very stiff, some gravel (CH) | | PPT>4.1 tsf |
| | 10.0 | | | | | | |
| 10 | 11.5 | S-4 | 1.5 | 4-8-13 (21) | SANDY FAT CLAY, mixed gray and brown, moist, very stiff (CH/SC) | | PPT>4.1 tsf |
| | 15.0 | | | | | | |
| 15 | 16.5 | S-5 | 1.5 | 14-20-26 (46) | SANDY FAT CLAY, layered gray and brown, slightly moist, very stiff, occasional gravel (CH/SC) | | (Drove through plug--10 blows) (rock in shoe) |
| | 20.0 | | | | | | |
| 20 | 21.5 | S-6 | 1.5 | 15-11-14 (25) | SANDY FAT CLAY WITH GRAVEL, mixed brown and gray, slightly moist, very stiff (CH/SC) | | (Cuttings hot--friction while drilling) |
| | 25.0 | | | | | | |
| 25 | 26.5 | S-7 | 1.5 | 5-11-22 (33) | SANDY CLAY WITH GRAVEL, reddish brown, slightly moist, very stiff (CH/SC) SILTY CLAYEY GRAVEL, reddish brown and tan, slightly moist, very dense (GC) | | (Cuttings hot, steaming) |
| 30 | | | | | | | |

| PROJECT NUMBER | BORING NUMBER |
|---|---|
| F22999.BO | B- 1 SHEET 2 OF 2 |

# SOIL BORING LOG

PROJECT SCVWD Sludge Dewatering, Penitencia LOCATION San Jose, CA
ELEVATION Approx. 390 DRILLING CONTRACTOR HEW Drilling Co., Inc.
DRILLING METHOD AND EQUIPMENT Hollow Stem Auger, CME-45, Safety Hammer
WATER LEVEL AND DATE water not encountered START 9-8-87 FINISH 9-8-87 LOGGER S. Goessling

| DEPTH BELOW SURFACE (FT) | SAMPLE INTERVAL | SAMPLE TYPE AND NUMBER | SAMPLE RECOVERY (FT) | STANDARD PENETRATION TEST RESULTS 6" -6" -6" (N) | SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL) | SYMBOLIC LOG | COMMENTS (DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION) |
|---|---|---|---|---|---|---|---|
| 30 | 30<br>31.5 | S-8 | 1.5<br>1.5 | 6-12-30<br>(42) | LEAN CLAY, reddish brown, moist, stiff, (CL)<br>CLAYEY SANDY GRAVEL, gray brown with tan, slightly moist, (GC) | | PPT=2.7 tsf |
| | | | | | END BORING @ 31.5 FT. | | |
| 35 | | | | | | | |

| PROJECT NUMBER | BORING NUMBER |
|---|---|
| F22999.BO | B-2 SHEET 1 OF 2 |

# SOIL BORING LOG

PROJECT SCVWD Sludge Dewatering, Penitencia LOCATION San Jose, CA
ELEVATION Approx. 400 DRILLING CONTRACTOR HEW Drilling Co., Inc.
DRILLING METHOD AND EQUIPMENT HSA, CME - 45
WATER LEVEL AND DATE none encountered START 9-8-87 FINISH 9-8-87 LOGGER S. GOESSLING

| DEPTH BELOW SURFACE (FT) | SAMPLE INTERVAL | SAMPLE TYPE AND NUMBER | SAMPLE RECOVERY (FT) | STANDARD PENETRATION TEST RESULTS 6" -6" -6" (N) | SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL) | SYMBOLIC LOG | COMMENTS (DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| 5 | 5.0 | | | | | | |
| | 6.1 | S-1 | 1.1 | 5-7-9 (16) | SANDY FAT CLAY WITH GRAVEL, dark gray, slightly moist, very stiff (CH) | | |
| 10 | 10.0 | | | | | | |
| | 11.5 | S-2 | 1.5 | 4-8-11 (19) | SANDY FAT CLAY , dark gray, slightly moist, very stiff (CH) | | PPT=2.9 tsf |
| | | | | | CLAYEY SAND , mottled tan, brown and gray, slightly moist (SC) | | |
| 15 | 15.0 | | | | | | |
| | 16.5 | S-3 | 1.5 | 7-11-19 (30) | SANDY FAT CLAY WITH GRAVEL, mottled gray, brown and tan, slightly moist, very stiff (CH) | | |
| | | | | | SANDY FAT CLAY, mixed gray and brown, slightly moist (CH) | | |
| 20 | 20.0 | | | | | | |
| | 21.5 | S-4 | 1.5 | 11-19-27 (46) | LEAN CLAY WITH SAND, reddish brown, slightly moist, hard (CL) | | (Hard pulling sample out of the ground) PPT>4.5 tsf |
| 25 | 25.0 | | | | | | |
| | 26.5 | S-5 | 1.5 | 9-17-23 (40) | LEAN CLAY WITH SAND, mixed reddish brown and gray, dry, hard (CL) | | |
| | | | | | SANDY LEAN CLAY WITH GRAVEL , mixed brown, black, gray and tan, dry, hard (SC-CL) | | |
| 30 | | | | | | | |

| PROJECT NUMBER | BORING NUMBER |
|---|---|
| F22999.BO | B-2 SHEET 2 OF 2 |

# SOIL BORING LOG

PROJECT SCVWD Sludge Dewatering, Penitencia LOCATION San Jose, CA
ELEVATION Approx. 400 DRILLING CONTRACTOR HEW Drilling Company, Inc.
DRILLING METHOD AND EQUIPMENT HSA, CME - 45,
WATER LEVEL AND DATE not encountered START 9-8-87 FINISH 9-8-87 LOGGER S. GOESSLING

| DEPTH BELOW SURFACE (FT) | SAMPLE INTERVAL | SAMPLE TYPE AND NUMBER | SAMPLE RECOVERY (FT) | STANDARD PENETRATION TEST RESULTS 6" -6" -6" (N) | SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL) | SYMBOLIC LOG | COMMENTS (DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION) |
|---|---|---|---|---|---|---|---|
| 30 | 30<br>31.5 | S-6 | 1.5<br>1.5 | 14-28-38<br>(66) | SILTY CLAYEY GRAVEL WITH SAND, mixed gray white tan & brown, dry, very dense (GC) | | |
| | | | | | END OF BORING @ 31.5 FT. | | |
| 35 | | | | | | | |

| PROJECT NUMBER | BORING NUMBER |
|---|---|
| F22999.BO | B-3 SHEET 1 OF 1 |

# SOIL BORING LOG

PROJECT SCVWD Sludge Dewatering, Penitencia LOCATION San Jose, CA
ELEVATION Approx. 390 DRILLING CONTRACTOR HEW Drilling Co., Inc.
DRILLING METHOD AND EQUIPMENT Hollow Stem Auger, CME-45, Safety Hammer
WATER LEVEL AND DATE water not encountered START 9-8-87 FINISH 9-8-87 LOGGER S. Goessling

| DEPTH BELOW SURFACE (FT) | SAMPLE INTERVAL | SAMPLE TYPE AND NUMBER | SAMPLE RECOVERY (FT) | STANDARD PENETRATION TEST RESULTS 6" -6" -6" (N) | SOIL DESCRIPTION (SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL) | SYMBOLIC LOG | COMMENTS (DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION) |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| | 2.5 | | | | | | |
| | 3.6 | S-1 | 1.1 | 7-8-10 (18) | FAT CLAY WITH SAND, dark gray, dry, very stiff, trace roots (CH) | | PPT>4.5 tsf |
| 5 | 6.0 | | | | | | PPT>4.5 tsf |
| | 7.1 | S-2 | 1.1 | 5-9-11 (20) | FAT CLAY WITH SAND, dark gray, dry, very stiff, trace roots and occasional gravel (CH) | | |
| | 8.0 | | | | | | |
| | 9.5 | S-3 | 1.5 | 10-17-23 (40) | SILTY CLAYEY SAND, tan and gray, dry, very dense, occasional gravel (SC/SM) | | |
| 10 | 10.0 | | | | | | |
| | 11.5 | S-4 | 1.5 | 6-8-11 (19) | SILTY CLAYEY SAND WITH GRAVEL, tan and light gray, slightly moist, medium, gravel angular (SM) | | |
| | 15.0 | | | | | | |
| 15 | 16.5 | S-5 | 1.5 | 12-19-27 (46) | SILTY SAND WITH GRAVEL, tan and light gray, slightly moist, very dense, gravel angular (SM) | | (difficulty pulling sample out) |
| | 20.0 | | | | | | |
| 20 | 21.2 | S-6 | 1.2 | 16-19-15 (34) | SILTY CLAYEY SAND WITH GRAVEL, tan and light gray, slightly moist, dense, gravel platey and angular (SC/SM) | | |
| | | | | | EOB=21.51 | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

| PROJECT NUMBER | BORING NUMBER |
|---|---|
| F22999.BO | B-4 SHEET 1 OF 1 |

# SOIL BORING LOG

PROJECT SCVWD Sludge Dewatering, Penitencia LOCATION San Jose, CA
ELEVATION Approx. 400 DRILLING CONTRACTOR HEW Drilling Company, Inc.
DRILLING METHOD AND EQUIPMENT HSA, CME - 45
WATER LEVEL AND DATE none encountered START 9-8-87 FINISH 9-8-87 LOGGER S. GOESSLING

| DEPTH BELOW SURFACE (FT) | SAMPLE: INTERVAL | SAMPLE: TYPE AND NUMBER | SAMPLE: RECOVERY (FT) | STANDARD PENETRATION TEST RESULTS: 6" -6" -6" (N) | SOIL DESCRIPTION: SOIL NAME, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY, USCS GROUP SYMBOL | SYMBOLIC LOG | COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION |
|---|---|---|---|---|---|---|---|
| 0 | | | | | | | |
| 5 | 5.0 | | | | | | |
| | 5.9 | S-1 | 0.9 / 1.5 | 5-13-13 (26) | SILTY CLAYEY SAND, occasional gravel, tan and light gray, dry, medium (SC/SM) | | |
| 10 | 10.0 | | | | | | |
| | 11.5 | S-2 | 1.5 / 1.5 | 5-9-12 (21) | FAT CLAY WITH SAND, occasional gravel and wood fragments, dark gray, slightly moist, very stiff (CH) | | PPT= 3.2 tsf |
| 15 | 15.0 | | | | | | |
| | 16.5 | S-3 | 1.5 / 1.5 | 8-14-20 (34) | SILTY CLAYEY SAND, occasional gravel, tan and light gray, dry, dense (SC/SM) | | |
| 20 | 20.0 | | | | | | |
| | 21.5 | S-4 | 1.5 / 1.5 | 10-16-26 (42) | SILTY CLAYEY SAND, occasional gravel, mixed tan, gray, brown and red, slightly moist, dense (SC/SM) | | difficult pulling sampler out of hole PPT= 3.tsf |
| | | | | | END OF BORING @ 21.5 FT. | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

**Project: Penitencia Water Treatment Plant Site Study**

**Project Location: San Jose, California**

# Log of Boring No. I-13

Sheet 1 of 3

| | | | | | |
|---|---|---|---|---|---|
| Date(s) Drilled | 7/18/85 -7/23/85 | Boring Location | N corner of sludge drying bed area, ~210' SE of Sunset Ave | | |
| Drilling Method | Rotary Wash | Drilling Company | Pitcher Drilling Co. | Driller | Roger Kostenko |
| Drill Rig Type | Failing 1500 | Logged By | R. E. Kimmel | Completion Depth (feet) | 178.5 |
| North Coordinate | 330155 | East Coordinate 1612153 | Approximate Ground Surface Elevation (feet) | 390.6 | Elevation Datum |
| Apparent Groundwater Depth (feet) | | Date Measured | Comments | | |

| Depth, feet | SAMPLES Number | SAMPLES Type | SAMPLES Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES Water Content, % | SOIL PROPERTIES Dry Unit Weight, pcf | SOIL PROPERTIES Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | 0-145.0 LANDSLIDE DEPOSIT<br>0-6.0 TOPSOIL<br>6.0-145.0 DISPLACED SANTA CLARA FORMATION<br>6.0-35.0 CLAY, brown; sticky; pebbles | | | | |
| 5 | | | | | | | | | |
| 10 | | | | | | | | | |
| 15 | | | | | | | | | |
| 20 | | | | | | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |
| 35 | | | | | 35.0-127.0 CLAY, gray to brown; sticky; pebbles | | | | |
| 40 | B-1 | | 30-50/5" | | SANDY CLAY (SC-CL), gray; pebbles up to 3/4 inch diam; hard | | | | |
| 45 | | | | | | | | | |
| 50 | | | | | | | | | |
| 55 | | | | | | | | | |
| 60 | | | | | | | | | |

DRAFT

**Project: Penitencia Water Treatment Plant Site Study**

**Project Location: San Jose, California**

# Log of Boring No. I-13

Sheet 2 of 3

| Depth, feet | SAMPLES Number | SAMPLES Type | SAMPLES Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES Water Content, % | SOIL PROPERTIES Dry Unit Weight, pcf | SOIL PROPERTIES Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 60 | | | | | | | | | |
| 65 | | | | | | | | | |
| 70 | | | | | | | | | |
| 75 | | | | | | | | | |
| 80 | B-2 | | 30-50/5" | | CLAY (CL), gray to brown; mottled; pebbles; stiff; hard | | | | |
| 85 | | | | | | | | | |
| 90 | | | | | | | | | |
| 95 | | | | | | | | | |
| 100 | | | | | | | | | |
| 105 | | | | | | | | | |
| 110 | | | | | | | | | |
| 115 | | | | | | | | | |
| 120 | B-3 | | 50/4" | | SANDY CLAY (CL); gray to brown; mottled; few pebbles; stiff; very hard | | | | |
| 125 | | | | | 127.0-145.0 interbeds of weathered bedrock | | | | |
| 130 | | | | | | | | | |

DRAFT

**Project: Penitencia Water Treatment Plant Site Study**

**Project Location: San Jose, California**

# Log of Boring No. I-13

Sheet 3 of 3

| Depth, feet | SAMPLES Number | SAMPLES Type | SAMPLES Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES Water Content, % | SOIL PROPERTIES Dry Unit Weight, pcf | SOIL PROPERTIES Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 135 | | | | | | | | | |
| 140 | P-1 | | | | GRAVELLY CLAY (CL), greenish-gray; cobbles up to 1/2 inch diam; altered serpentinite; stiff (CL)* | 26 | 105 | | 17/30 = 57% recovery<br>-#200 = 67%, +#4 = 10%<br>LL = 42, PI = 26<br>* (classification given by lab data) |
| 145 | | | | | 145.0-149.0 BASAL LANDSLIDE DEPOSIT | | | | Principal landslide failure zone at 145-149 ft depth, with principal failure surface estimated at 146 ft depth based on subsequent inclinometer data |
| 150 | | | | | 149.0-178.5 SANTA CLARA FORMATION | | | | |
| 155 | | | | | | | | | |
| 160 | | | | | | | | | |
| 165 | | | | | | | | | |
| 170 | B-4 | | 50/1" | | SANDY CLAY, brown; pebbles; cobbles up to 1 inch or more diam; sticky | | | | 50/1 inch = REFUSAL |
| 175 | | | | | | | | | |
| 180 | | | | | Bottom of Boring at 178-1/2 feet<br>Installed 177 ft of inclinometer casing with 22-1/2 inches of stick-up<br>A0 direction = S66W | | | | revised 3/10/87<br>REK<br>Laboratory test data from R. L. Volpe, November, 1985 |
| 185 | | | | | | | | | |
| 190 | | | | | | | | | |
| 195 | | | | | | | | | |
| 200 | | | | | | | | | |

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Santa Clara Valley Water District

4/9/93 1GLGBA SCVW1

**Project: Penitencia Water Treatment Plant Site Study**

**Project Location: San Jose, California**

# Log of Boring No. I-23

Sheet 1 of 3

| | | | | | |
|---|---|---|---|---|---|
| Date(s) Drilled | 6/20/91 -6/24/91 | | Boring Location | Next to recovery ponds | |
| Drilling Method | Rotary Wash | | Drilling Company | Pitcher Drilling Co. | Driller: Brmalj/McKnight |
| Drill Rig Type | Failing 1500 | | Logged By | Trish Gomes | Completion Depth (feet): 158.0 |
| North Coordinate | 329686 | East Coordinate: 1612709 | Approximate Ground Surface Elevation (feet) | 391.0 | Elevation Datum |
| Apparent Groundwater Depth (feet) | | Date Measured | Comments | | |

| Depth, feet | SAMPLES: Number | SAMPLES: Type | SAMPLES: Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES: Water Content, % | SOIL PROPERTIES: Dry Unit Weight, pcf | SOIL PROPERTIES: Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | 0-6' - medium brown CLAYEY SAND, molds easily, some white, green weathered material, medium plasticity | | | | 0-25' Drag Bit |
| 5 | | | | | | | | | |
| 10 | | | | | (SC) | | | | |
| 15 | | | | | | | | | |
| 20 | | | | | 17' - same as above, increased black, dark green gravels<br>17-50' - sample gets progressively darker, more stiff and plastic, gravel content increases, still a CLAYEY SAND matrix | | | | |
| 25 | | | | | | | | | |
| 30 | | | | | (SC-GC) | | | | |
| 35 | | | | | | | | | |
| 40 | | | | | | | | | |
| 45 | | | | | | | | | |
| 50 | | | | | | | | | |
| 55 | | | | | | | | | |
| 60 | | | | | | | | | |

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**Project: Penitencia Water Treatment Plant Site Study**

**Project Location: San Jose, California**

# Log of Boring No. I-23



| Depth, feet | SAMPLES Number | SAMPLES Type | SAMPLES Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES Water Content, % | SOIL PROPERTIES Dry Unit Weight, pcf | SOIL PROPERTIES Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 60 | | | | | same | | | | |
| 65 | | | | | | | | | |
| 70 | | | | | | | | | |
| 75 | | | | | | | | | |
| 80 | | | | | 80' - some gravels, color lightens (GC) | | | | Drill chatter, change to tri-cone |
| 85 | | | | | 85' - same sample with larger s.s. chips | | | | |
| 90 | | | | | 91' - same sample with increasing green pebbles of serpentine and some gray clay | | | | |
| 95 | | | | | 97' - increased serpentinite weathered CLAY | | | | |
| 100 | PB-1 | | | | light yellow brown CLAYEY SAND with small particles of serpentine and red clay and pebbles, stiff and plastic | | | | 100% recovery |
| | PB-2 | | | | | | | | 100% recovery, PP = 3.5, 4, 4.5 |
| 105 | PB-3 | | | | *SANDY CLAY (CH) Very stiff to hard, moist, yellowish brown (10YR 5/8), trace to some fine to coarse subangular gravel | 23 | 109 | | 30/36 = 83% recovery |
| | PB-4 | | | | same as PB-2 | 20 | 110 | | 100% recovery, PP = 3.2, 4.5, 4.2 LL = 67, PI = 50, -#200 = 38% |
| 110 | PB-5 | | | | *CLAYEY SAND (SC) Very dense, moist, dark yellowish brown (10YR 4/6), trace fine to coarse angular and subangular gravel | 20 | 116 | | PP = 4.5, 3.2, >4.5 LL = 63, PI = 39 |
| 115 | | | | | *SILTY CLAY (CH) Hard, moist, yellowish brown (10YR 5/6), trace fine to coarse sand, trace fine to coarse gravel, slickensides noted in near-vertical orientation | | | | |
| 120 | | | | | | | | | |
| 125 | | | | | 126' - increasing light yellow brown CLAY with GRAVEL | | | | |
| 130 | | | | | 128-158' - GRAVEL | | | | |

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**Project: Penitencia Water Treatment Plant Site Study**

**Project Location: San Jose, California**

# Log of Boring No. I-23

Sheet 3 of 3

| Depth, feet | SAMPLES: Number | SAMPLES: Type | SAMPLES: Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES: Water Content, % | SOIL PROPERTIES: Dry Unit Weight, pcf | SOIL PROPERTIES: Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 135 | | | | | | | | | |
| 140 | | | | | | | | | |
| 145 | | | | | | | | | |
| 150 | | | | | | | | | |
| 155 | | | | | (GC) | | | | |
| 160 | | | | | Bottom of Boring at 158 feet<br>Casing to 160', 2' stickup | | | | Reamed hole 80' to bottom before setting casing<br><br>* Descriptions of PB-2, PB-4 and PB-5 by Woodward-Clyde Consultants, 1992. |
| 165 | | | | | | | | | |
| 170 | | | | | | | | | |
| 175 | | | | | | | | | |
| 180 | | | | | | | | | |
| 185 | | | | | | | | | |
| 190 | | | | | | | | | |
| 195 | | | | | | | | | |
| 200 | | | | | | | | | |

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| Project: Penitencia Water Treatment Plant Site Study | Log of Boring No. 9-PZ |
|---|---|
| Project Location: San Jose, California | Sheet 1 of 3 |

| | | | | | |
|---|---|---|---|---|---|
| Date(s) Drilled | 8/19/86 - 8/20/86 | | Boring Location | aprox. 35' w of #I-13, N end of sludge beds | |
| Drilling Method | Rotary Wash | | Drilling Company | Pitcher Drilling Co. | Driller: Steve Brmalj |
| Drill Rig Type | Failing 1500 | | Logged By | R.E Kimmel | Completion Depth (feet): 148.5 |
| North Coordinate | 330141 | East Coordinate: 1612125 | Approximate Ground Surface Elevation (feet) | 389.1 | Elevation Datum |
| Apparent Groundwater Depth (feet) | | Date Measured | Comments | | |

| Depth, feet | SAMPLES: Number | SAMPLES: Type | SAMPLES: Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES: Water Content, % | SOIL PROPERTIES: Dry Unit Weight, pcf | SOIL PROPERTIES: Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | 0.0 - 146.0<br>LANDSLIDE DEPOSIT<br>0.0 - 4.0 (est.)<br>TOPSOIL<br>4.0 (est.) - 146.0<br>DISPLACED SANTA CLARA FORMATION<br>4.0 - 83.0<br>SILTY/GRAVELLY CLAY | | | | * classifications with an asterisk are from laboratory reports of examination; others are field estimates. Soil sample descriptions are based on limited field examination, supplemented by laboratory examination in some cases. |
| 25 | P-1 | | | | CLAY (CH*), mod. yellowish-brown (10YR 5/4) to dark yellowish-brown (10 YR 4/2); <10% sand; pebbles up to 1/2 inch diam. of varying composition; nearly horizontal internal bedding; hard; damp. | 20 | 110 | | 22/30 = 73% recovery |
| 50 | P-2 | | | | SANDY CLAY (CH*), dark yellowish-brown (10 YR 4/2); grayish olive layer above (10 Y 4/2); hard; damp | 17 | 113 | | 30/30 = 100% recovery<br>LL=51, PI=31<br>-#200=85%, +#4=0% |
| 60 | | | | | | | | | |

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Santa Clara Valley Water District

4/9/93 1GLG8A SCVW1

**Project: Penitencia Water Treatment Plant Site Study**

**Project Location: San Jose, California**

# Log of Boring No. 9-PZ



| Depth, feet | SAMPLES Number | SAMPLES Type | SAMPLES Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES Water Content, % | SOIL PROPERTIES Dry Unit Weight, pcf | SOIL PROPERTIES Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 80 | P-3 | | | | CLAY (SC*) dark yellowish-brown (10 YR 4/2); interlayered with gravel of varying composition; hard; moist to very moist | 16 | | | 30/30 = 100% recovery<br>NOTE: Sampler only driven 1.5 ft, but 2.5 ft of sample returned<br>-#200 = 26%, +#4 = 27% |
| | | | | | 83.0 - 132.0 SILTY/SANDY CLAY, gravel | | | | |
| 105 | P-4 | | | | 104.0 - 105.0 COBBLY LAYER | | | | |
| | | | | | CLAY (CL*), dark yellowish-brown (10 YR 4/2); homogenous; 20% sand; hard; dense; slightly damp | 14 | 121 | | 24/24 = 100% recovery<br>NOTE: Sampler only driven 2 ft |

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**Project: Penitencia Water Treatment Plant Site Study**

**Project Location: San Jose, California**

# Log of Boring No. 9-PZ

Sheet 3 of 3

| Depth, feet | SAMPLES Number | SAMPLES Type | SAMPLES Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES Water Content, % | SOIL PROPERTIES Dry Unit Weight, pcf | SOIL PROPERTIES Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 135 | | | | | 132.0 - 146.0 SILTY CLAY AND SERPENTINITE | | | | |
| 140 | | | | | | | | | |
| 145 | P5 | | | | 146.0 - 148.5 SANTA CLARA FORMATION<br>SANDY SERPENTINITE (CH*), olive-gray (5 Y 4/1); pebbles; stiff; damp | 19 | 111 | | principal basal landslide shear zone at 144-150 feet; principal failure surface at 146 feet, based on adjacent inclinometer #I-13<br>30/30 = 100% recovery<br>LL = 56, PI = 34<br>-#200 = 74%, +#4 = 3%<br>installed piezometer #16 at 144 ft, and piezometer #17 at 80 ft |
| 150 | | | | | Bottom of Boring at 148-1/2 feet | | | | |
| 155 | | | | | | | | | |
| 160 | | | | | | | | | |
| 165 | | | | | | | | | |
| 170 | | | | | | | | | |
| 175 | | | | | | | | | |
| 180 | | | | | | | | | |
| 185 | | | | | | | | | |
| 190 | | | | | | | | | |
| 195 | | | | | | | | | |
| 200 | | | | | | | | | |

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**Project: Penitencia Water Treatment Plant Site Study**
**Project Location: San Jose, California**
**Log Source: Dames & Moore; March, 1972**

# Log of Boring No. B-3

Sheet 1 of 3

| | | | | | |
|---|---|---|---|---|---|
| Date(s) Drilled | 11/29/71 -11/30/71 | | Boring Location | | |
| Drilling Method | Rotary Wash | | Drilling Company | | Driller |
| Drill Rig Type | Failing 750 | | Logged By | | Completion Depth (feet) 100.0 |
| North Coordinate | 329975 | East Coordinate 1612435 | Approximate Ground Surface Elevation (feet) | 392.0 | Elevation Datum |
| Apparent Groundwater Depth (feet) | | Date Measured | Comments | Designated as "Boring 3" in original report | |

| Depth, feet | SAMPLES Number | SAMPLES Type | SAMPLES Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES Water Content, % | SOIL PROPERTIES Dry Unit Weight, pcf | SOIL PROPERTIES Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | | dark brown plastic SILTY CLAY (CH) with occasional pebbles, dry, (hard) | | | | |
| | 1 | | 64 | | | 71 | 58 | | |
| | | | | | (grading medium brown - moist - with some sand) | | | | |
| 5 | | | | | (grading with some rounded gravel to 1/2" diameter) | | | | |
| | 2 | | 30 | | | 25 | 102 | | |
| | | | | | mottled green & brown plastic SILTY SANDY CLAY (CH) with some angular gravel (very stiff) | | | | |
| 10 | | | | | | | | | |
| | 3 | | 52 | | (contains microfractures) | 23 | 105 | | LL = 60, PI = 22 |
| 15 | | | | | (grading slightly sandier) | | | | |
| | 4 | | 64 | | | 23 | 105 | | |
| 20 | | | | | (with occasional orange oxidation stains on fracture surfaces) | | | | |
| | 5 | | 82 | | | 20 | 110 | | |
| 25 | | | | | | | | | |
| 30 | | | | | | | | | |

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**Project: Penitencia Water Treatment Plant Site Study**
**Project Location: San Jose, California**
**Log Source: Dames & Moore; March, 1972**

# Log of Boring No. B-3

Sheet 2 of 3

| Depth, feet | SAMPLES Number | SAMPLES Type | SAMPLES Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES Water Content, % | SOIL PROPERTIES Dry Unit Weight, pcf | SOIL PROPERTIES Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 30 | | | | | mottled grayish green & reddish brown SANDY SILTY CLAY (CL) with occasional gravel & decomposed rocks (hard) | | | | |
| 35 | 6 | | 102 | | | 19 | 113 | | |
| 40 | | | | | (variable amount of gravel interbedded with reddish brown silty sandy clay) | | | | |
| 45 | 7 | | 211 | | | 16 | 119 | | |
| 50 | | | | | | | | | |
| 55 | 8 | | 222/ 10" | | | 16 | 119 | | |
| 60 | | | | | | | | | |
| 65 | | | | | | | | | |

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**Project: Penitencia Water Treatment Plant Site Study**
**Project Location: San Jose, California**
**Log Source: Dames & Moore; March, 1972**

# Log of Boring No. B-3

Sheet 3 of 3

| Depth, feet | SAMPLES Number | SAMPLES Type | SAMPLES Sampling Resistance | Graphic Log | DESCRIPTION | SOIL PROPERTIES Water Content, % | SOIL PROPERTIES Dry Unit Weight, pcf | SOIL PROPERTIES Qu, ksf | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 70 | 9 | | 164 | | | 19 | 113 | | |
| 75 | | | | | | | | | |
| 80 | | | | | | | | | |
| 85 | 10 | | 240 | | (gravel layer) | 16 | 119 | | |
| 90 | | | | | | | | | |
| 95 | | | | | (joint surface with faint slickensides)<br>(occasional charcoal fragments & calcareous nodules) | | | | |
| | 11 | | 50/2" | | | 31 | 93 | | |
| 100 | | | | | Bottom of Boring at 100 feet | | | | |

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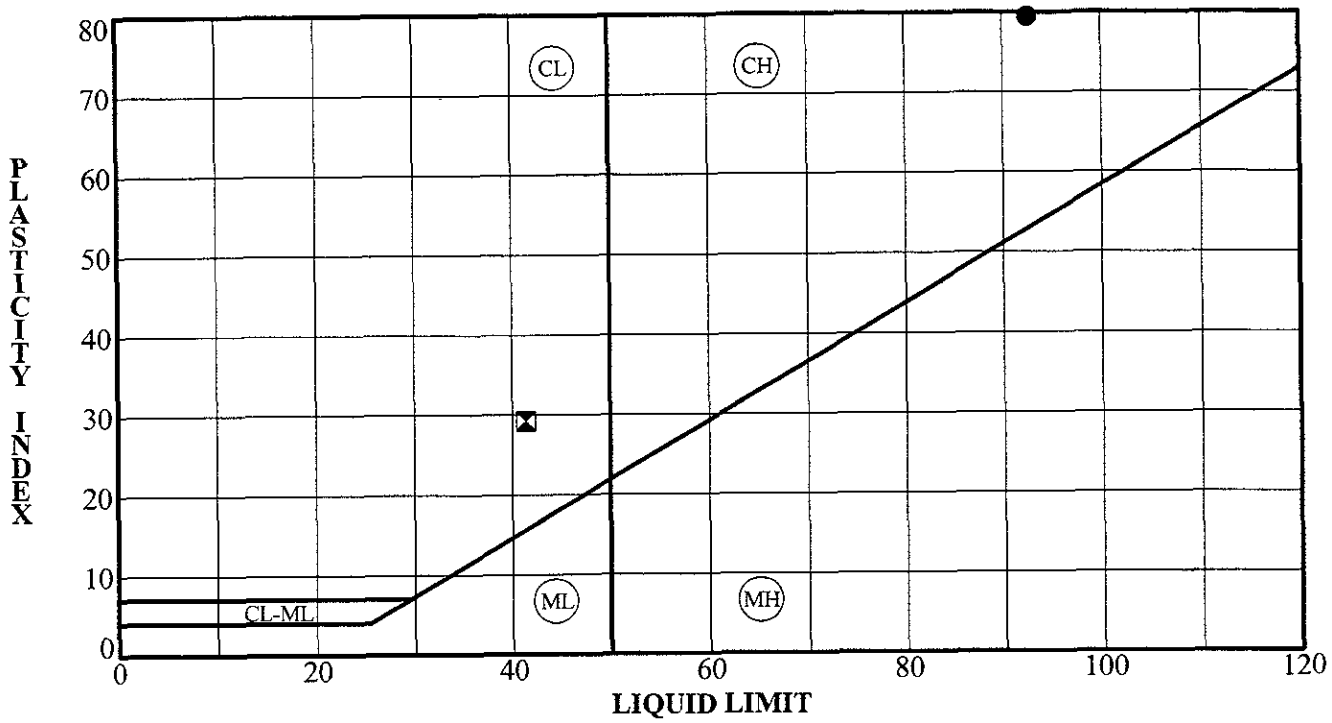
# APPENDIX D

## PREVIOUS LABORATORY TEST DATA

A resistance "R" value test was performed on a representative sample of the surface soils on-site to provide data for pavement design. The test was performed in accordance with California Test Method 301-F and indicated an "R" value of 3 at an exudation pressure of 300 pounds per square inch. The results of the tests are presented below:

| RESULTS OF R-VALUE TEST | | | | | |
|---|---|---|---|---|---|
| **Description of Material** | **Dry Density (pcf)** | **Water Content (%)** | **Exudation Pressure (psi)** | **Expansion Pressure (psf)** | **"R" Value** |
| Light Brown Silty Clay | 95.4 | 26.5 | 159 | 61 | 1 |
| | 96.5 | 24.3 | 302 | 79 | 3 |
| | 98.9 | 22 | 382 | 96 | 7 |
| **R-Value = 3 at Exudation pressure of 300 psi** | | | | | |




| Key Symbol | Boring No. | Depth (Feet) | Liquid Limit | Plasticity Index | Liquidity Index | Water Content (%) | % Passing #200 Sieve | USCS |
|---|---|---|---|---|---|---|---|---|
| ● | EB-1 | 4.5 | 93 | 80 | 0.175 | 27 | 98 | CH |
| ⊠ | EB-1 | 14.0 | 41 | 29 | 0.051 | 14 | 27 | SC |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
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| | | | | | | | | |

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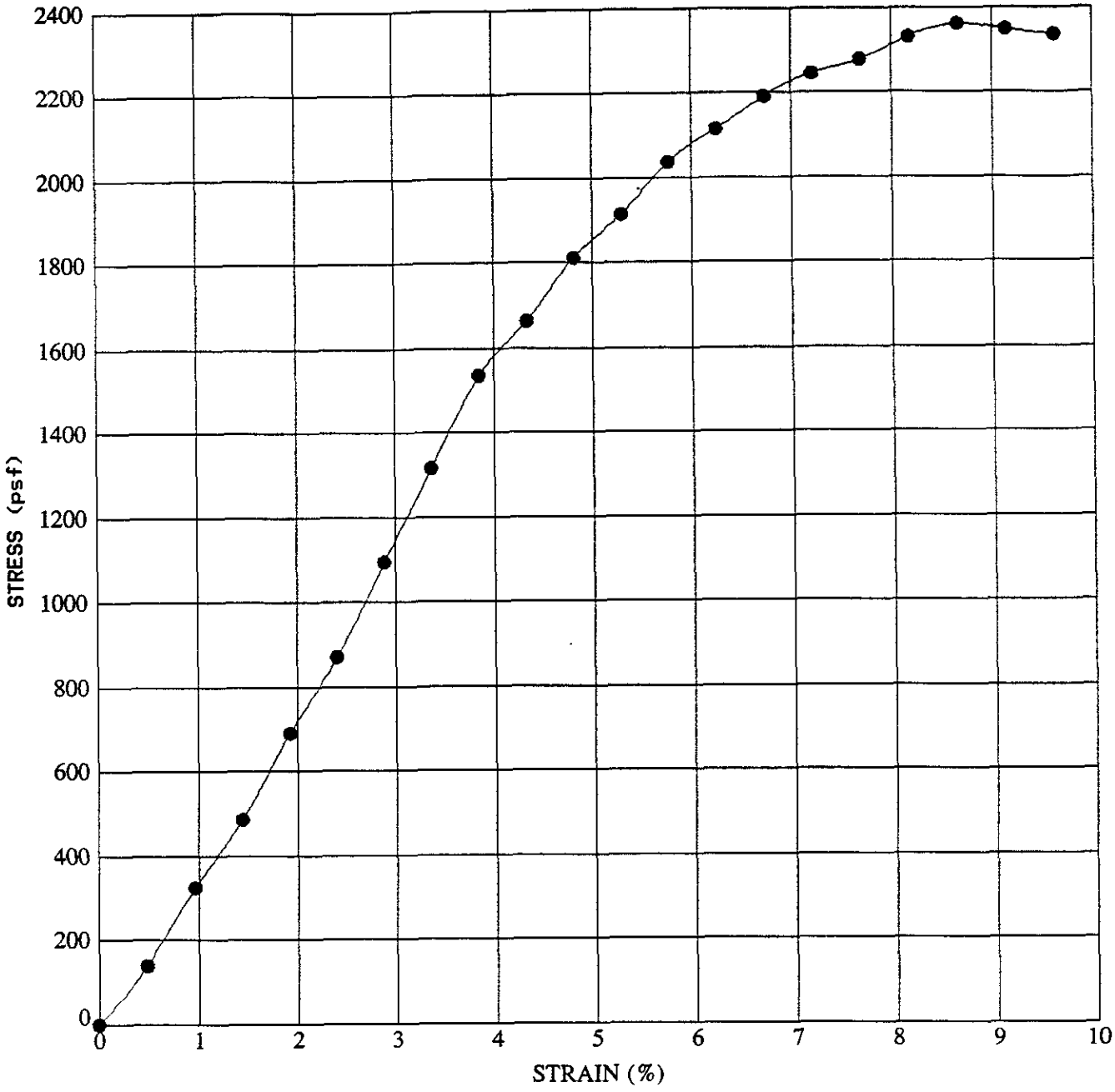
PREP'D BY: FDH
APP'D BY:
DATE: 7/31/00
DWG FILE: 17319P-1.GPJ

PLASTICITY CHART AND DATA

**WATER TREATMENT IMPROV. PROJECT, STAGE 2**
**Penitencia WTP, San Jose, CA**

FIGURE
**B-1**
PROJECT No
17319-CA

File Name: G:\ENGINEER\GINTW\PROJECTS\17319P-1.GPJ Report Template: ATT_B Output Date: 7/31/00




| Key Symbol | Location | Depth (Feet) | Sample Description (USCS) | Dry Density (pcf) | Water Content (%) | Unconfined Strength (psf) |
|---|---|---|---|---|---|---|
| ● | EB-1 | 4.5 | Gray brown clayey SILT (MH-OH) | 92.0 | 27.1 | 2359 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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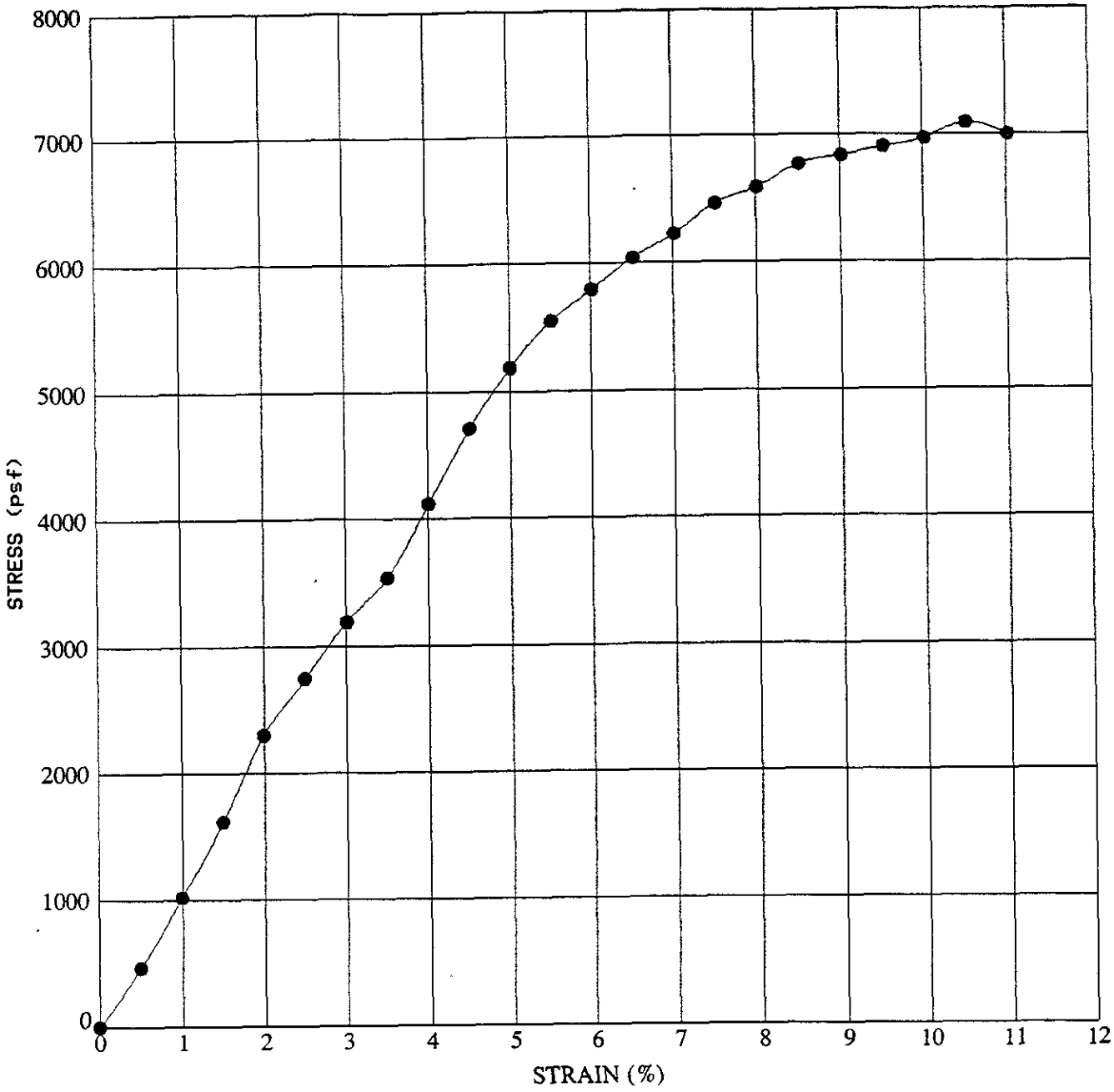
# UNCONFINED COMPRESSION TEST DATA

**PENITENTIA WATER TREATMENT PLANT**
**San Jose, California**

| PROJECT NO. | DATE | FIGURE NO. |
|---|---|---|
| **17319-CA** | **June 2000** | **B-2** |




| Key Symbol | Location | Depth (Feet) | Sample Description (USCS) | Dry Density (pcf) | Water Content (%) | Unconfined Strength (psf) |
|---|---|---|---|---|---|---|
| ● | EB-1 | 9.0 | Rust brown silty CLAY, trace gravel (CL) | 101.9 | 22.4 | 7090 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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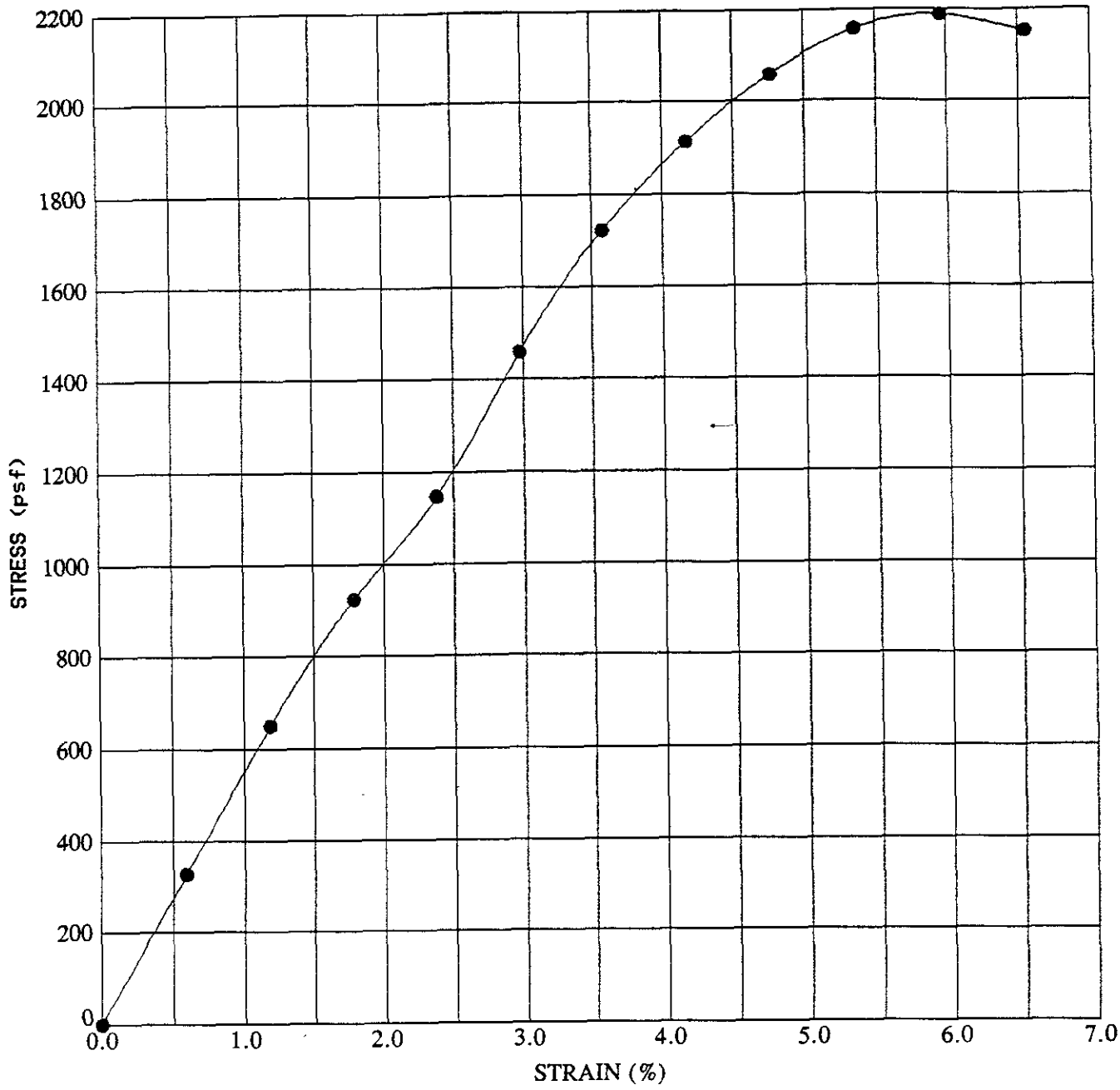
# UNCONFINED COMPRESSION TEST DATA

**PENITENTIA WATER TREATMENT PLANT**
**San Jose, California**

| PROJECT NO. | DATE | FIGURE NO. |
|---|---|---|
| **17319-CA** | **June 2000** | **B-3** |




| Key Symbol | Location | Depth (Feet) | Sample Description (USCS) | Dry Density (pcf) | Water Content (%) | Unconfined Strength (psf) |
|---|---|---|---|---|---|---|
| ● | EB-1 | 14.0 | Rust brown SAND, some clay, tr. gravel (SC) | 110.9 | 13.7 | 2186 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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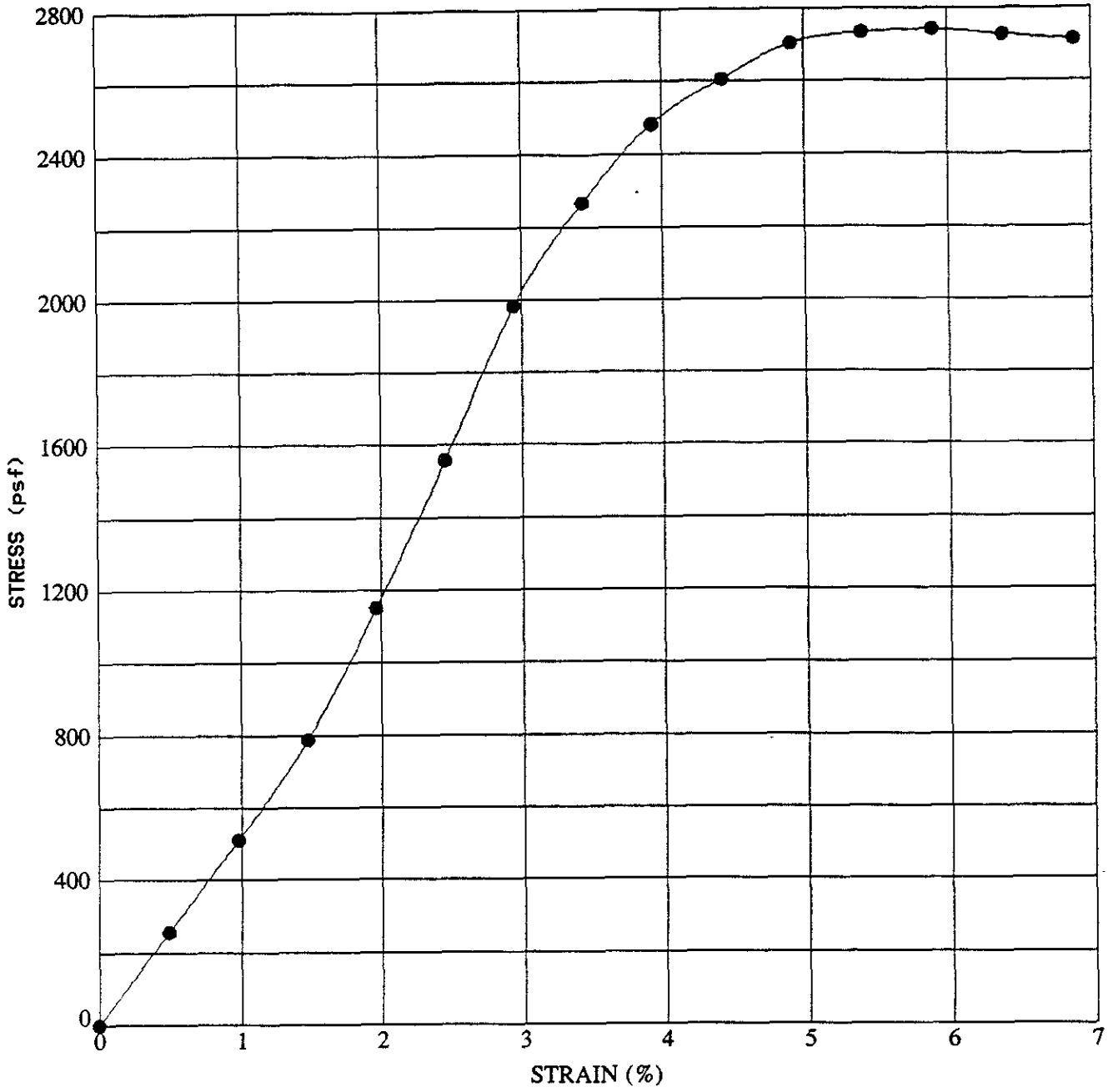
# UNCONFINED COMPRESSION TEST DATA

**PENITENTIA WATER TREATMENT PLANT**
**San Jose, California**

| PROJECT NO. | DATE | FIGURE NO. |
|---|---|---|
| **17319-CA** | **June 2000** | **B-4** |




| Key Symbol | Location | Depth (Feet) | Sample Description (USCS) | Dry Density (pcf) | Water Content (%) | Unconfined Strength (psf) |
|---|---|---|---|---|---|---|
| ● | EB-2 | 4.5 | Brown silty CLAY, trace sand (CL) | 86.4 | 31.7 | 2740 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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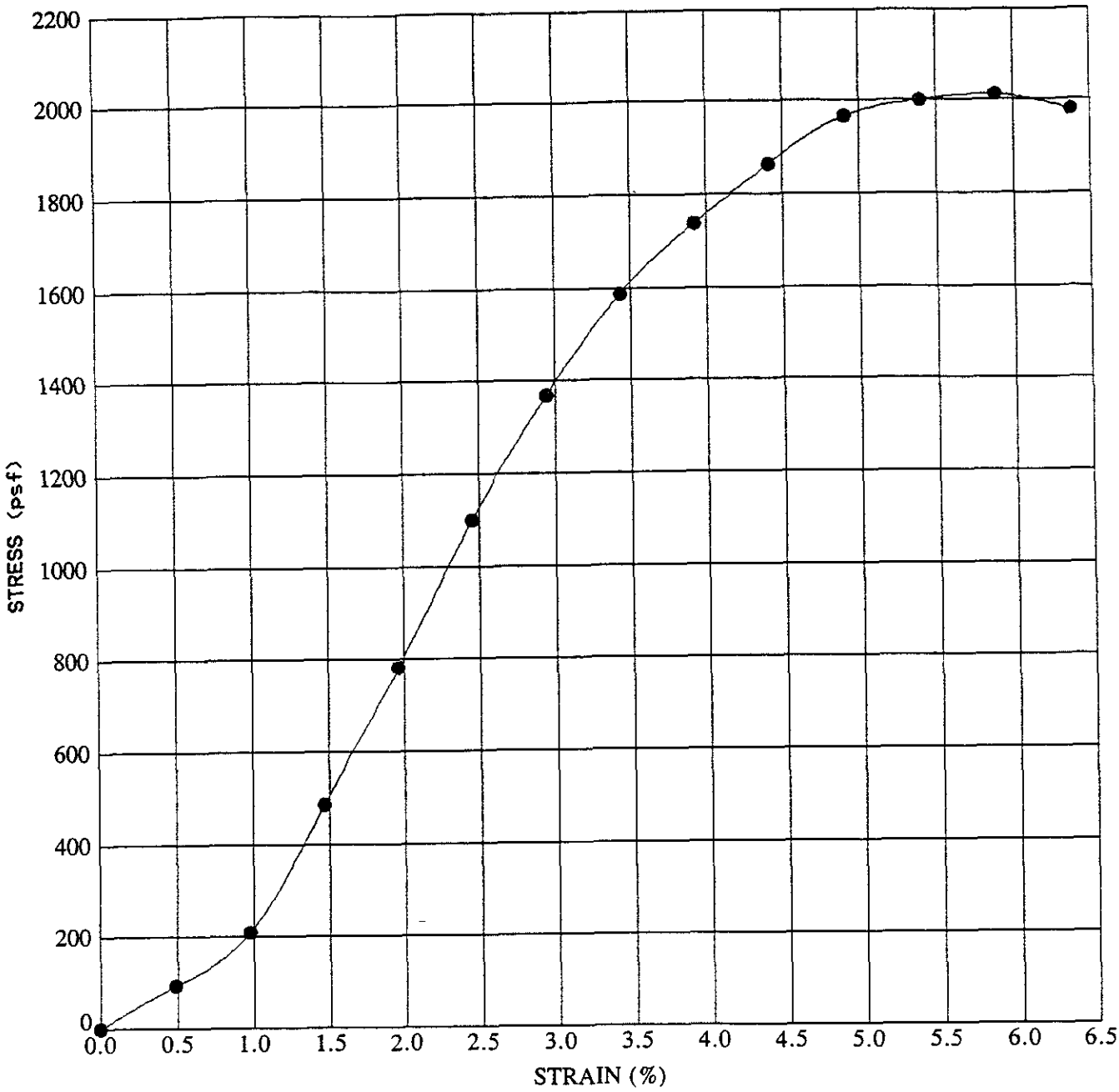
# UNCONFINED COMPRESSION TEST DATA

**PENITENTIA WATER TREATMENT PLANT**
**San Jose, California**

| PROJECT NO. | DATE | FIGURE NO. |
|---|---|---|
| **17319-CA** | **June 2000** | **B-5** |




| Key Symbol | Location | Depth (Feet) | Sample Description (USCS) | Dry Density (pcf) | Water Content (%) | Unconfined Strength (psf) |
|---|---|---|---|---|---|---|
| ● | EB-2 | 9.5 | Yellow green silty CLAY (CL) | 79.1 | 40.5 | 2011 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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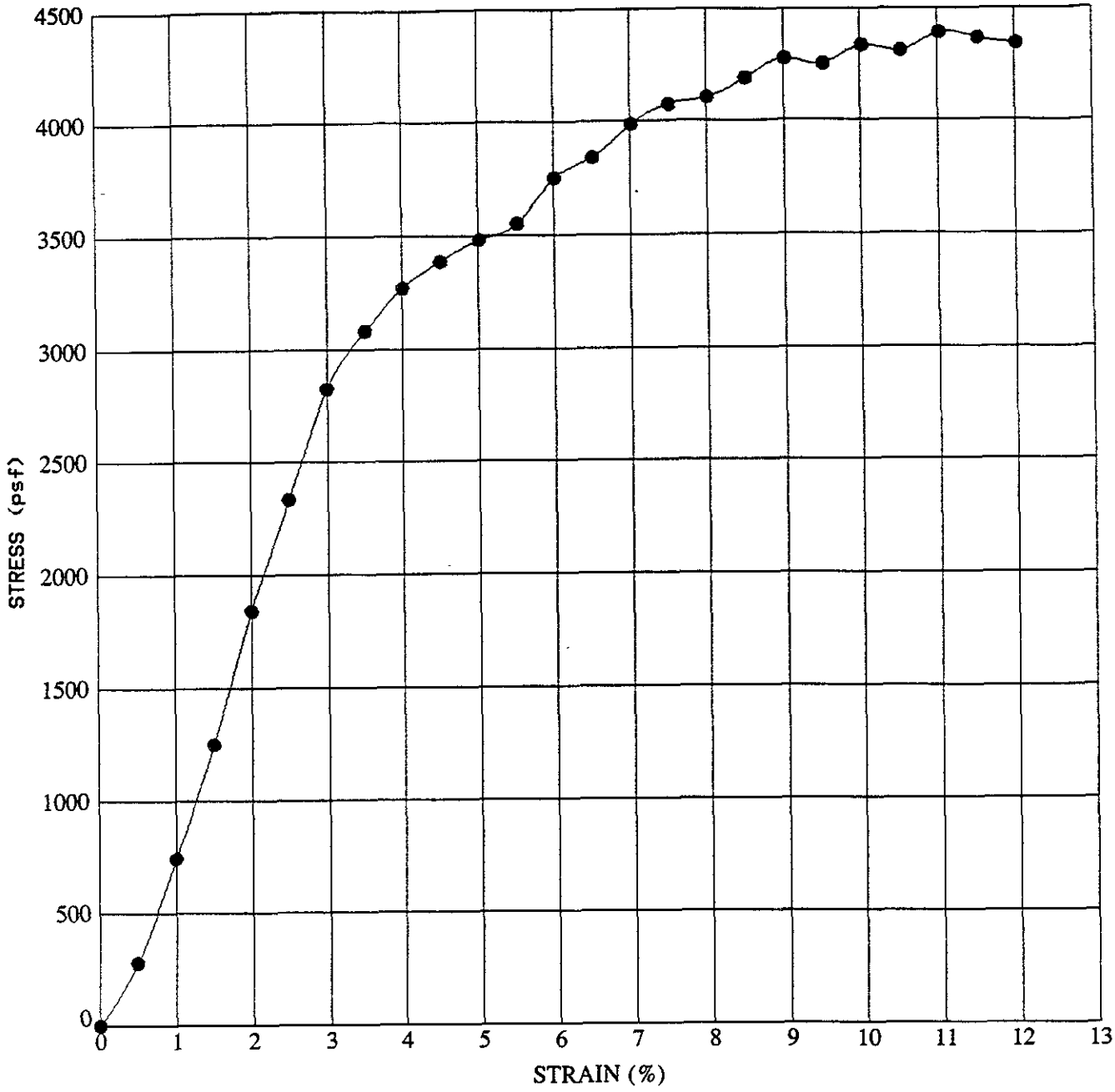
# UNCONFINED COMPRESSION TEST DATA

**PENITENTIA WATER TREATMENT PLANT**
**San Jose, California**

| PROJECT NO. | DATE | FIGURE NO. |
|---|---|---|
| 17319-CA | June 2000 | B-6 |




| Key Symbol | Location | Depth (Feet) | Sample Description (USCS) | Dry Density (pcf) | Water Content (%) | Unconfined Strength (psf) |
|---|---|---|---|---|---|---|
| ● | EB-2 | 14.5 | Orange brown silty CLAY, some sand (CL) | 102.4 | 24.3 | 4387 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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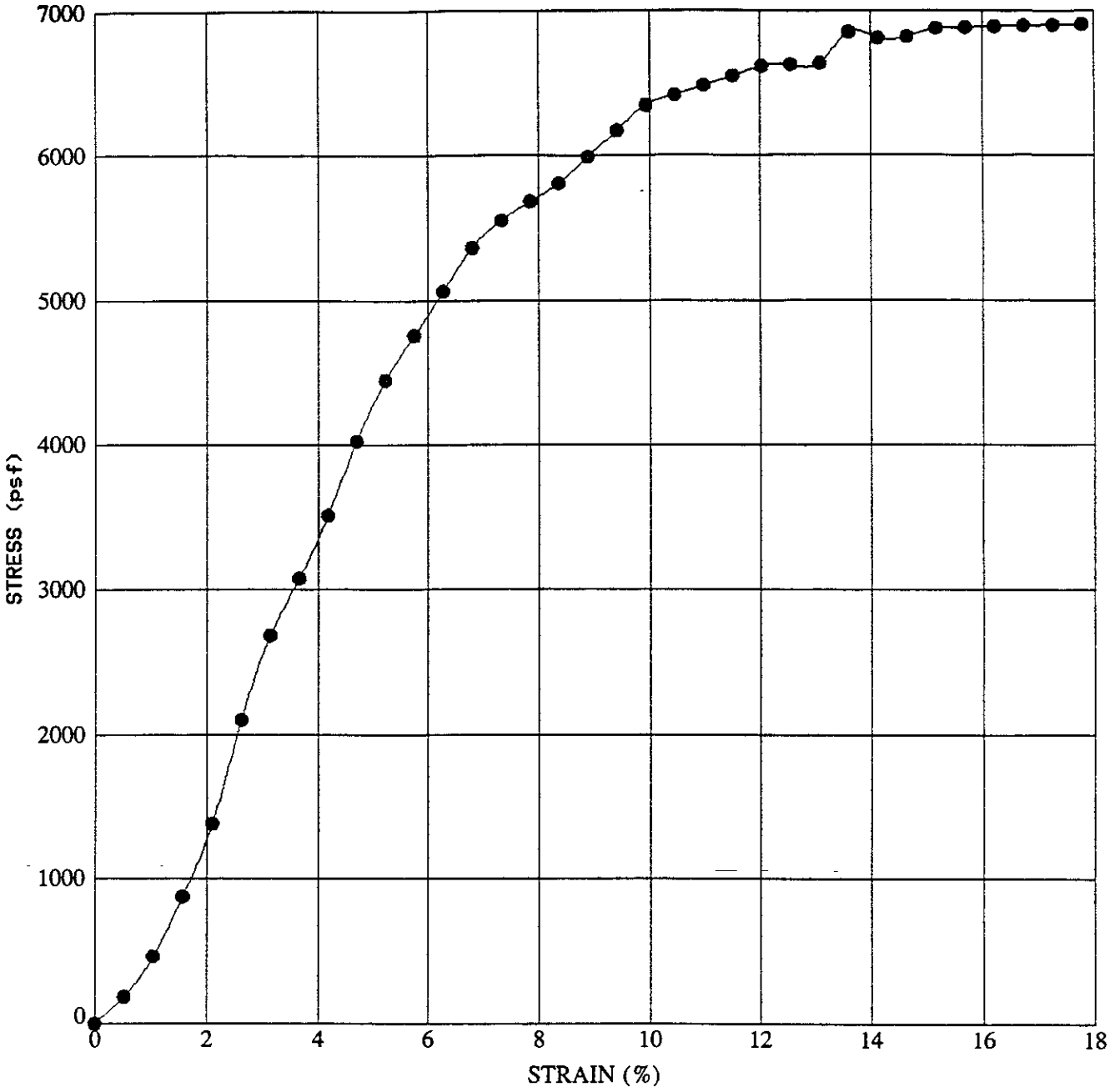
# UNCONFINED COMPRESSION TEST DATA

**PENITENTIA WATER TREATMENT PLANT**
**San Jose, California**

| PROJECT NO. | DATE | FIGURE NO. |
|---|---|---|
| **17319-CA** | **June 2000** | **B-7** |




| Key Symbol | Location | Depth (Feet) | Sample Description (USCS) | Dry Density (pcf) | Water Content (%) | Unconfined Strength (psf) |
|---|---|---|---|---|---|---|
| ● | EB-2 | 19.5 | Brown silty SAND, trace sand (CL) | 111.3 | 19.2 | 6901 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

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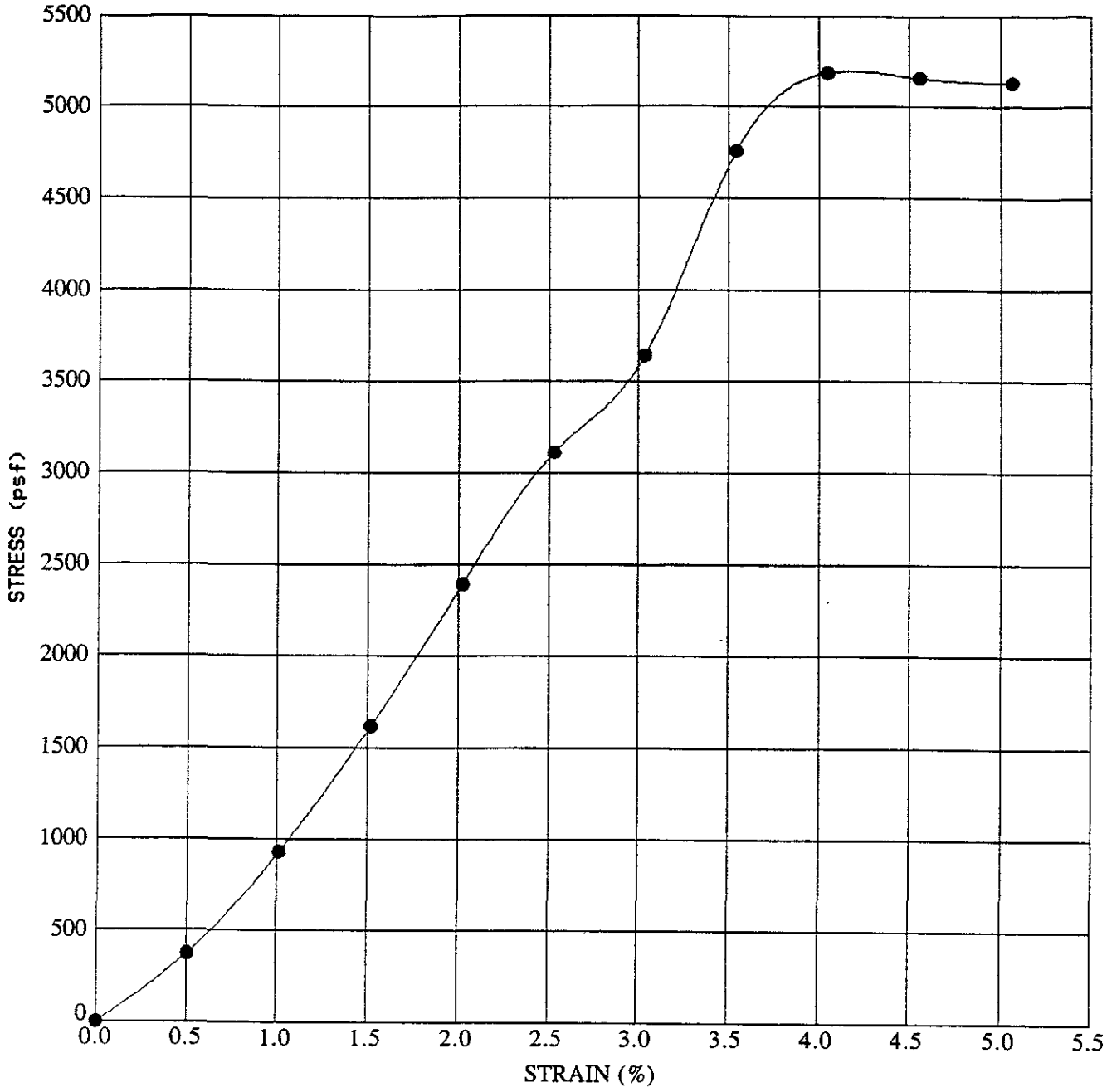
# UNCONFINED COMPRESSION TEST DATA

**PENITENTIA WATER TREATMENT PLANT**
**San Jose, California**

| PROJECT NO. | DATE | FIGURE NO. |
|---|---|---|
| **17319-CA** | **June 2000** | **B-8** |



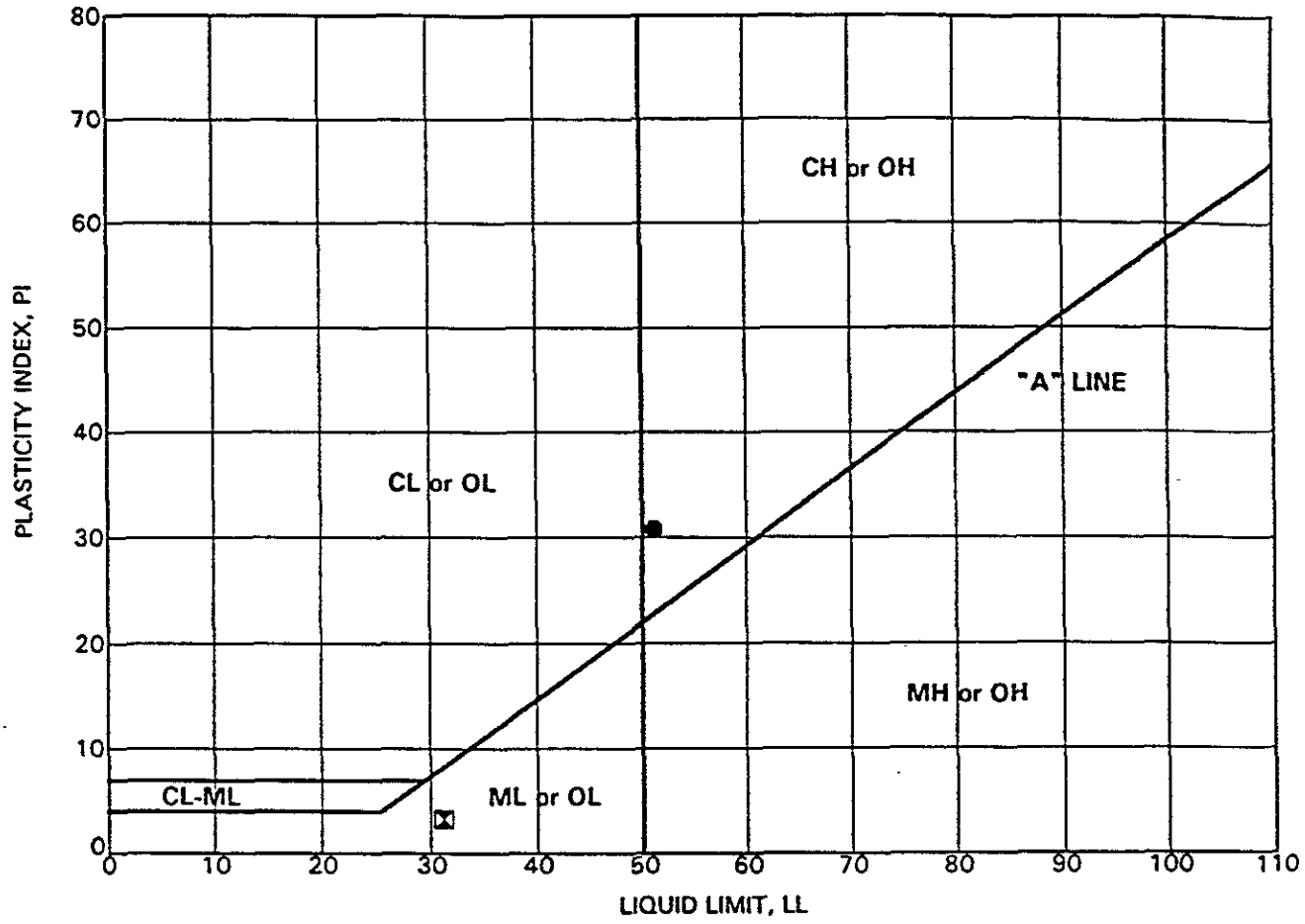

| Key Symbol | Location | Depth (Feet) | Sample Description (USCS) | Dry Density (pcf) | Water Content (%) | Unconfined Strength (psf) |
|---|---|---|---|---|---|---|
| ● | EB-3 | 9.5 | Dark brown silty CLAY, trace sand (CL) | 103.8 | 22.3 | 5181 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

HARZA
Engineering Company

# UNCONFINED COMPRESSION TEST DATA

**PENITENTIA WATER TREATMENT PLANT**
**San Jose, California**

| PROJECT NO. | DATE | FIGURE NO. |
|---|---|---|
| 17319-CA | June 2000 | B-9 |




| Boring Number | Sample Number | Depth (feet) | Test Symbol | Moisture Content (%) | LL | PL | PI | Description |
|---|---|---|---|---|---|---|---|---|
| P-2 | 2 | 5.0 | ● | 24 | 51 | 20 | 31 | |
| P-4 | 4 | 15.0 | ⊠ | 36 | 31 | 28 | 3 | |

Project: Penitencia Water Treatment Plant
Project Number: 91C0682R

# PLASTICITY CHART

Figure A-9

| BORING NUMBER | SAMPLE DEPTH (feet) | TEST DATA | | DIRECT SHEAR | | TRIAXIAL TEST/TORVANE | | UNCONFINED COMPRESSIVE STRENGTH (psf) | STRENGTH PARAMETERS | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | TEST TYPE | PEAK/ RESIDUAL | NORMAL STRESS (psf) | SHEAR STRESS (psf) | CONFINING PRESSURE (PSF) | UNDRAINED STRENGTH (psf) | | COHESION (psf) | FRICTION ANGLE (degrees) |
| | 25.5 | PP | | | | | | 9,000 | | |
| B-59 | 7 | PP | | | | | | 9,000 | | |
| | 12.5 | PP | | | | | | 9,000 | | |
| B-60 | 3.5 | PP | | | | | | 9,000 | | |
| | 15.5 | PP | | | | | | 9,000 | | |
| | 17 | PP | | | | | | 9,000 | | |
| B-64 | 5 | DS | | | | | | | 650 | 20 |
| B-69 | 8 | DS | | | | | | | 600 | 21 |
| B-76 | 5 | TX/UD | | | | | | | 600 | 13 |
| | 15 | TX/UD | | | | | | | 400 | 8 |
| | 20 | TX/UD | | | | | | | 1000 | 2 |
| B-78 | 10 | TX/UD | | | | | | | 500 | 6 |
| B-81 | 5 | TX/UD | | | | | | | 200 | 21 |
| B-85 | 10 | TX/UD | | | | | | | 400 | 34 |
| | 25 | TX/UD | | | | | | | 600 | 26 |
| I-3A | 203 | DS | | 1,000 | 1,258 | | | | 800 | 10.5 |
| | | | | 2,000 | 1,130 | | | | | |
| | | | | 3,000 | 1,389 | | | | | |
| | | | | 1,000 | 990 | | | | | |
| I-10 | 42 | DS | peak | 4,320 | 2,070 | | | | 0 | 22 |
| | | | residual | | 2,070 | | | | 860 | 16 |
| | | | residual | | 2,090 | | | | 860 | 16 |
| | | | peak | 8,640 | 2,720 | | | | 0 | 22 |
| | | | residual | | 2,910 | | | | 860 | 16 |
| | | | residual | | 2,720 | | | | 860 | 16 |
| I-11 | 102 | DS | peak | 10,800 | 4,450 | | | | 0 | 22 |
| | | | residual | | 4,610 | | | | 860 | 16 |
| | | | residual | | 4,160 | | | | 860 | 16 |
| | | | peak | 18,000 | 7,630 | | | | 0 | 22 |
| | | | residual | | 6,970 | | | | 860 | 16 |
| | | | residual | | 5,800 | | | | 860 | 16 |
| I-14 | 202 | DS | peak | 21,600 | 10,180 | | | | 0 | 22 |
| | | | residual | | 12,020 | | | | 860 | 16 |
| | | | residual | | 12,990 | | | | 860 | 16 |
| 8-PZ | 30 | TX/CD | peak | | | 3,600 | 2,520 | | 0 | 24 |
| | 97.5 | TX/CD | peak | | | 12,960 | 5,650 | | 0 | 18 |
| 9-PZ | 50 | TX/CD | peak | | | 7,200 | 6,480 | | 0 | 28 |
| | 146 | TX/CD | peak | | | 10,800 | 3,600 | | 0 | 15 |

TABLE B-2 (continued)

SUMMARY OF MATERIAL INDEX PROPERTIES

| Borehole | Depth (feet) | Unconfined Compression (tsf) | Water Content (%) | Dry Density (pcf) | Liquid Limit | Plas-ticity Index | <#200 Sieve (%) | >#4 Sieve (%) |
|---|---|---|---|---|---|---|---|---|
| B-16 | 8.5 | | 19 | 104 | | | | |
| B-16 | 23.0 | | 20 | 106 | | | | |
| B-17 | 1.0 | | 14 | 100 | 42 | 27 | | |
| B-17 | 3.0 | | 14 | 112 | | | | |
| B-17 | 5.0 | | 16 | 110 | | | 36 | 100 |
| B-17 | 10.0 | | 14 | 111 | | | | |
| B-18 | 5.0 | | 14 | 114 | | | | |
| B-19 | 2.0 | | 38 | 78 | 82 | 55 | | |
| B-19 | 5.0 | | 18 | 96 | | | | |
| B-2 | 2.0 | | 47 | 75 | | | | |
| B-2 | 7.0 | | 28 | 97 | | | | |
| B-2 | 12.0 | | 24 | 104 | | | | |
| B-2 | 13.5 | | 25 | 102 | | | | |
| B-2 | 20.0 | | 26 | 100 | | | | |
| B-2 | 26.0 | | 29 | 96 | | | | |
| B-2 | 30.0 | | 21 | 105 | | | | |
| B-2 | 35.0 | | 23 | 105 | | | | |
| B-2 | 40.0 | | 27 | 99 | | | | |
| B-2 | 45.0 | | 23 | 105 | | | | |
| B-2 | 50.0 | | 21 | 105 | | | | |
| B-2 | 57.0 | | 21 | 104 | | | | |
| B-2 | 64.0 | | 19 | 112 | | | | |
| B-2 | 74.0 | | 17 | 116 | | | | |
| B-2 | 85.0 | | 39 | 83 | | | | |
| B-2 | 97.0 | | 21 | 105 | | | | |
| B-21 | 2.0 | | 14 | 109 | | | | |
| B-21 | 5.0 | | 12 | 116 | | | | |
| B-22 | 3.5 | | 20 | 102 | | | | |
| B-22 | 13.5 | | 32 | | | | | |
| B-22 | 33.5 | | 19 | | | | | |
| B-23 | 3.5 | | 14 | | | | | |
| B-23 | 14.0 | | 18 | | | | | |
| B-23 | 23.5 | | 21 | | | | | |
| B-24 | 18.5 | | 18 | | | | | |
| B-25 | 28.5 | | 21 | | | | | |
| B-26 | 25.0 | | 36 | 88 | | | | |
| B-28 | 5.0 | | 21 | 102 | | | | |
| B-3 | 2.0 | | 71 | 58 | | | | |
| B-3 | 7.0 | | 25 | 102 | | | | |
| B-3 | 12.0 | | 23 | 105 | 60 | 22 | | |
| B-3 | 17.0 | | 23 | 105 | | | | |
| B-3 | 23.5 | | 20 | 110 | | | | |
| B-3 | 35.0 | | 19 | 113 | | | | |

TABLE B-2 (continued)

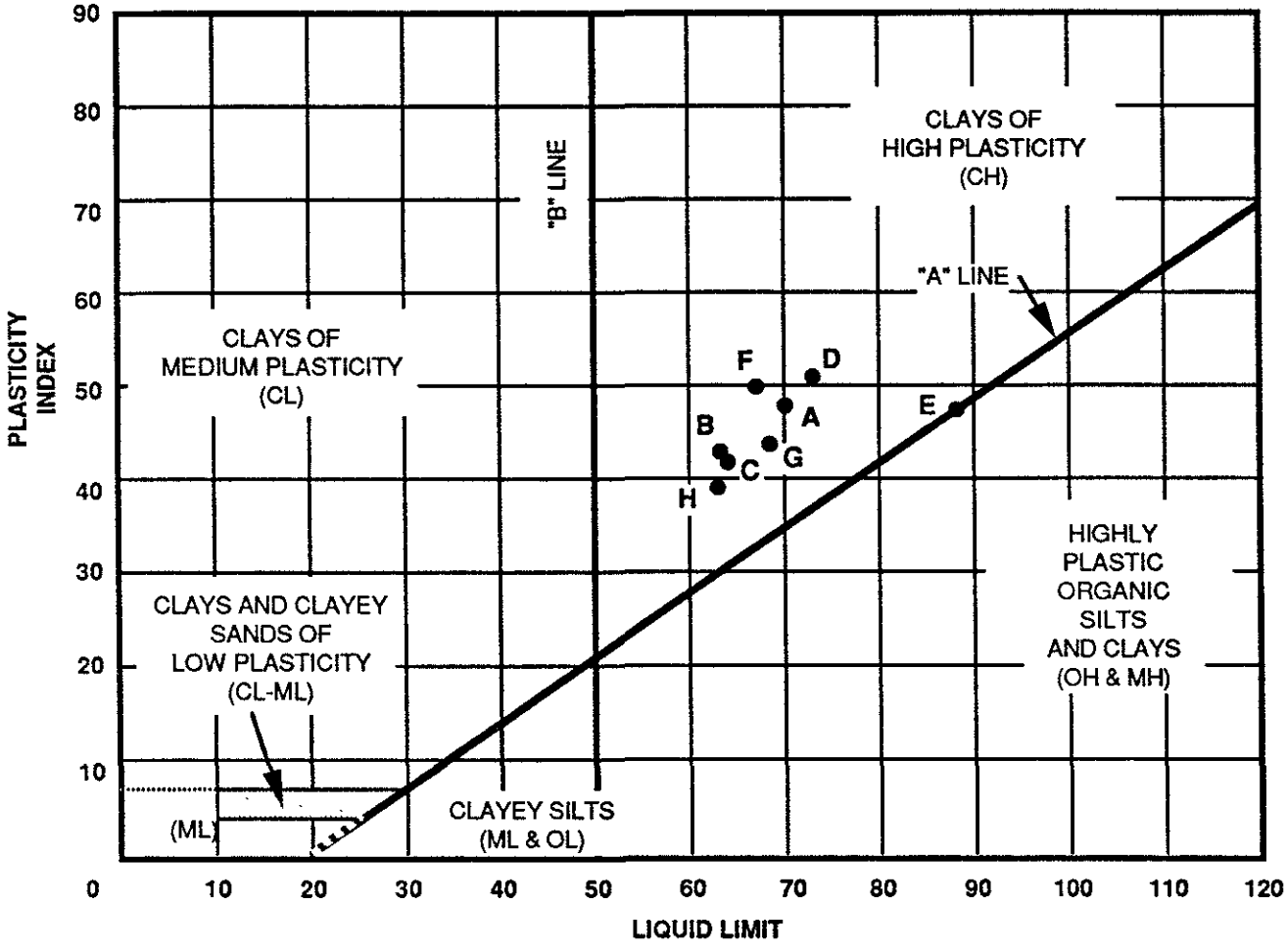
SUMMARY OF MATERIAL INDEX PROPERTIES

| Borehole | Depth (feet) | Unconfined Compression (tsf) | Water Content (%) | Dry Density (pcf) | Liquid Limit | Plas-ticity Index | <#200 Sieve (%) | >#4 Sieve (%) |
|---|---|---|---|---|---|---|---|---|
| B-3 | 45.0 | | 16 | 119 | | | | |
| B-3 | 55.0 | | 16 | 119 | | | | |
| B-3 | 70.0 | | 19 | 113 | | | | |
| B-3 | 85.0 | | 16 | 119 | | | | |
| B-3 | 98.0 | | 31 | 93 | | | | |
| B-30 | 1.5 | | 19 | | | | | |
| B-35 | 2.0 | | 41 | 83 | 88 | 50 | | |
| B-35 | 10.0 | | 24 | 91 | | | | |
| B-35 | 20.0 | | 13 | 102 | | | | |
| B-36 | 6.0 | 24 | 22 | 95 | | | | |
| B-36 | 9.0 | | 13 | 116 | | | | |
| B-36 | 15.0 | | 12 | 103 | | | | |
| B-37 | 3.0 | | 11 | 95 | | | | |
| B-37 | 19.0 | | 10 | 117 | | | | |
| B-38 | 2.0 | | 30 | 61 | | | | |
| B-38 | 30.0 | | 37 | 78 | | | | |
| B-38 | 40.0 | 3.1 | 42 | 78 | | | | |
| B-39 | 2.0 | | 25 | 65 | | | | |
| B-39 | 30.0 | | 34 | 87 | | | | |
| B-39 | 40.0 | | 22 | 97 | | | | |
| B-4 | 2.5 | | 18 | 84 | | | | |
| B-4 | 6.5 | | 14 | 103 | | | | |
| B-4 | 11.0 | | 24 | 98 | | | | |
| B-4 | 16.0 | | 30 | 93 | | | | |
| B-4 | 21.0 | | 32 | 91 | | | | |
| B-4 | 28.0 | | 20 | 110 | 56 | 20 | | |
| B-4 | 36.5 | | 21 | 108 | | | | |
| B-4 | 44.0 | | 19 | 112 | | | | |
| B-4 | 52.0 | | 17 | 118 | | | | |
| B-4 | 60.0 | | 18 | 115 | | | | |
| B-40 | 10.0 | | 21 | 107 | | | | |
| B-40 | 25.0 | | 13 | 116 | | | | |
| B-40 | 30.0 | | 14 | 116 | | | | |
| B-41 | 10.0 | | 17 | 107 | | | | |
| B-41 | 15.0 | | 15 | 116 | | | | |
| B-41 | 19.5 | | 7 | | | | | |
| B-42 | 1.5 | | | | 58 | 39 | | |
| B-44 | 15.5 | | 9 | | | | | |
| B-44 | 25.0 | | 13 | 122 | | | | |
| B-45 | 10.5 | | 25 | 98 | | | | |
| B-45 | 20.5 | | 18 | 112 | | | | |
| B-48 | 1.0 | | | | 68 | 48 | | |
| B-48 | 15.5 | | 21 | 107 | | | | |

TABLE B-2 (continued)

SUMMARY OF MATERIAL INDEX PROPERTIES

| Borehole | Depth (feet) | Unconfined Compression (tsf) | Water Content (%) | Dry Density (pcf) | Liquid Limit | Plas-ticity Index | <#200 Sieve (%) | >#4 Sieve (%) |
|---|---|---|---|---|---|---|---|---|
| I-12 | 130.0 | | 22 | 107 | 58 | 41 | 61 | 83 |
| I-13 | 140.0 | | 26 | 105 | 42 | 26 | 67 | 90 |
| I-14 | 200.0 | | 18 | 110 | 38 | 23 | 60 | 97 |
| I-15 | 200.0 | | 13 | 119 | | | 17 | 38 |
| I-20 | 70.0 | | 21 | 110 | | | | |
| I-21 | 120.0 | | 25 | 104 | | | | |
| I-21 | 126.5 | | 20 | 107 | | | | |
| I-23 | 105.0 | | 23 | 109 | | | | |
| I-23 | 107.5 | | 20 | 110 | | | | |
| I-23 | 110.0 | | 20 | 116 | | | | |
| I-3A | 198.0 | | 16 | 120 | | | | |
| I-3A | 200.0 | | 15 | 119 | | | | |
| I-3A | 203.0 | | 22 | 105 | 69 | 52 | | |
| I-3A | 203.0 | | | | 75 | 60 | | |
| I-3A | 205.0 | | 18 | 112 | 74 | 58 | | |
| I-3A | 207.0 | | 65 | 55 | | | | |
| P-1 | 1.0 | 3700 | 34 | 87 | | | | |
| P-1 | 5.0 | | 38 | 80 | | | | |
| P-1 | 10.0 | | 41 | 78 | | | | |
| P-1 | 15.0 | 6210 | 25 | 99 | | | | |
| P-1 | 20.0 | 5170 | 24 | 102 | | | | |
| P-1 | 25.0 | 4690 | 24 | 101 | | | | |
| P-1 | 40.0 | 6340 | 18 | 113 | | | | |
| P-1 | 43.0 | 4820 | 18 | 110 | | | | |
| P-3 | 1.0 | 2490 | 31 | 119 | | | | |
| P-3 | 5.0 | 2200 | 28 | 94 | | | | |
| P-3 | 10.0 | | 22 | | | | | |
| P-3 | 20.0 | | 29 | | | | | |
| P-3 | 23.5 | 6340 | 18 | 112 | | | | |
| P-3 | 30.0 | 10590 | 17 | 115 | | | | |
| P-3 | 35.0 | | 17 | 115 | | | | |
| P-3 | 40.0 | 9120 | 13 | 122 | | | | |
| P-3 | 43.0 | 4000 | 18 | 113 | | | | |
| P-4 | 1.0 | 1320 | 27 | 90 | | | | |
| P-4 | 5.0 | 3120 | 27 | 97 | | | | |
| P-4 | 10.0 | | 14 | | | | | |
| P-4 | 15.0 | 1990 | 36 | 86 | 31 | 3 | | |
| P-4 | 20.0 | 4630 | 15 | 117 | | | | |
| P-4 | 25.0 | 4690 | 20 | 106 | | | | |
| P-4 | 30.0 | 5860 | 23 | 103 | | | | |
| P-4 | 35.0 | 13250 | 18 | 114 | | | | |
| P-4 | 40.0 | 14200 | 17 | 114 | | | | |
| P-4 | 43.0 | 3840 | 14 | 117 | | | | |




| SAMPLE IDENTIFICATION | | | | ATTERBERG LIMITS | | |
|---|---|---|---|---|---|---|
| LETTER DESIG'N | BORING NO. | SAMPLE NO. | DEPTH, FT. | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX |
| A | I-21 | PB-1-1 | 120-123 | 70 | 0 | 48 |
| B | I-21 | PB-1-1 | 120-123 | 63 | 0 | 43 |
| C | I-21 | PB-1-4 | 120-123 | 64 | 0 | 42 |
| D | I-21 | PB-1-4 | 120-123 | 73 | 0 | 51 |
| E | I-21 | PB-1-3 | 120-123 | 88 | 0 | 47 |
| F | I-23 | PB-4-1 | 107.5-110 | 67 | 0 | 50 |
| G | I-23 | PB-4-3 | 107.5-110 | 68 | 0 | 44 |
| H | I-23 | PB-5-1 | 110-112.5 | 63 | 0 | 39 |

| | | |
|---|---|---|
| Project: 91C0682R<br>**Woodward-Clyde Consultants** | PLASTICITY CLASSIFICATION<br>Penitencia Water Treatment Plant Site Study<br>San Jose, California | Figure B-1 |

PROJECT NO. 91C-0692R

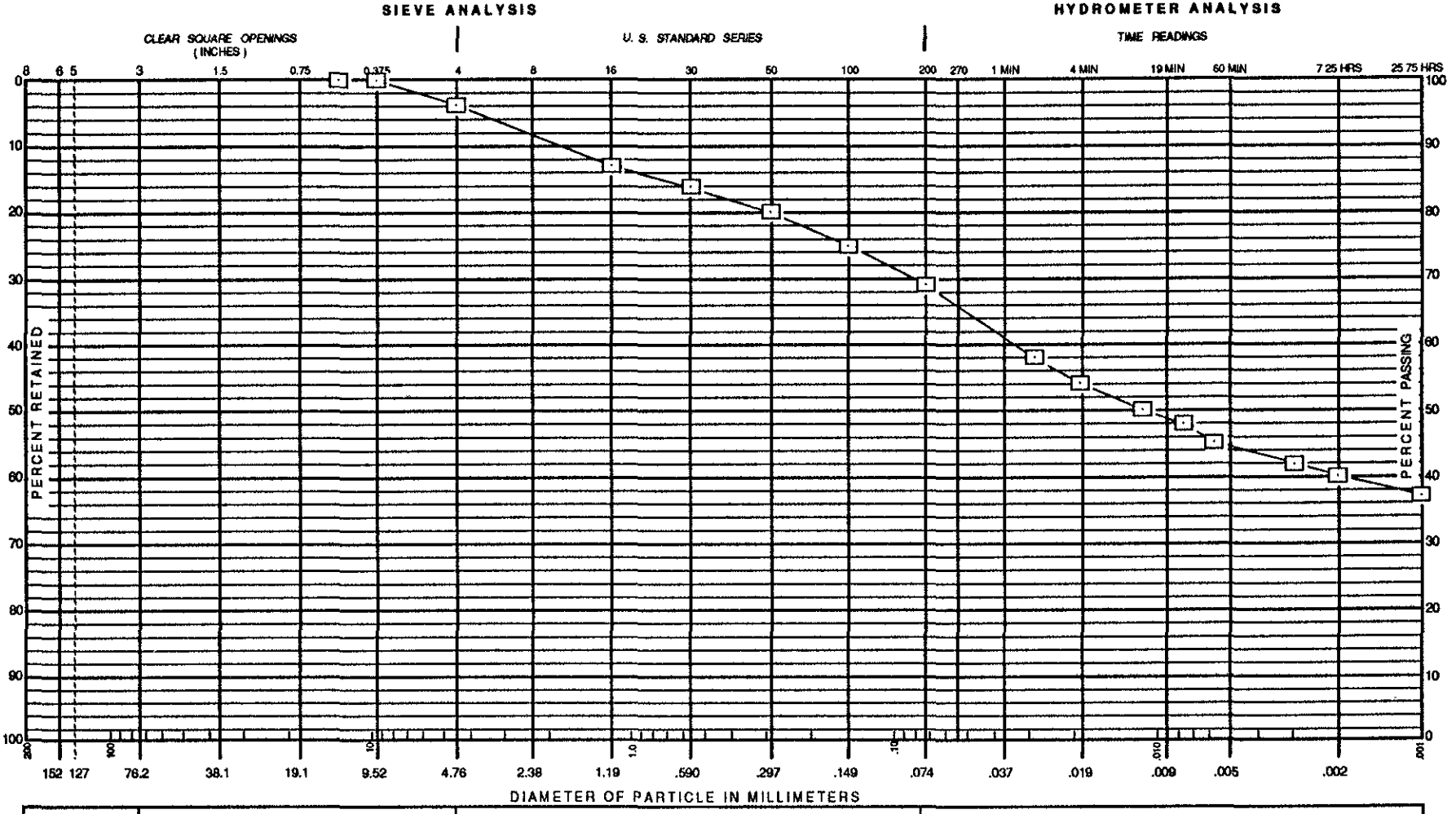
Woodward-Clyde Consultants

| BORING NO. | SAMPLE NO. | DEPTH, FT. | SYMBOL | LIQUID LIMIT | PLASTICITY INDEX | UNIFIED CLASSIFICATION |
|---|---|---|---|---|---|---|
| I-23 | PB-4-4 | 107.5-110 | □ | | | (CH) |

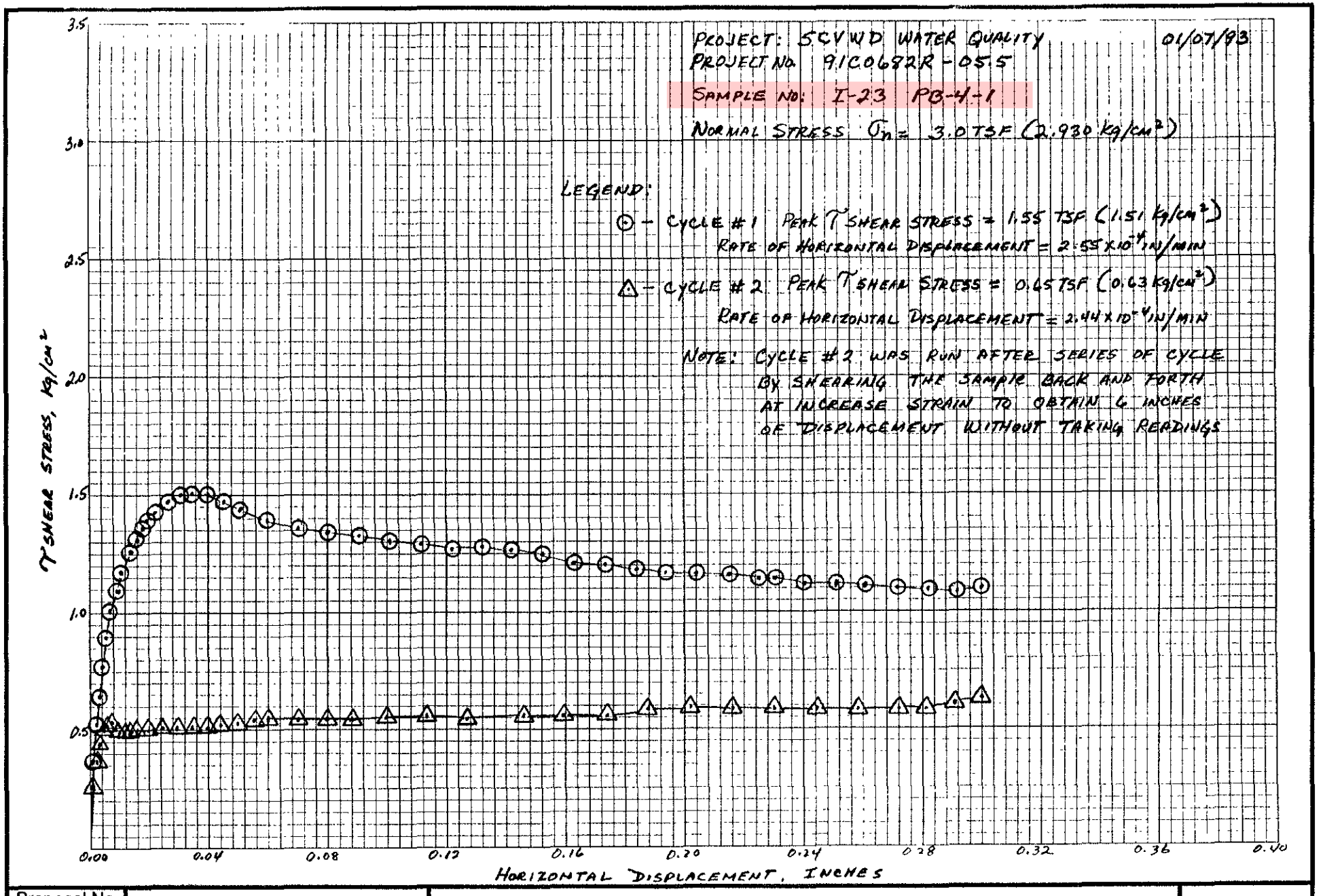
## GRAIN-SIZE DISTRIBUTION CURVES

Penitencia Water Treatment Plant Site Study
San Jose, California

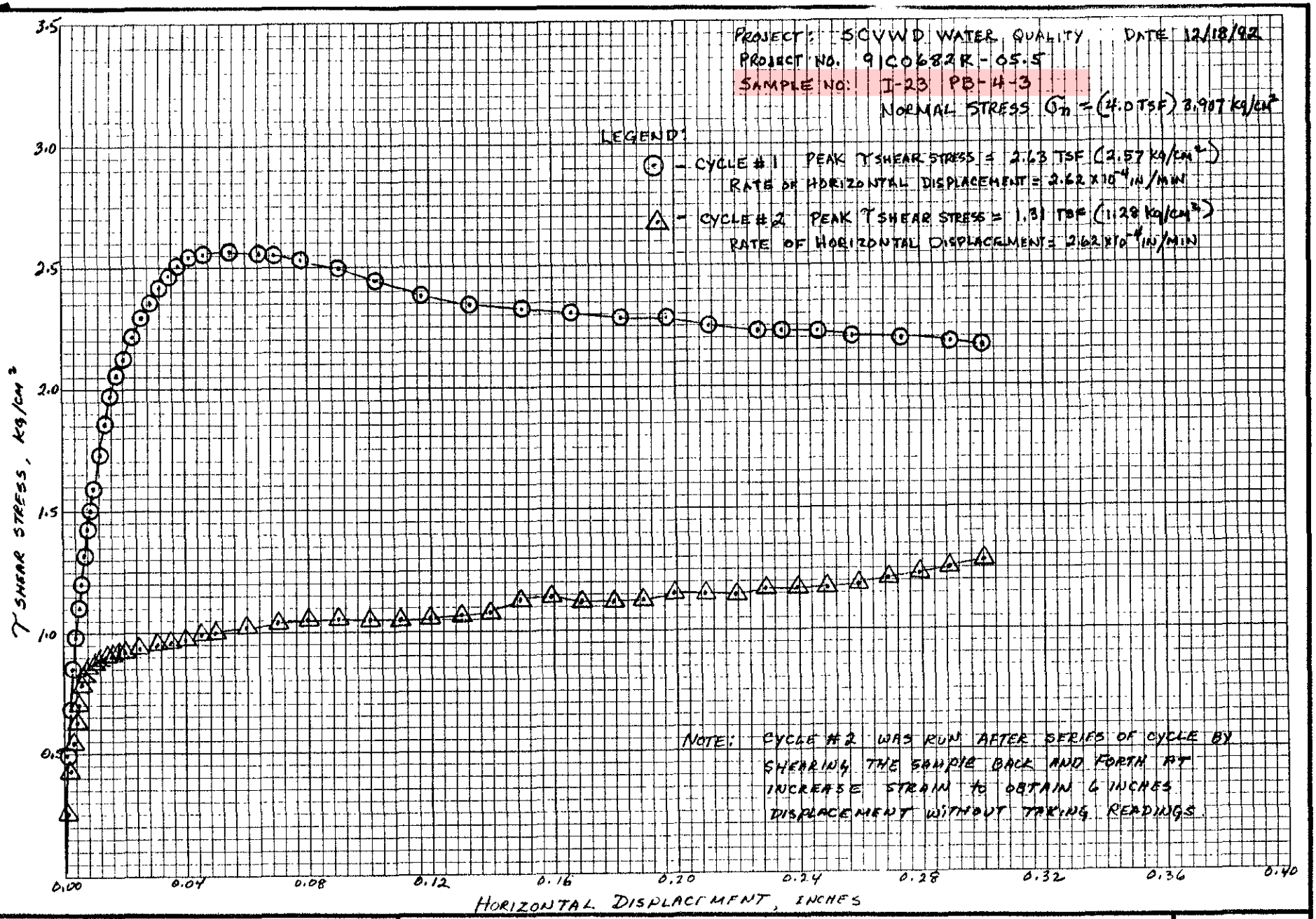
FIGURE B-3



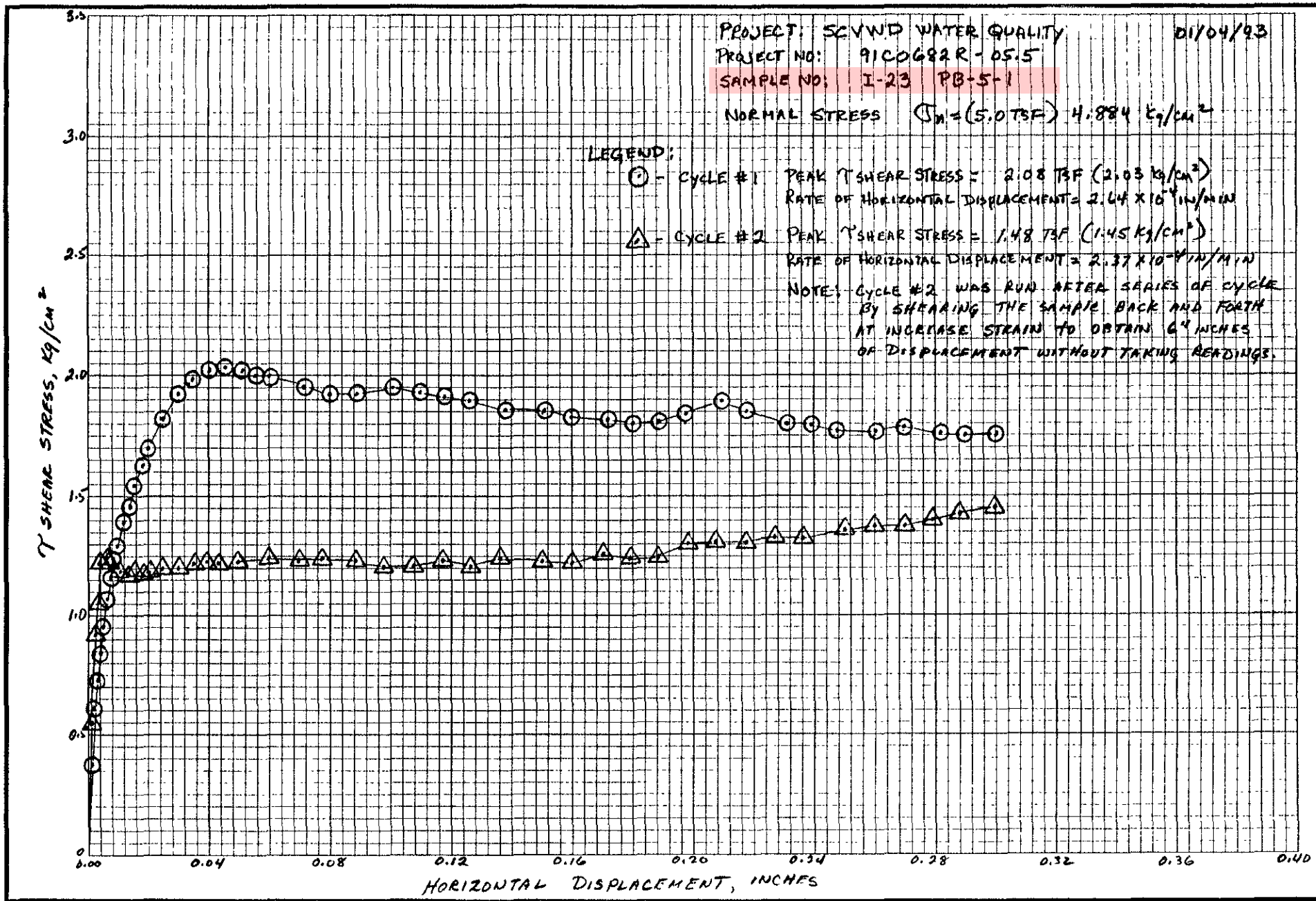

| COBBLES | GRAVEL | | SAND | | | CLAY (Plastic) to SILT (Non-Plastic) |
|---|---|---|---|---|---|---|
| | COARSE | FINE | COARSE | MEDIUM | FINE | |




| | | | |
|---|---|---|---|
| Proposal No. 91C-0682R<br>04/20/93 | PENITENCIA WATER TREATMENT PLANT SITE STUDY | **DIRECT SHEAR TEST RESULTS** | FIGURE B-4 |
| **Woodward-Clyde Consultants** | | | |




| | | | |
|---|---|---|---|
| Proposal No. 91C-0682R<br>04/20/93 | PENITENCIA WATER TREATMENT PLANT SITE STUDY | **DIRECT SHEAR TEST RESULTS** | FIGURE B-5 |
| **Woodward-Clyde Consultants** | | | |




| | | | |
|---|---|---|---|
| Proposal No. 91C-0682R<br>04/20/93 | PENITENCIA WATER TREATMENT PLANT SITE STUDY | **DIRECT SHEAR TEST RESULTS** | FIGURE B-6 |
| **Woodward-Clyde Consultants** | | | |

DRAFT

# APPENDIX E

## SITE-SPECIFIC SEISMIC-HAZARD ANALYSIS

# SITE-SPECIFIC SEISMIC-HAZARD ANALYSIS

## PURPOSE AND SCOPE

In this appendix, we document the site-specific seismic-hazard analysis (SHA) that we performed for Valley Water's Penitencia Water Treatment Plant as part of the Residuals Management Project in San Jose, California. In this appendix, we describe the following.

- Probabilistic seismic hazard analysis (PSHA) and deterministic seismic-hazard analysis (DSHA).
- Horizontal, 5-percent damped, acceleration response spectra at the risk-targeted maximum considered earthquake ($MCE_R$) design earthquake (DE) levels.
- Development of damping scaling factors and resulting horizontal, 0.5-percent damped, acceleration response spectra at the risk-targeted maximum considered earthquake ($MCE_R$) design earthquake (DE) levels.
- Development of vertical-to-horizontal (V:H) ratios and resulting vertical, 5-percent damped, acceleration response spectra at the risk-targeted maximum considered earthquake ($S_{aMv}$) design earthquake ($S_{av}$) levels.

Depths discussed herein are measured below the existing ground surface (bgs) unless noted otherwise. Note that we provide significant figures for computing purposes, and the entries provided in the tables below do not necessarily reflect the precision of those values.

## APPLICABLE DESIGN STANDARDS

We performed our analysis in accordance with the 2022 California Building Code (CBC 2022), which incorporates, by reference, the seismic-design criteria described in the 2016 version of the American Society of Civil Engineers document titled "Minimum Design Loads and Associated Criteria for Buildings and Other Structures," (ASCE 7-16).

Based on our discussions with the project design team, we understand the latest 2022 version of the ASCE 7 standard (ASCE 7-22) will also be considered in project planning and design. Therefore, we performed additional analyses in accordance with the seismic-design criteria described in ASCE 7-22. The ASCE 7-22 standard incorporates significant changes pertaining to site classification and SHA relative to the previous ASCE 7-16 standard, including the following.

- New site class definitions and exclusive use of shear-wave velocity for site classification
- Introduction of general multi-period response spectra
- Removal of requirements to perform site-specific SHA for Site Class D and E sites
- Updates to the definition of deterministic ground motions and associated lower limits
- New calculation procedure for calculation of site-specific spectral response acceleration parameters at a period of 1 second ($S_{M1}$ and $S_{D1}$)
- Updates to vertical response spectra calculation

In the following sections, we document our site-specific SHA in the context of both ASCE 7-16 and ASCE 7-22 design standards.

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## GROUND-MOTION MODELS AND SITE PARAMETERS

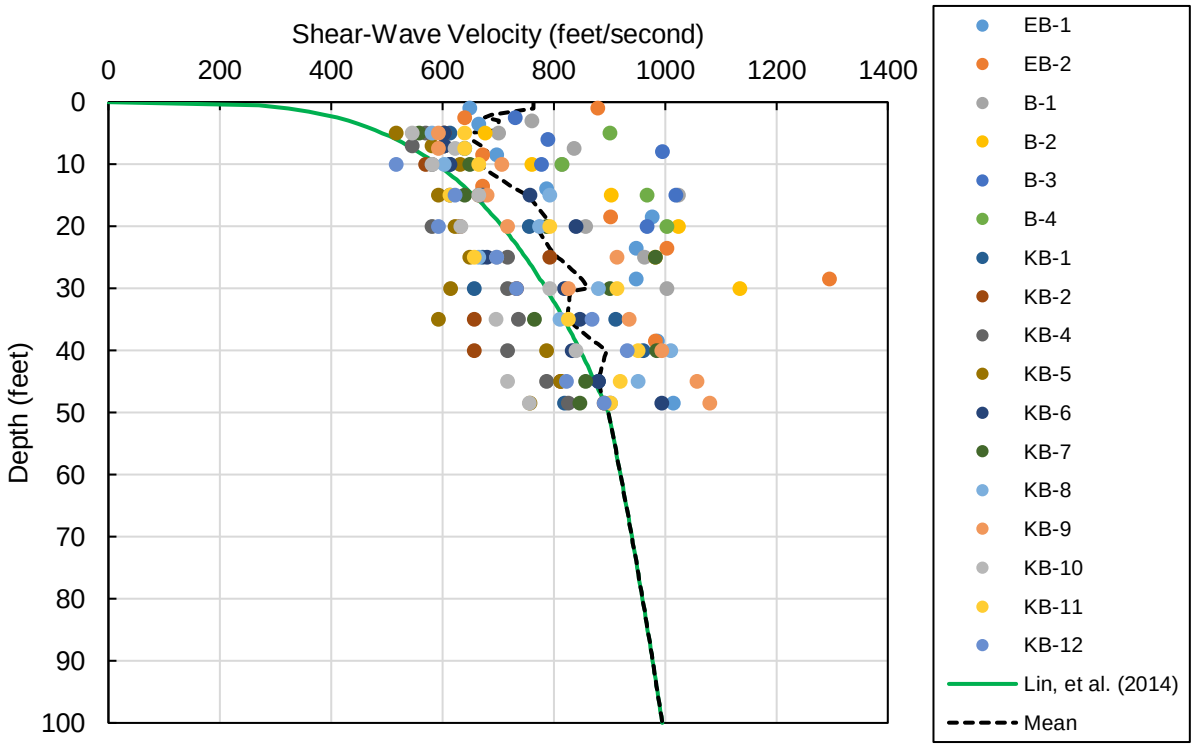
We used four semi-empirical ground-motion models (GMMs) from the Next Generation Attenuation West 2 (NGA West 2) project (Ancheta et al., 2014) in the performance of the SHA for this project. These models include Abrahamson et al. (2014) [ASK], Boore et al. (2014) [BSSA], Campbell and Bozorgnia (2014) [CB], and Chiou and Youngs (2014) [CY]. We performed our analysis using all four GMMs for a spectral damping of 5 percent of critical damping. We used a logic-tree approach and assigned equal weight (0.25) to the four GMMs in our analysis.

The ground-motion models incorporate "site parameters" to model how subsurface soil will amplify or attenuate ground motions as they propagate from underlying bedrock. These site parameters include the following.

- Time-averaged shear-wave velocity ($V_S$) over the top 100 feet or 30 meters ($V_{S30}$)
- Depth at which $V_S$ reaches 3,280 feet/sec or 1.0 kilometer/sec ($z_{1.0}$)
- Depth at which $V_S$ reaches 8,200 feet/sec or 2.5 kilometer/sec ($z_{2.5}$)

A profile of shear-wave velocity is needed to compute $V_{S30}$. The shear-wave velocity was not measured during previous explorations of the site; therefore, we relied on a variety of standard penetration test (SPT) blow count correlations (Akin, et al. 2011) to estimate $V_S$ to a depth of 50 feet below the existing ground surface, the maximum depth explored in previous explorations. Between depths of 50 and 100 feet, we assumed that the material is similar, and we extrapolated the mean $V_S$ based on the assumption that $V_S$ increases as a function of mean effective stress (Lin, et al. 2014). We then developed a representative "best estimate" $V_S$ profile based on the mean of the estimated $V_S$ data, with a resulting $V_{S30}$ value of 861 feet/sec (262 meters/sec). We present the estimated $V_S$ data and best estimate $V_S$ profile in Exhibit E-1.

**EXHIBIT E-1: Estimated Shear-Wave Velocity Data from Previous Explorations**



Relative to the various geophysical testing methods used to measure shear-wave velocity directly, $V_S$ correlations based on blow counts and mean effective stress exhibit significant scatter about the model estimates. As a result, the scatter in the $V_S$ estimates in Exhibit E-1 are influenced by both model accuracy, as well as inherent variability at the site. To account for this uncertainty and variability in the $V_S$ data, we estimated upper- and lower-bound $V_{S30}$ values by multiplying and dividing the representative $V_{S30}$ value by a factor of 1.3, respectively, in general accordance with Section 20.3 of ASCE 7-22. We considered the resulting upper- and lower-bound $V_{S30}$ values of 1,119 feet/sec (341 meters/sec) and 662 feet/sec (202 meters/sec), respectively, in our analysis in addition to the best estimate.

To estimate the $z_{1.0}$ and $z_{2.5}$ parameters, we used USGS Bay Area Velocity Model Version 8.3.0 Basin Depth models as implemented in the USGS Site Data Application Software (OpenSHA). We applied $z_{1.0}$ and $z_{2.5}$ values of 1,094 and 6,535 feet (333 and 1,662 meters) in our analysis, respectively.

## SITE CLASSIFICATION

Based on the subsurface conditions encountered during the investigation by Kleinfelder and as presented in their draft Geotechnical Investigation Report dated November 2, 2023, we classified the site as Site Class D in accordance with Chapter 20 of ASCE 7-16. This classification is based on the range of $V_{S30}$ values that we estimated for the site, as previously discussed.

The best estimate, upper-, and lower-bound $V_{S30}$ estimates fall within Site Classes DE, D, and CD, respectively, in accordance with Chapter 20 of ASCE 7-22. As discussed in Section 20.3 of ASCE 7-22, where the average velocities result in different site classes, the most critical of the site classes for ground motion analysis at each period shall be determined by the geotechnical engineer.

## SEISMIC-SOURCE MODEL

We utilized the Third California Earthquake Rupture Forecast model or UCERF3 (Field et al. 2014 and 2015) as implemented in the OpenSHA software. This is the most up-to-date rupture forecast model for the state of California and, as such, is required by ASCE 7-16 and 7-22. Background seismicity, modeled as gridded point sources, is also included in the model. The implementation of the UCERF3 model in seismic-hazard codes considers many sources of epistemic uncertainty regarding alternate rupture scenarios, maximum magnitudes for individual faults, and alternate magnitude-recurrence relations. This uncertainty affects the mean hazard that is provided by hazard codes implementing UCERF3 and is used in typical applications, including this analysis.

## DIRECTIVITY EFFECTS

Given the site's proximity to the Hayward and Calaveras faults, the site is considered to be a "near-fault" site in accordance with Section 11.4.1 of ASCE 7-16 and 7-22. Directivity effects can increase long-period ground motions at near-fault sites (Somerville et al., 1997; Abrahamson 2000). We used the period-dependent models by Chiu and Spudich (2013), Bayless and Somerville (2013), and Bayless et al. (2020) to consider directivity effects, as implemented in the Natural Hazard & Resiliency Research Center (NHR3) directivity-based PSHA interactive tool (Mazzoni et al., 2023), to estimate the period dependent directivity factors for a return period of 2,475 years. We calculated a weighted mean of the directivity factors obtained from these models, with weights of 0.5, 0.25, and 0.25, respectively, as recommended by NHR3.

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## PROBABILISTIC SEISMIC-HAZARD ANALYSIS

### Methodology

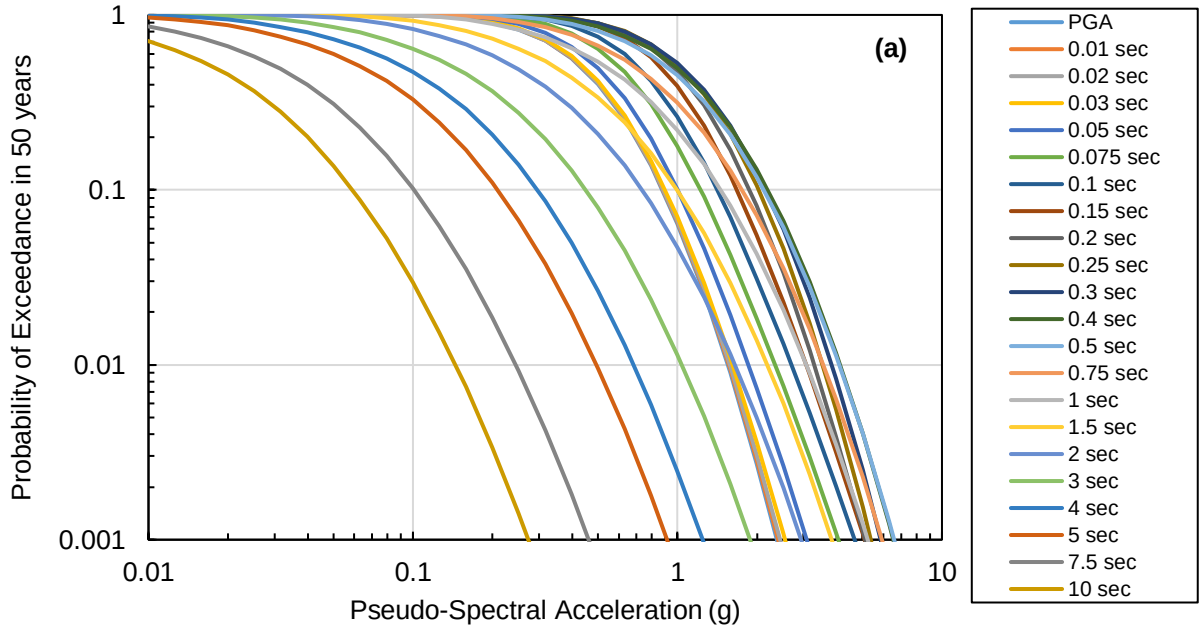
We performed a PSHA for the project site using OpenSHA Version 1.5.2 to develop a set of hazard curves and a resulting uniform hazard response spectrum (UHS) for the mean, upper-bound, and lower-bound $V_{S30}$ values for a return period of 2,475 years. We calculated the seismic hazard using the standard methodology for hazard analysis (McGuire, 2004). The seismic-hazard calculations can be represented by the following equation, which is an application of the total-probability theorem.

$$H(a) = \sum_{i}^{n} v_i \iint P[A > a|m,r]\, f_{Mi}(\mathrm{m})\, f_{Ri|Mi}(\mathrm{r},\mathrm{m}) dr dm$$

In this equation, the hazard **H*(a)*** is the annual frequency of earthquakes that produce a ground motion amplitude ***A*** higher than ***a***. Amplitude ***A*** may represent peak ground acceleration, velocity, or it may represent pseudo-spectral acceleration (PSa) at a given frequency. The summation in the equation shown extends over all sources (i.e., over all faults and areas). In the above equation, $v_i$ is the annual rate of earthquakes (with magnitude higher than some threshold $M_i$) in source ***i***, and $f_{Mi}(m)$ and $f_{Ri|Mi}(r,m)$ are the probability density functions on magnitude and distance, respectively. ***P[A > a|m, r]*** is the probability that an earthquake of magnitude ***m*** at distance ***r*** produces a ground-motion amplitude ***A*** at the site that is greater than ***a***. Seismic sources may be either faults or background sources; the specification of source geometries and the calculation of $f_{Ri|Mi}$, are performed differently for these two types of sources.

We present the median component (RotD50) hazard curves for the equally weighted mean of all GMMs for the mean, upper-bound, and lower-bound $V_{S30}$ values in Exhibit E-2.

**EXHIBIT E-2: Mean RotD50 Hazard Curves for $V_{S30}$ of (a) 262, (b) 341, and (c) 202 m/s**

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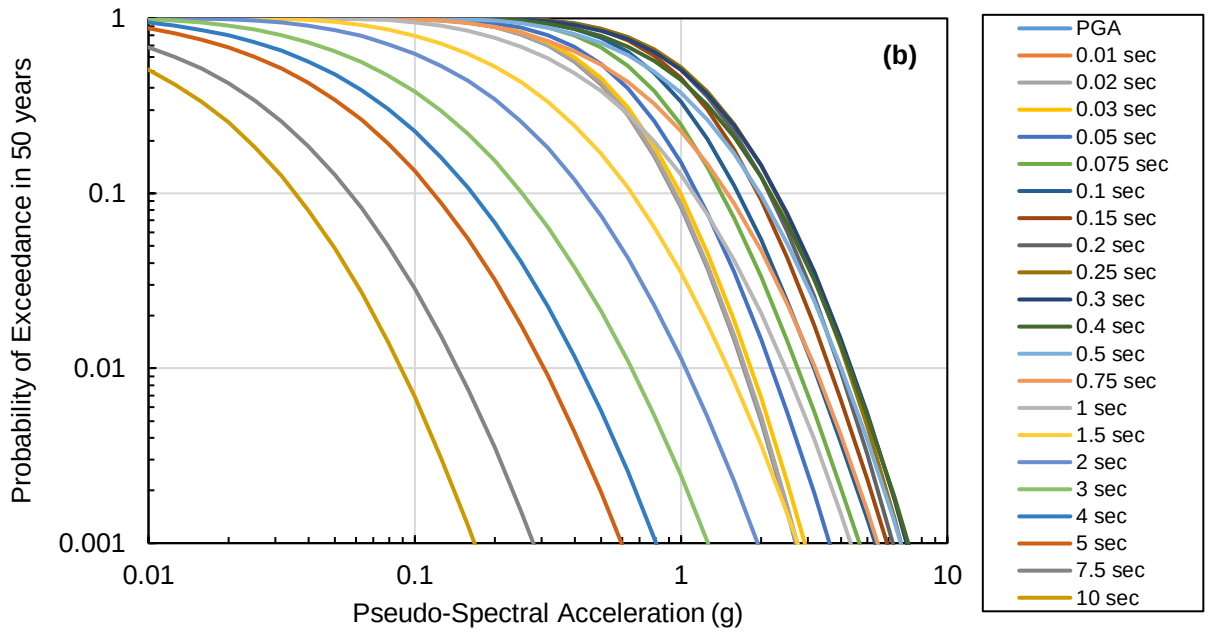
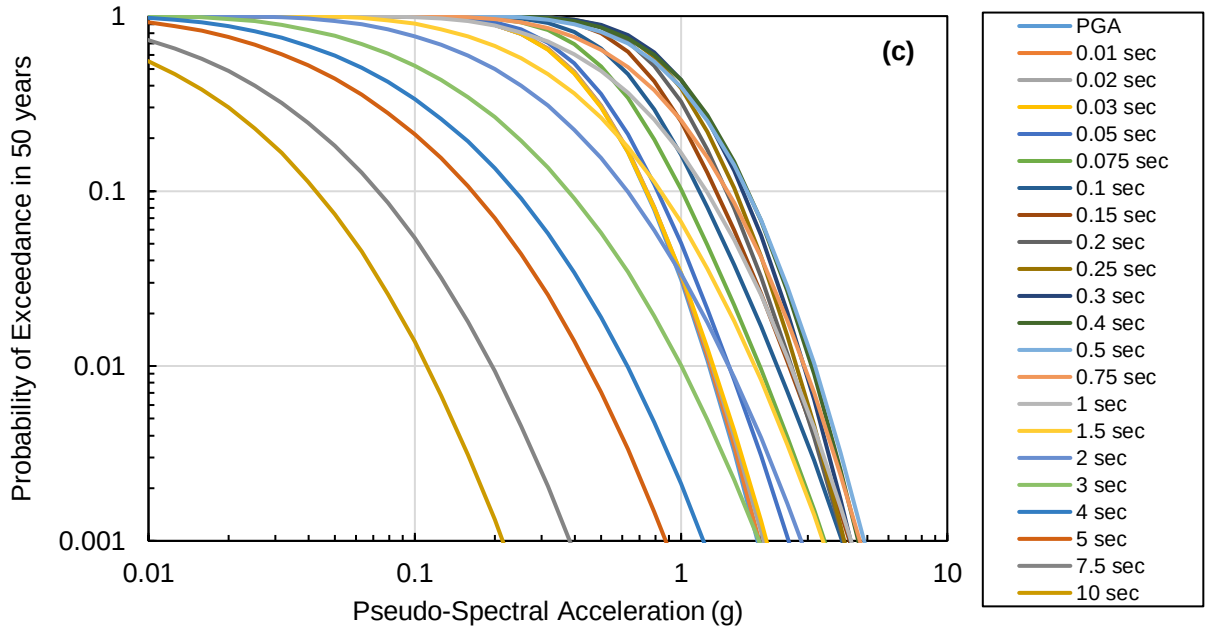
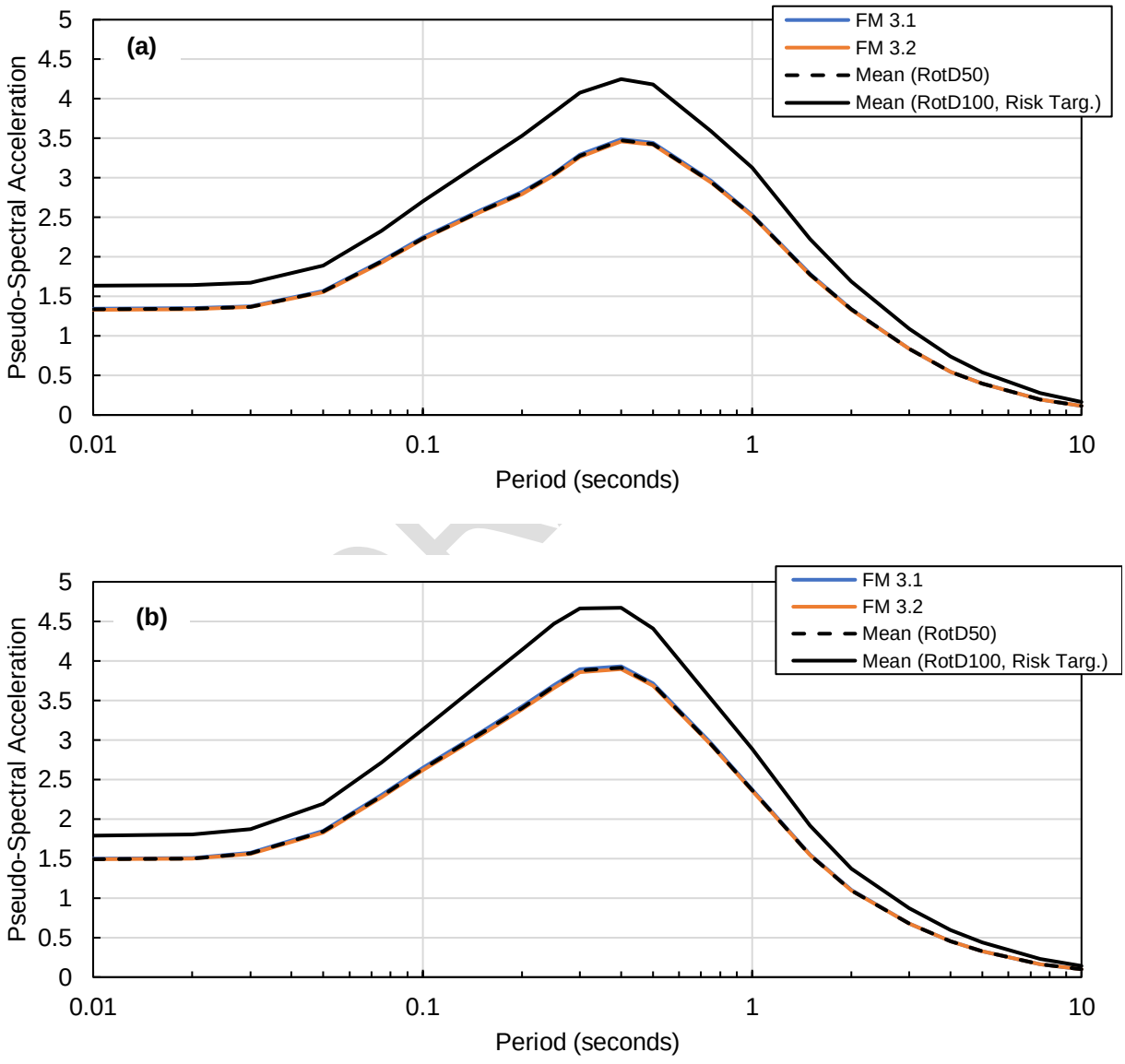
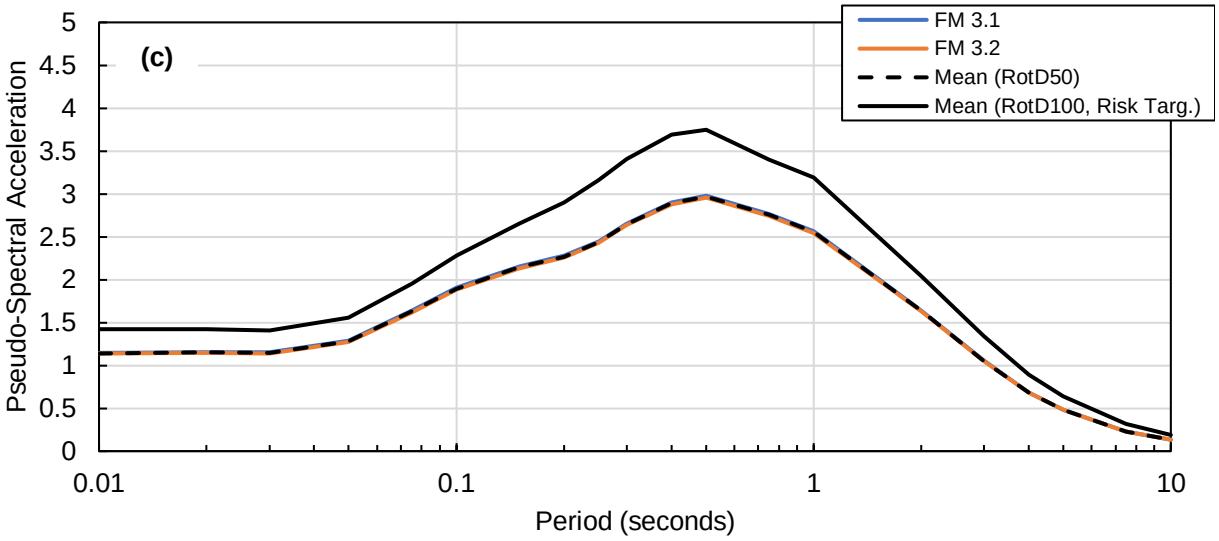

(b)
Probability of Exceedance in 50 years
1
0.1
0.01
0.001
0.01
0.1
1
10
Pseudo-Spectral Acceleration (g)
PGA
0.01 sec
0.02 sec
0.03 sec
0.05 sec
0.075 sec
0.1 sec
0.15 sec
0.2 sec
0.25 sec
0.3 sec
0.4 sec
0.5 sec
0.75 sec
1 sec
1.5 sec
2 sec
3 sec
4 sec
5 sec
7.5 sec
10 sec


(c)
Probability of Exceedance in 50 years
1
0.1
0.01
0.001
0.01
0.1
1
10
Pseudo-Spectral Acceleration (g)
PGA
0.01 sec
0.02 sec
0.03 sec
0.05 sec
0.075 sec
0.1 sec
0.15 sec
0.2 sec
0.25 sec
0.3 sec
0.4 sec
0.5 sec
0.75 sec
1 sec
1.5 sec
2 sec
3 sec
4 sec
5 sec
7.5 sec
10 sec

We present the RotD50 2,475-year UHS for both branches of UCERF3 (FM3.1 and FM3.2) for the mean, upper-bound, and lower-bound $V_{S30}$ values in Exhibit E-3, respectively. To convert the mean RotD50 response spectra to maximum-rotated (RotD100), directivity-adjusted response spectra, we applied the maximum rotation factors discussed in Shahi and Baker (2014) and the directivity-adjustment factors from the NHR3 tool. Finally, we developed risk coefficients as defined in Section 21.2.1 of ASCE 7-16 (Method 2) and ASCE 7-22 to develop the risk-targeted response spectrum. The maximum-rotated directivity-adjusted risk-targeted uniform hazard response spectra for a 2,475-year return period are also shown in Exhibit E-3.

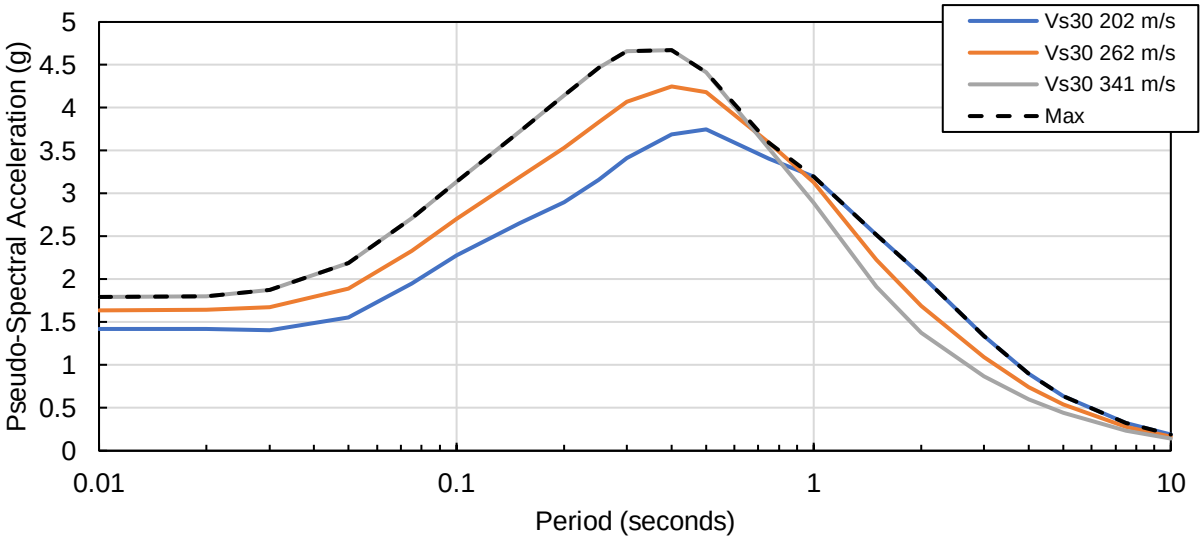
**EXHIBIT E-3: 2,475-year UHS for $V_{S30}$ of (a) 262, (b) 341, and (c) 202 m/s**






Considering the uncertainty in the site $V_{S30}$, we considered the maximum PSa of the resulting PSHA response spectra at each spectral period, as shown in Exhibit E-4.

**EXHIBIT E-4: Maximum Uniform Hazard Response Spectra**




## Seismic-Hazard Disaggregation

We performed a disaggregation of the seismic hazard associated with the 2,475-year return period and a $V_{S30}$ of 861 feet/sec (262 meters/sec) at the peak ground acceleration (PGA), and for spectral periods of 0.5, 1, and 2 seconds. We present the disaggregation results in Attachment A and summarize the dominant scenarios and their relative contributions to the hazard at each period in Table E-1.

**TABLE E-1: Summary of Disaggregation Results for a 2,475-Year Return Period***

| FAULT SOURCE | $R_{RUP}$ | | $M_W$ | CONTRIBUTION (%) | | | |
|---|---|---|---|---|---|---|---|
| | (km) | (mi) | | PGA | 0.5 sec | 1.0 sec | 2.0 sec |
| Hayward (South) (0) | 2.2 | 1.4 | 7.13 | 49.2 | 53.0 | 58.0 | 59.2 |
| Calaveras (Center) (9) | 4.7 | 2.9 | 7.21 | 25.9 | 28.0 | 28.4 | 29.1 |
| Hayward (South, extension) (6) | 5.0 | 3.1 | 6.08 | 4.8 | 3.4 | 1.1 | <1 |
| Hayward (South) (1) | 5.1 | 3.2 | 6.90 | 5.4 | 5.7 | 5.4 | 4.8 |
| San Andreas (Peninsula) (1) | 27.5 | 17.1 | 8.07 | <1 | 2.2 | <1 | 2.8 |

*Based on the USGS Earthquake Hazard Toolbox: NSHM Conterminous U.S. 2018

These results represent known fault sources contributing at least 1 percent to the seismic hazard at the site for the spectral periods considered and for the given return period. Background seismicity zones, such as gridded or areal sources, are not presented. The rupture distances ($R_{RUP}$) and mean moment magnitudes ($M_W$) listed are based on values assigned according to UCERF3, and the numbers in parentheses after the fault names correspond to fault subsections assigned by UCERF3. Magnitudes vary slightly between the two fault models (FM 3.1 and 3.2) utilized by UCERF3 and from one spectral period to another. Therefore, for each source, we present the maximum mean magnitude of the spectral periods where that source contributes significantly to the hazard. Note that source magnitudes and relative contributions to the hazard also vary slightly by $V_{S30}$; we considered these variations in our analysis, but we present the mean $V_{S30}$ case for conciseness.

## DETERMINISTIC SEISMIC-HAZARD ANALYSIS

### Methodology

The DSHA involves developing the 84$^{th}$-percentile (i.e., lognormal mean plus one standard deviation) maximum-rotated response spectrum for spectral damping of 5 percent of critical damping considering characteristic magnitudes of significant faults, without background seismicity, and utilizing the ground-motion models previously discussed. However, it is important to note that the definition of the characteristic magnitude is ambiguous when using the UCERF3 model due to its complexity. Based on the 2020 NEHRP Provisions and Section 21.2.2 of ASCE 7-22, in deterministic analyses, “scenario” earthquakes with significant contribution to hazard should be used in lieu of “characteristic” earthquakes when using UCERF3. We identified the scenario earthquakes by considering the results of the disaggregation of the PSHA results. Additionally, the 2020 NEHRP Provisions and Section 21.2.2 of ASCE 7-22 state that scenario earthquakes contributing less than 10 percent of the largest contributor at each spectral period shall be ignored, which validates omission of the San Andreas (Peninsula) (1) fault in the DSHA and for each value of $V_{S30}$ considered. Accordingly, with the exception of this fault, we considered the scenarios in Table E-1, as described below.

We considered the magnitudes shown in Table E-1 and associated distances ($R_{RUP}$, $R_{JB}$, $R_X$) to calculate the 84$^{th}$-percentile deterministic response spectra. We estimated additional ground-motion model parameters (e.g., rupture width, depth to top of rupture, etc.) for each fault/scenario based on fault-specific information published on the United States Geologic Survey (USGS) website. Our analyses indicate a single controlling event on the Hayward (South) (0) fault for all spectral periods. Similar to the development of the probabilistic response spectrum, we applied the maximum rotation factors discussed in Shahi and Baker (2014) and the directivity adjustment factors from the NHR3 tool to develop a maximum-rotated directivity-adjusted 84$^{th}$-percentile deterministic response spectrum.

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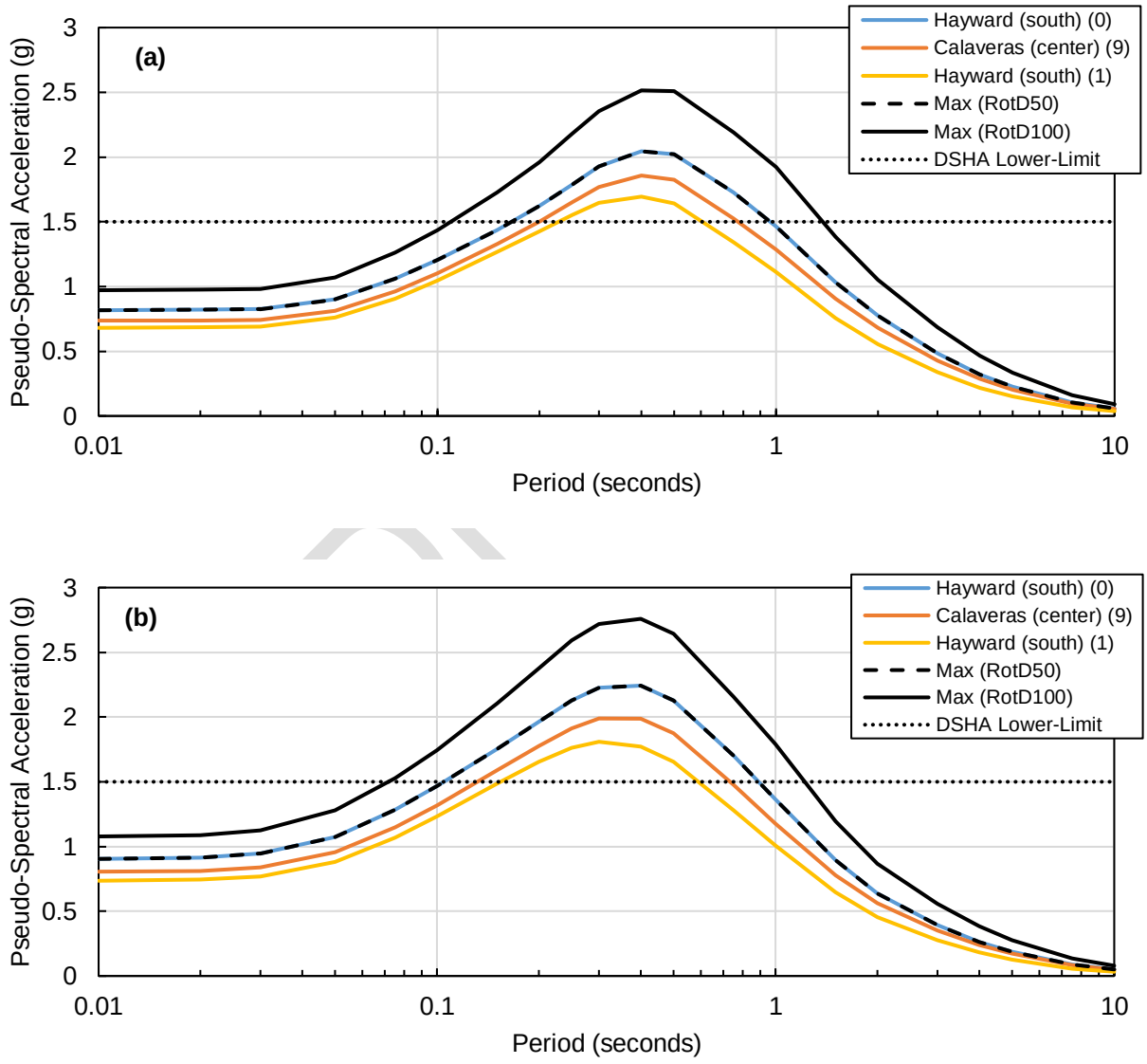
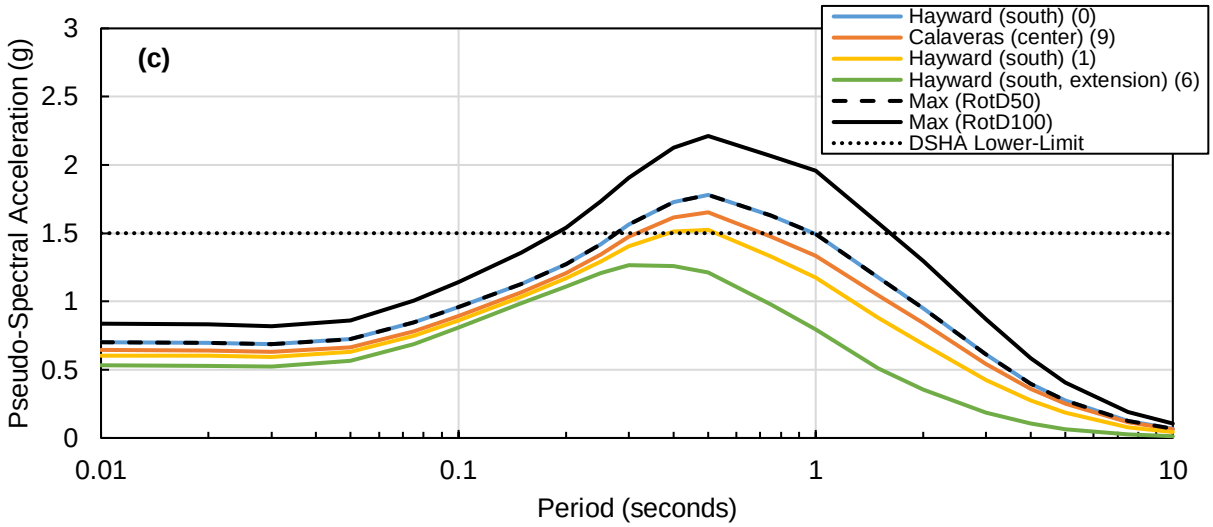
## ASCE 7-16 Deterministic Lower Limit

Section 21.2.2 and Supplement No. 1 of ASCE 7-16 stipulate that "the maximum PSa of the deterministic response spectrum shall not be less than the lower-limit defined as 1.5 Fa, where Fa is the short-period site coefficient corresponding to a short-period mapped acceleration ($S_S$) taken as 1.5." For Site Class D, the value of Fa is 1.0 and the lower limit is 1.5 g. Since the maximum PSa of the maximum-rotated directivity-adjusted 84$^{th}$-percentile deterministic response spectrum is greater than 1.5 g, no additional scaling is required in accordance with ASCE 7-16. We show the final DSHA response spectra developed in accordance with ASCE 7-16 in Exhibit E-5.

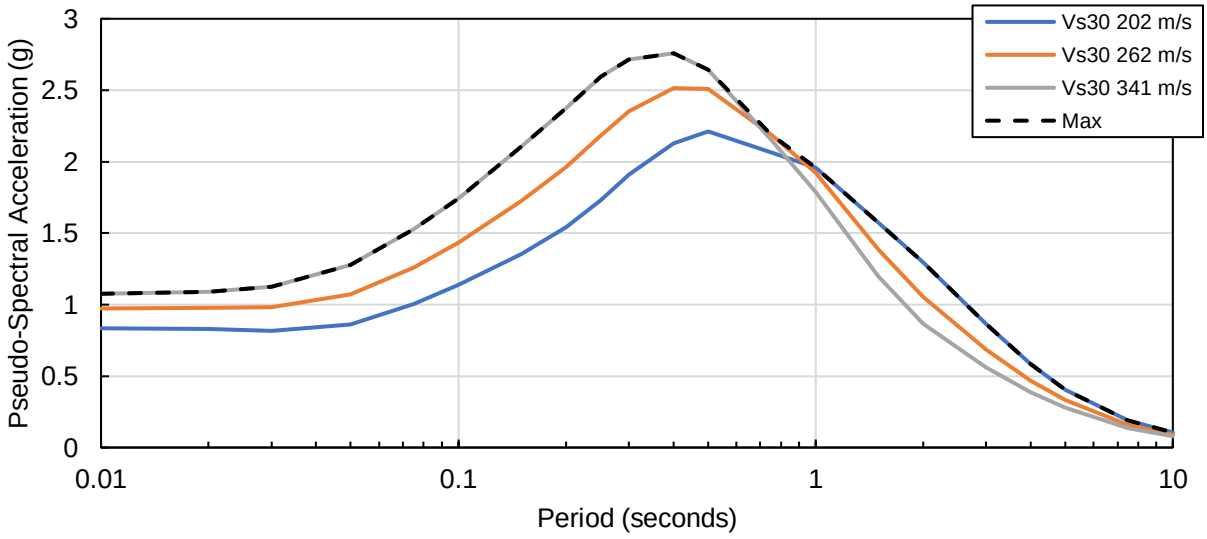
**EXHIBIT E-5: ASCE 7-16 Deterministic Response Spectra for $V_{S30}$ of (a) 262, (b) 341, and (c) 202 m/s**






Considering the uncertainty in the site $V_{S30}$, we considered the maximum PSa of the resulting DSHA response spectra at each spectral period, as shown in Exhibit E-6.

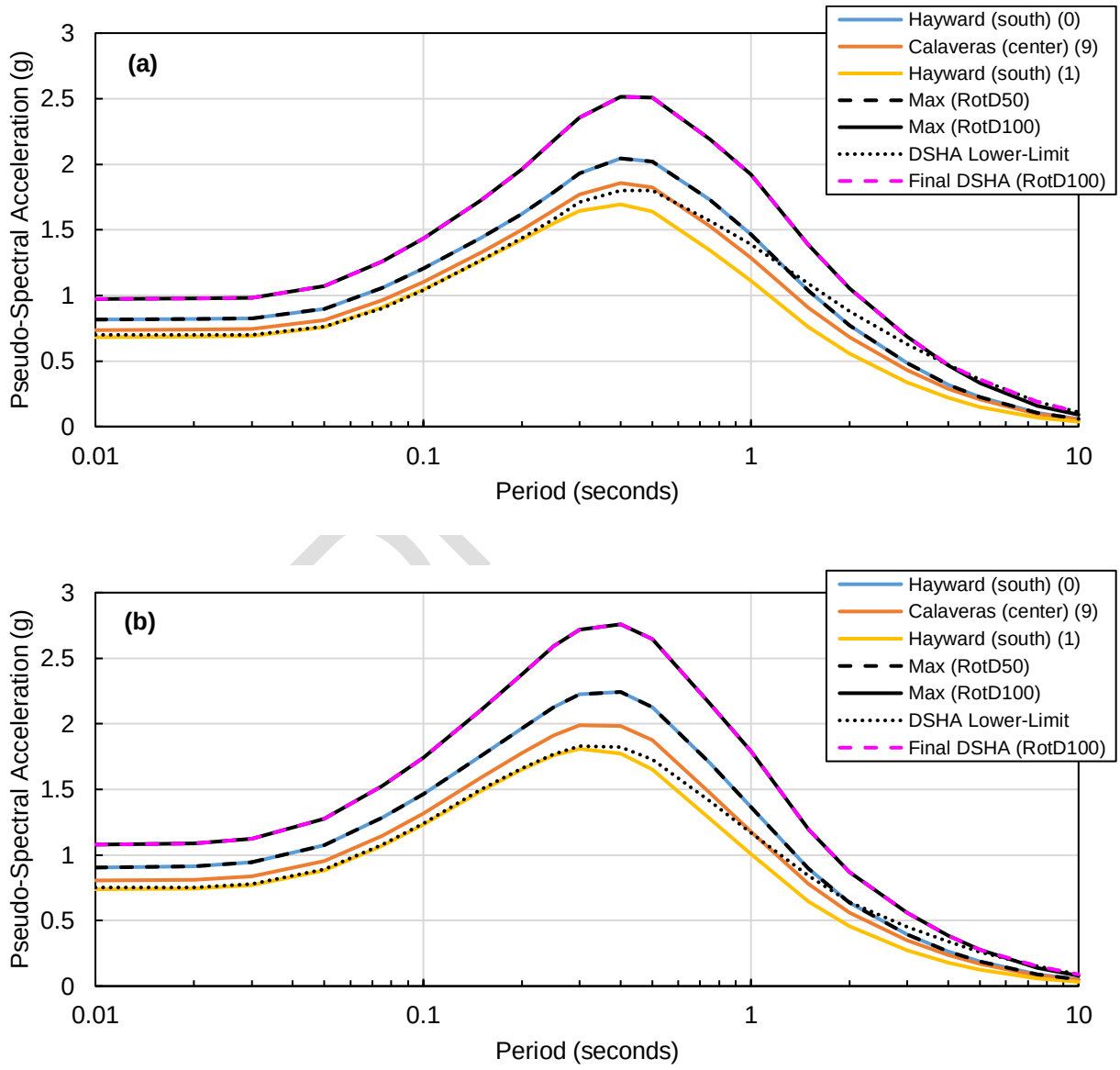
**EXHIBIT E-6: Maximum RotD100 Deterministic Response Spectrum**

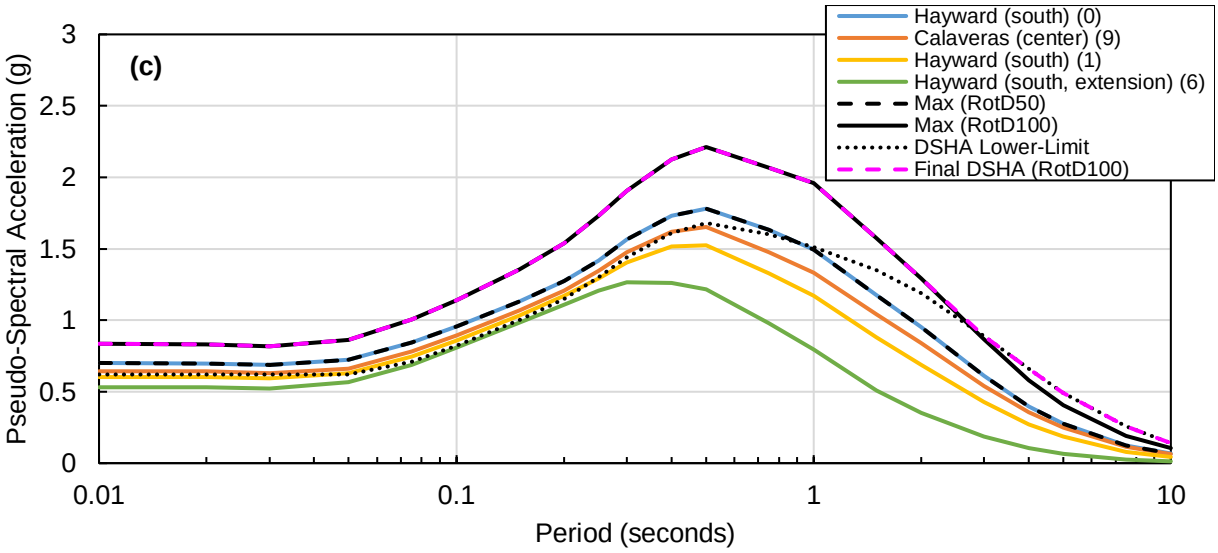


## ASCE 7-22 Deterministic Lower Limit

Table 21.2-1 of ASCE 7-22 provides the deterministic lower limit response spectrum for each site class. These lower limit response spectra represent 84$^{th}$-percentile ground motions of a magnitude $M_W$ 8.0 shallow crustal earthquake at a distance of about 12.5 kilometers from the fault rupture. Our analysis indicates that the deterministic lower limit is higher than the maximum-rotated directivity-adjusted 84$^{th}$-percentile deterministic response spectrum for spectral periods greater than or equal to 3 seconds, 4 seconds, and 7.5 seconds for Site Classes DE, D, and CD, respectively. Considering the uncertainty in the site $V_{S30}$, we considered the maximum PSa of the resulting DSHA response spectra at each spectral period, as shown in Exhibit E-7.

**EXHIBIT E-7: ASCE 7-22 Deterministic Response Spectra for $V_{S30}$ of (a) 262, (b) 341, and (c) 202 m/s**






## GROUND-SURFACE HORIZONTAL RESPONSE SPECTRA

According to Section 21.2.3 of ASCE 7-16 and ASCE 7-22, the $MCE_R$ is controlled by the lesser of the maximum-rotated and risk-targeted probabilistic response spectrum and the 84$^{th}$-percentile maximum-rotated deterministic response spectrum. At this site, the spectral accelerations associated with the deterministic response spectrum are less than the probabilistic response spectrum. Additionally, the $MCE_R$ is not permitted to be lower than 80 percent of the general $MCE_R$ response spectrum for the selected site class(s) (i.e., the code minimum(s)), as described in the following sections.

### ASCE 7-16 Code Minimum and Results

The $MCE_R$ is not permitted to be lower than 80 percent of the general $MCE_R$ response spectrum for Site Class D. In Exhibit E-8, we present the site-specific $MCE_R$ response spectrum. In addition, we calculated the DE response spectrum, which is defined as two-thirds of the $MCE_R$. We provide the recommended values for the site-specific $MCE_R$ and DE response spectra in Table E-2. We provide the associated design acceleration parameters in accordance with Section 21.4 of ASCE 7-16 in Table E-3. In addition, we provide the site-specific, RotD50 peak ground acceleration ($PGA_M$) in Table E-3. The $PGA_M$ does not include risk or maximum rotation factors and is governed by the DSHA.

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**EXHIBIT E-8: ASCE 7-16 5-Percent Damped Site-Specific $MCE_R$ Response Spectrum**

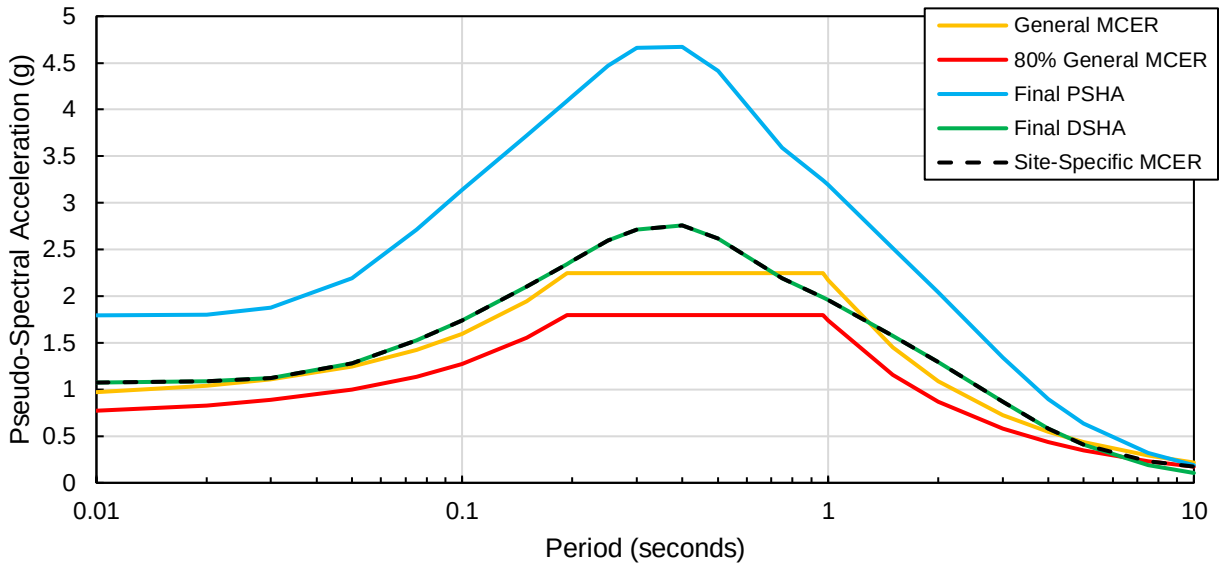


**TABLE E-2: ASCE 7-16 5-Percent Damped Site-Specific Response Spectra**

| PERIOD (seconds) | PSEUDO-SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $MCE_R$ | DE |
| 0.01 | 1.078 | 0.719 |
| 0.02 | 1.088 | 0.726 |
| 0.03 | 1.125 | 0.750 |
| 0.05 | 1.278 | 0.852 |
| 0.075 | 1.528 | 1.019 |
| 0.10 | 1.743 | 1.162 |
| 0.15 | 2.106 | 1.404 |
| 0.194 | 2.345 | 1.564 |
| 0.20 | 2.376 | 1.584 |
| 0.25 | 2.594 | 1.729 |
| 0.30 | 2.716 | 1.811 |
| 0.40 | 2.759 | 1.839 |
| 0.50 | 2.619 | 1.746 |
| 0.75 | 2.189 | 1.459 |
| 0.968 | 1.985 | 1.323 |
| 1.0 | 1.959 | 1.306 |
| 1.5 | 1.575 | 1.050 |
| 2.0 | 1.294 | 0.863 |
| 3.0 | 0.868 | 0.578 |
| 4.0 | 0.582 | 0.388 |
| 5.0 | 0.406 | 0.271 |
| 7.5 | 0.232 | 0.155 |
| 10.0 | 0.174 | 0.116 |

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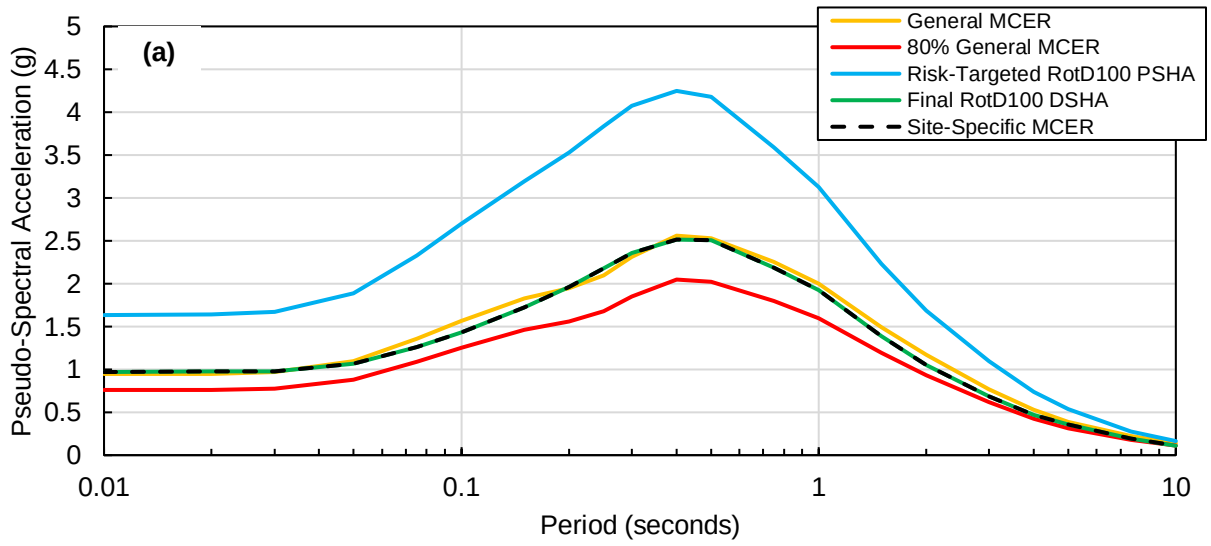
**TABLE E-3: Design Acceleration Parameters based on ASCE 7-16 Sections 21.4 and 21.5 (Latitude: 37.3984, Longitude: -121.8352)**

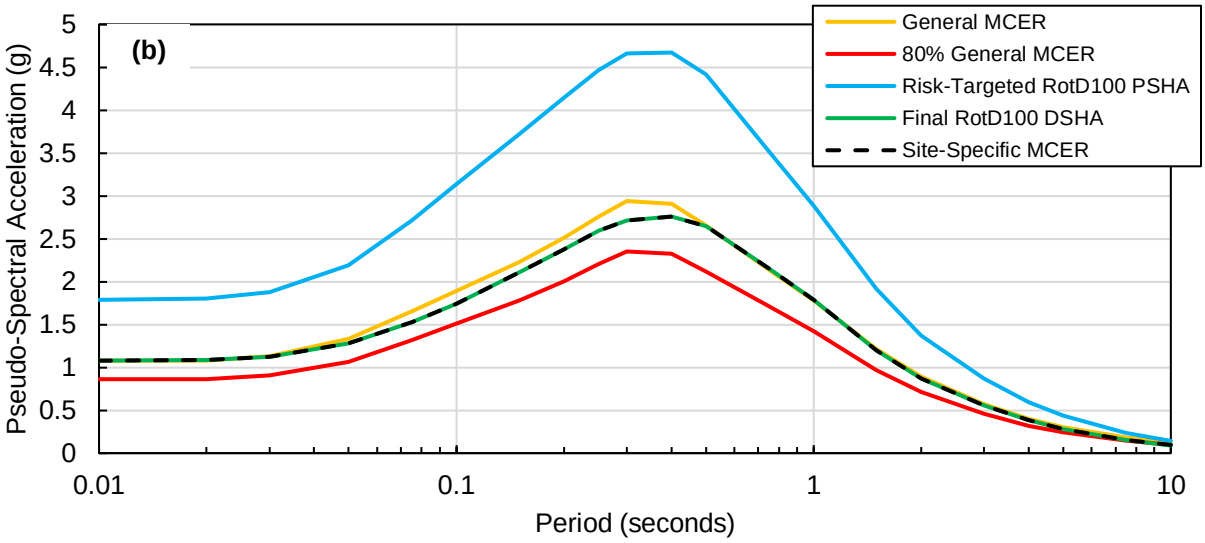
| ACCELERATION PARAMETER | VALUE (g) |
|---|---|
| Mapped $MCE_R$ Spectral Response Acceleration at Short Periods, $S_S$ | 2.25 |
| Mapped $MCE_R$ Spectral Response Acceleration at 1-second Period, $S_1$ | 0.87 |
| $MCE_R$ Spectral Response Acceleration at Short Periods, $S_{MS}$ | 2.48 |
| $MCE_R$ Spectral Response Acceleration at 1-second Period, $S_{M1}$ | 2.60 |
| Design Spectral Response Acceleration at Short Periods, $S_{DS}$ | 1.66 |
| Design Spectral Response Acceleration at 1-second Period, $S_{D1}$ | 1.74 |
| $MCE_G$ peak ground acceleration adjusted for site class effects, $PGA_M$ | 0.91 |

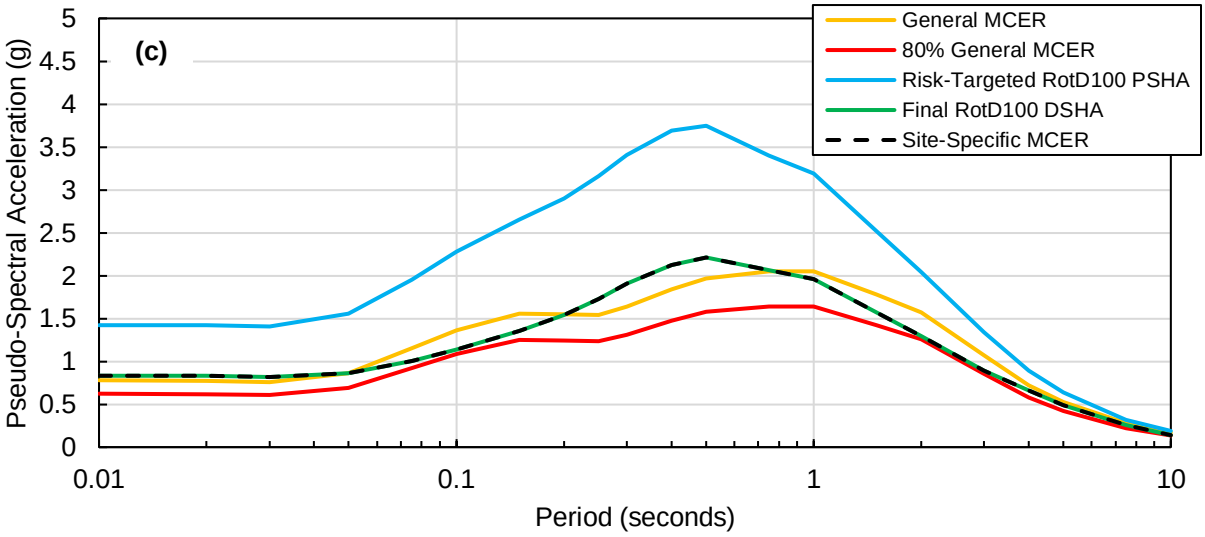
## ASCE 7-22 Code Minimum and Results

The $MCE_R$ is not permitted to be lower than 80 percent of the general $MCE_R$ response spectrum for Site Classes DE, D, and CD. In Figure E-9, we present the site-specific $MCE_R$ response spectra for each site class.

**EXHIBIT E-9: ASCE 7-22 5-Percent Damped Site-Specific $MCE_R$ Response Spectra for $V_{S30}$ of (a) 262, (b) 341, and (c) 202 m/s**

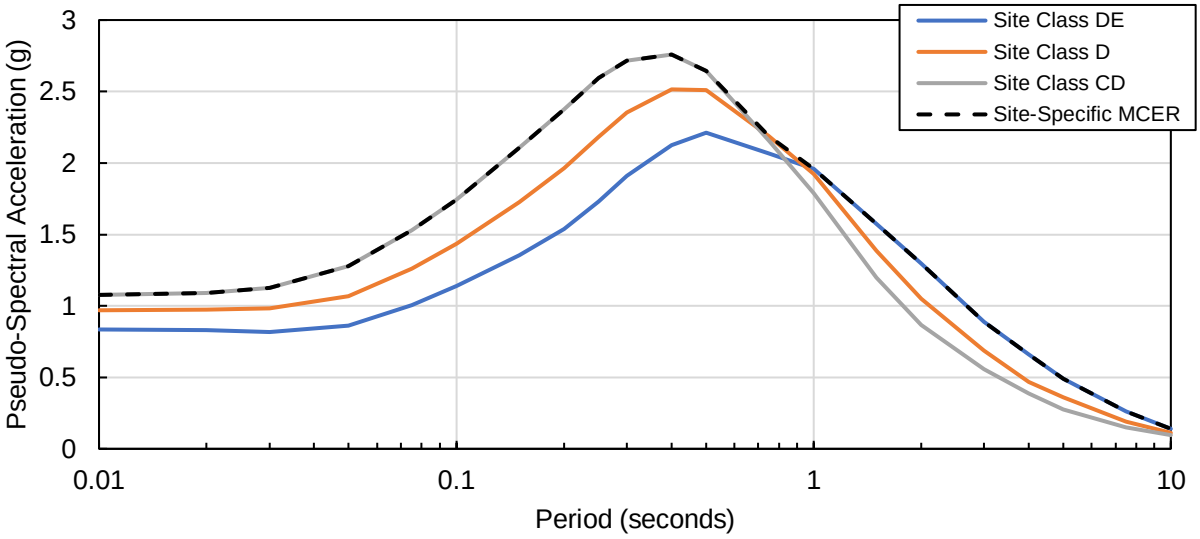





Considering the uncertainty in the site $V_{S30}$, we considered the maximum PSa across all three site classes to determine the final site-specific $MCE_R$ response spectrum, as shown in Exhibit E-10.

**EXHIBIT E-10: ASCE 7-22 5-Percent Damped Site-Specific $MCE_R$ Response Spectrum**




In addition, we calculated the DE (Design Earthquake) response spectrum, which is defined as two-thirds of the $MCE_R$. We provide the recommended values for the site-specific $MCE_R$ and DE response spectra in Table E-4. We provide the associated design acceleration parameters in accordance with Section 21.4 of ASCE 7-22 in Table E-5. In addition, we provide the site-specific RotD50 peak ground acceleration ($PGA_M$) in Table E-5. The $PGA_M$ does not include risk or maximum rotation factors and is governed by the DSHA.

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**TABLE E-4: ASCE 7-22 5-Percent Damped Site-Specific Response Spectra**

| PERIOD (seconds) | PSEUDO-SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $MCE_R$ | DE |
| 0.01 | 1.078 | 0.719 |
| 0.02 | 1.088 | 0.726 |
| 0.03 | 1.125 | 0.750 |
| 0.05 | 1.278 | 0.852 |
| 0.075 | 1.528 | 1.019 |
| 0.10 | 1.743 | 1.162 |
| 0.15 | 2.106 | 1.404 |
| 0.20 | 2.376 | 1.584 |
| 0.25 | 2.594 | 1.729 |
| 0.30 | 2.716 | 1.811 |
| 0.40 | 2.759 | 1.839 |
| 0.50 | 2.645 | 1.763 |
| 0.75 | 2.189 | 1.459 |
| 1.0 | 1.959 | 1.306 |
| 1.5 | 1.575 | 1.050 |
| 2.0 | 1.294 | 0.863 |
| 3.0 | 0.890 | 0.593 |
| 4.0 | 0.660 | 0.440 |
| 5.0 | 0.490 | 0.327 |

| PERIOD (seconds) | PSEUDO-SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $MCE_R$ | DE |
| 7.5 | 0.260 | 0.173 |
| 10.0 | 0.140 | 0.093 |

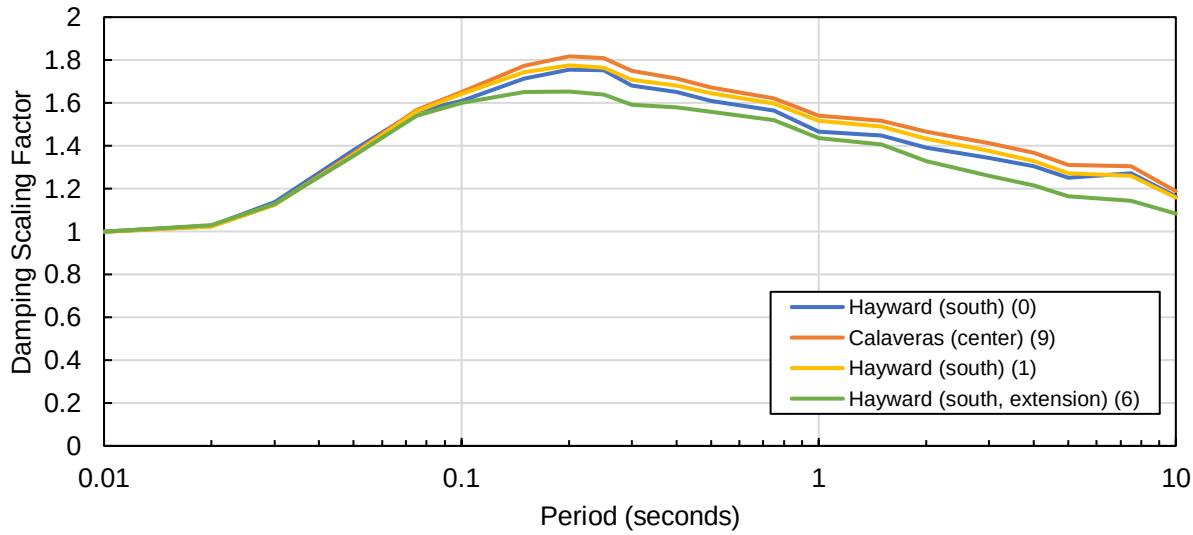
**TABLE E-5: Design Acceleration Parameters based on ASCE 7-22 Sections 21.4 and 21.5 (Latitude: 37.3984, Longitude: -121.8352)**

| ACCELERATION PARAMETER | VALUE (g) |
|---|---|
| Mapped $MCE_R$ Spectral Response Acceleration at Short Periods, $S_S$ | 2.54 |
| Mapped $MCE_R$ Spectral Response Acceleration at 1-second Period, $S_1$ | 1.01 |
| $MCE_R$ Spectral Response Acceleration at Short Periods, $S_{MS}$ | 2.48 |
| $MCE_R$ Spectral Response Acceleration at 1-second Period, $S_{M1}$ | 2.40 |
| Design Spectral Response Acceleration at Short Periods, $S_{DS}$ | 1.66 |
| Design Spectral Response Acceleration at 1-second Period, $S_{D1}$ | 1.60 |
| $MCE_G$ peak ground acceleration adjusted for site class effects, $PGA_M$ | 0.90 |

## 0.5-Percent Damped Response Spectra

We additionally developed the 0.5-percent damped $MCE_R$ and DE response spectra by applying a damping scaling factor (DSF), as outlined in Rezaeian et al. (2014), to the 5-percent damped response spectra provided in Tables E-2 and E-4. The DSF is a period-dependent multiplier used to adjust the standard 5-percent damped spectral response based on the target damping, moment magnitude, and rupture distance of a deterministic event. We present the DSFs for the scenarios considered in the DSHA in Exhibit E-11.

**EXHIBIT E-11: Damping Scaling Factors from DSHA**

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The DSF is independent of $V_{S30,}$ and the seismic-hazard analysis is deterministically controlled by the Hayward (South) (0) scenario for all spectral periods and for ASCE 7-16 and ASCE 7-22. Therefore, we considered the DSF corresponding to the controlling Hayward (South) (0) scenario and applied it to the final 5-percent damped $MCE_R$ and DE response spectra for both ASCE 7-16 and ASCE 7-22 spectra. We present the resulting 0.5-percent damped $MCE_R$ and DE response spectra calculated in accordance with ASCE 7-16 in Exhibit E-12 and Table E-6 below.

**EXHIBIT E-12: ASCE 7-16 0.5-Percent Damped Site-Specific Response Spectra**

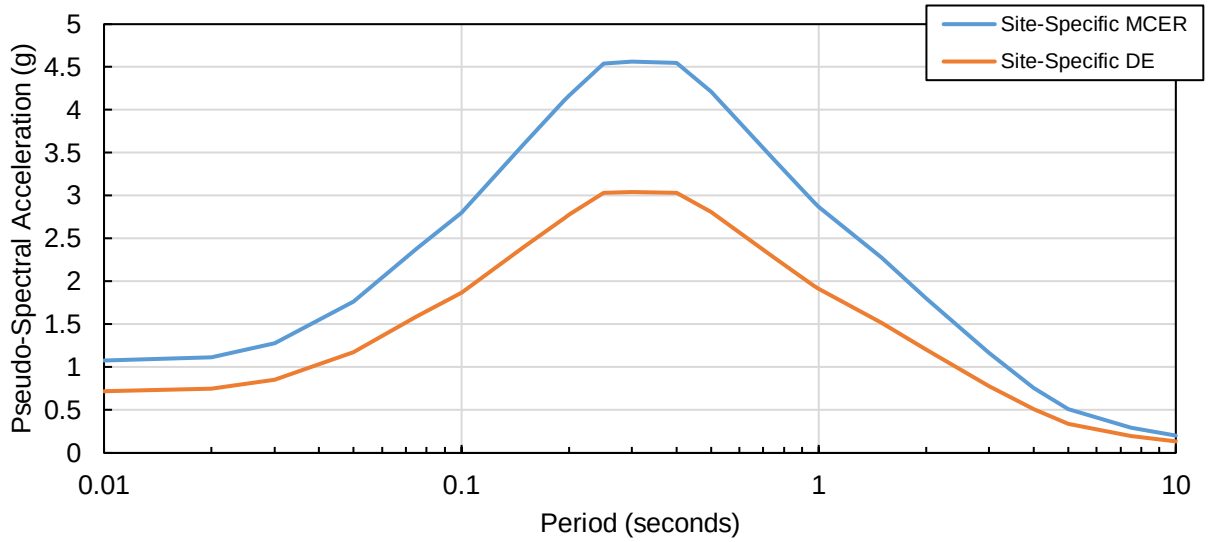



**TABLE E-6: ASCE 7-16 0.5-Percent Damped Site-Specific Response Spectra**

| PERIOD (seconds) | PSEUDO-SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $MCE_R$ | DE |
| 0.01 | 1.078 | 0.719 |
| 0.02 | 1.119 | 0.746 |
| 0.03 | 1.279 | 0.852 |
| 0.05 | 1.763 | 1.175 |
| 0.075 | 2.386 | 1.590 |
| 0.10 | 2.803 | 1.869 |
| 0.15 | 3.607 | 2.405 |
| 0.194 | 4.105 | 2.737 |
| 0.20 | 4.171 | 2.780 |
| 0.25 | 4.544 | 3.029 |
| 0.30 | 4.563 | 3.042 |
| 0.40 | 4.552 | 3.035 |
| 0.50 | 4.216 | 2.811 |
| 0.75 | 3.424 | 2.283 |
| 0.968 | 2.932 | 1.954 |
| 1.0 | 2.871 | 1.914 |
| 1.5 | 2.280 | 1.520 |
| 2.0 | 1.802 | 1.201 |
| 3.0 | 1.165 | 0.776 |

| PERIOD (seconds) | PSEUDO-SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $MCE_R$ | DE |
| 4.0 | 0.760 | 0.507 |
| 5.0 | 0.508 | 0.339 |
| 7.5 | 0.295 | 0.197 |
| 10.0 | 0.202 | 0.135 |

We present the resulting 0.5-percent damped $MCE_R$ and DE response spectra calculated in accordance with ASCE 7-22 in Figure E-13 and Table E-7 below.

**EXHIBIT E-13: ASCE 7-22 0.5-Percent Damped Site-Specific Response Spectra**

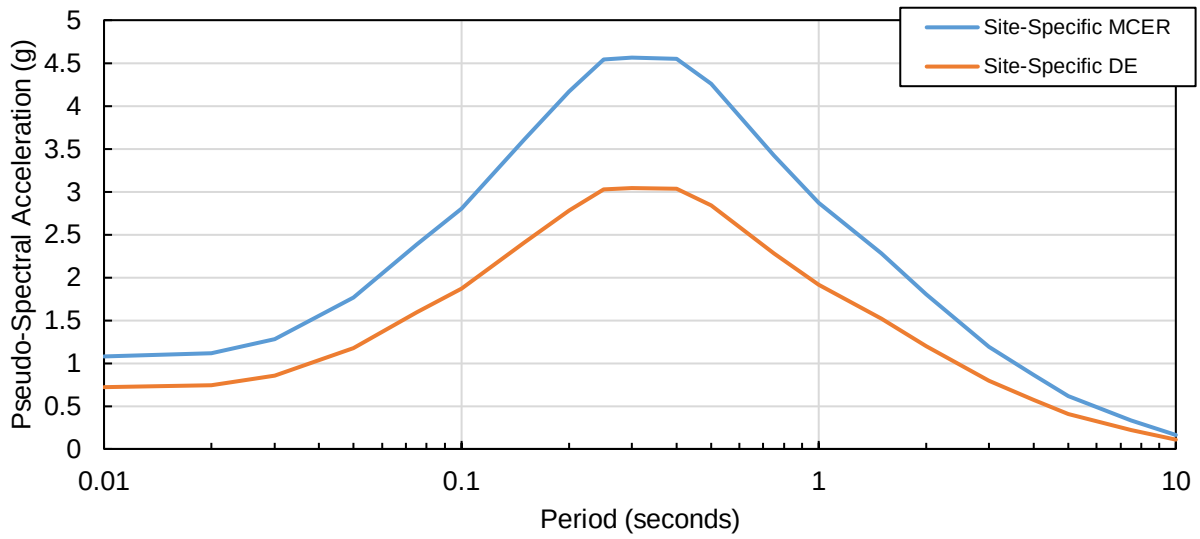



**TABLE E-7: ASCE 7-22 0.5-Percent Damped Site-Specific Response Spectra**

| PERIOD (seconds) | PSEUDO-SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $MCE_R$ | DE |
| 0.01 | 1.078 | 0.719 |
| 0.02 | 1.119 | 0.746 |
| 0.03 | 1.279 | 0.852 |
| 0.05 | 1.763 | 1.175 |
| 0.075 | 2.386 | 1.590 |
| 0.10 | 2.803 | 1.869 |
| 0.15 | 3.607 | 2.405 |
| 0.20 | 4.171 | 2.780 |
| 0.25 | 4.544 | 3.029 |
| 0.30 | 4.563 | 3.042 |
| 0.40 | 4.552 | 3.035 |
| 0.50 | 4.258 | 2.839 |
| 0.75 | 3.424 | 2.283 |
| 1.0 | 2.871 | 1.914 |
| 1.5 | 2.280 | 1.520 |
| 2.0 | 1.802 | 1.201 |

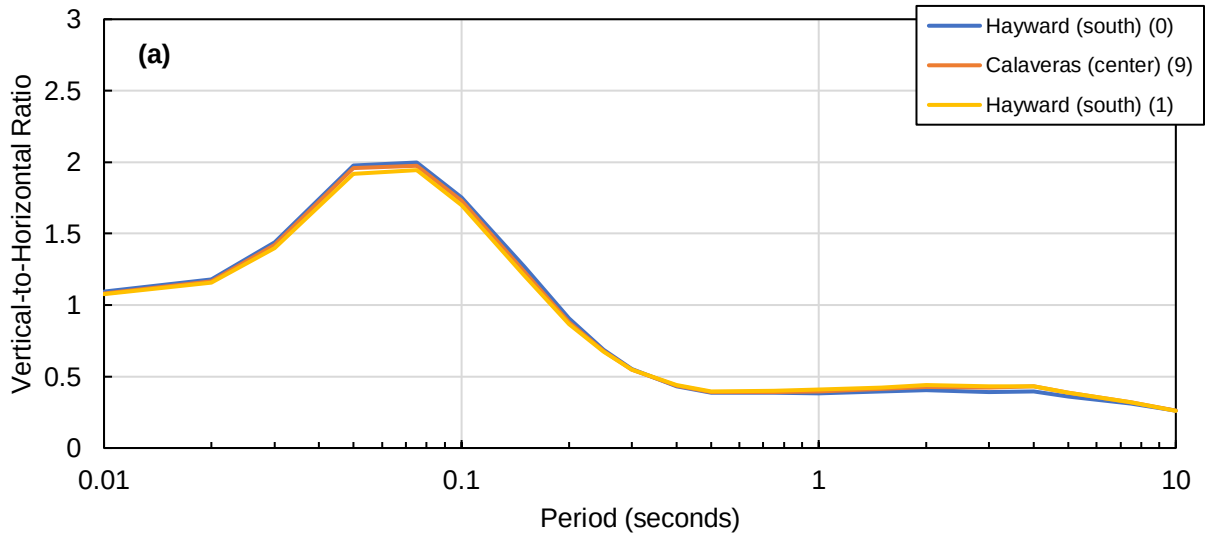
| PERIOD (seconds) | PSEUDO-SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $MCE_R$ | DE |
| 3.0 | 1.194 | 0.796 |
| 4.0 | 0.862 | 0.575 |
| 5.0 | 0.613 | 0.409 |
| 7.5 | 0.331 | 0.220 |
| 10.0 | 0.163 | 0.109 |

## GROUND-SURFACE VERTICAL RESPONSE SPECTRA

We developed vertical response spectra using the methodology by Bozorgnia and Campbell (2016) and Gülerce et al. (2017). These methodologies allow for the development of a vertical response spectrum that is consistent with the horizontal response spectrum through the application of a vertical-to-horizontal (V:H) spectral acceleration ratio. The V:H models were developed for the vertical "average" horizontal components of ground motion using a mathematical formation that accounts for the correlation between these two components. The V:H ratio can then be multiplied by the horizontal acceleration at each spectral period to obtain the site-specific $MCE_R$ vertical response spectral acceleration ($S_{aMv}$). We assigned equal weight (0.50) to the two V:H GMMs in our analysis.

Similar to calculating the DSHA spectra, this methodology requires the input of specific fault parameters for each scenario. We calculated the V:H ratios for each of the scenarios and $V_{S30}$ values considered in the DSHA, as shown in Exhibit E-14. Note that each V:H represents the weighted mean of the two V:H GMMs considered.

**EXHIBIT E-14: Vertical-to-Horizontal Ratios from DSHA for $V_{S30}$ of (a) 262, (b) 341, and (c) 202 m/s**

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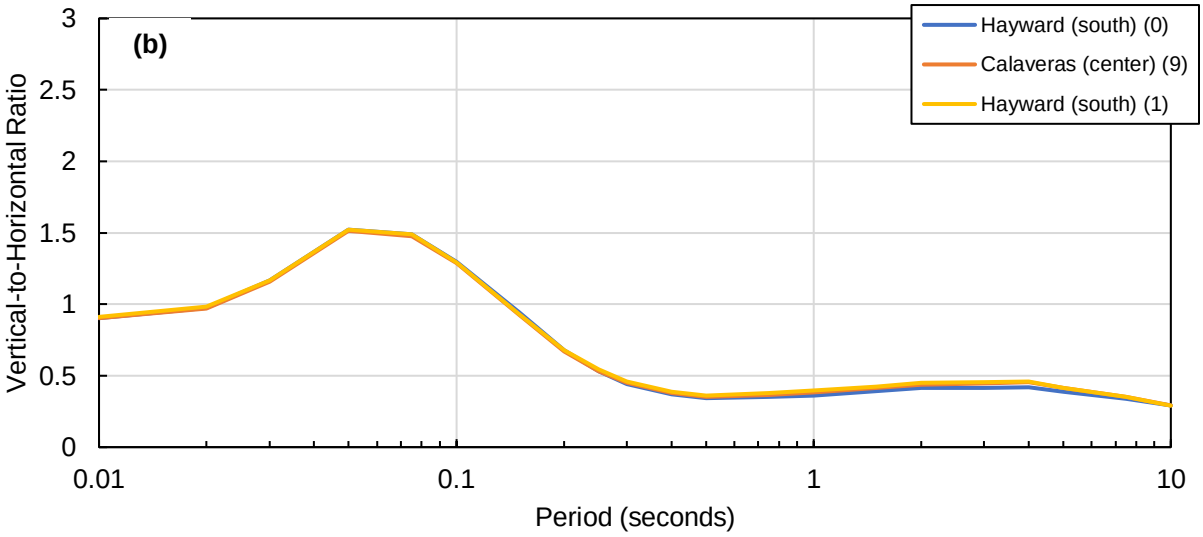
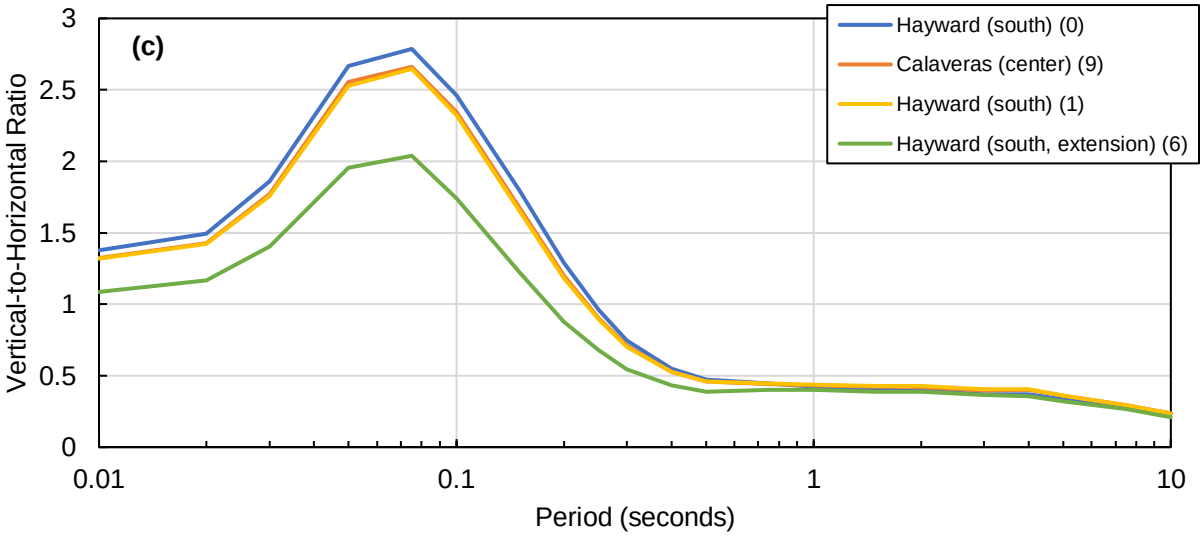
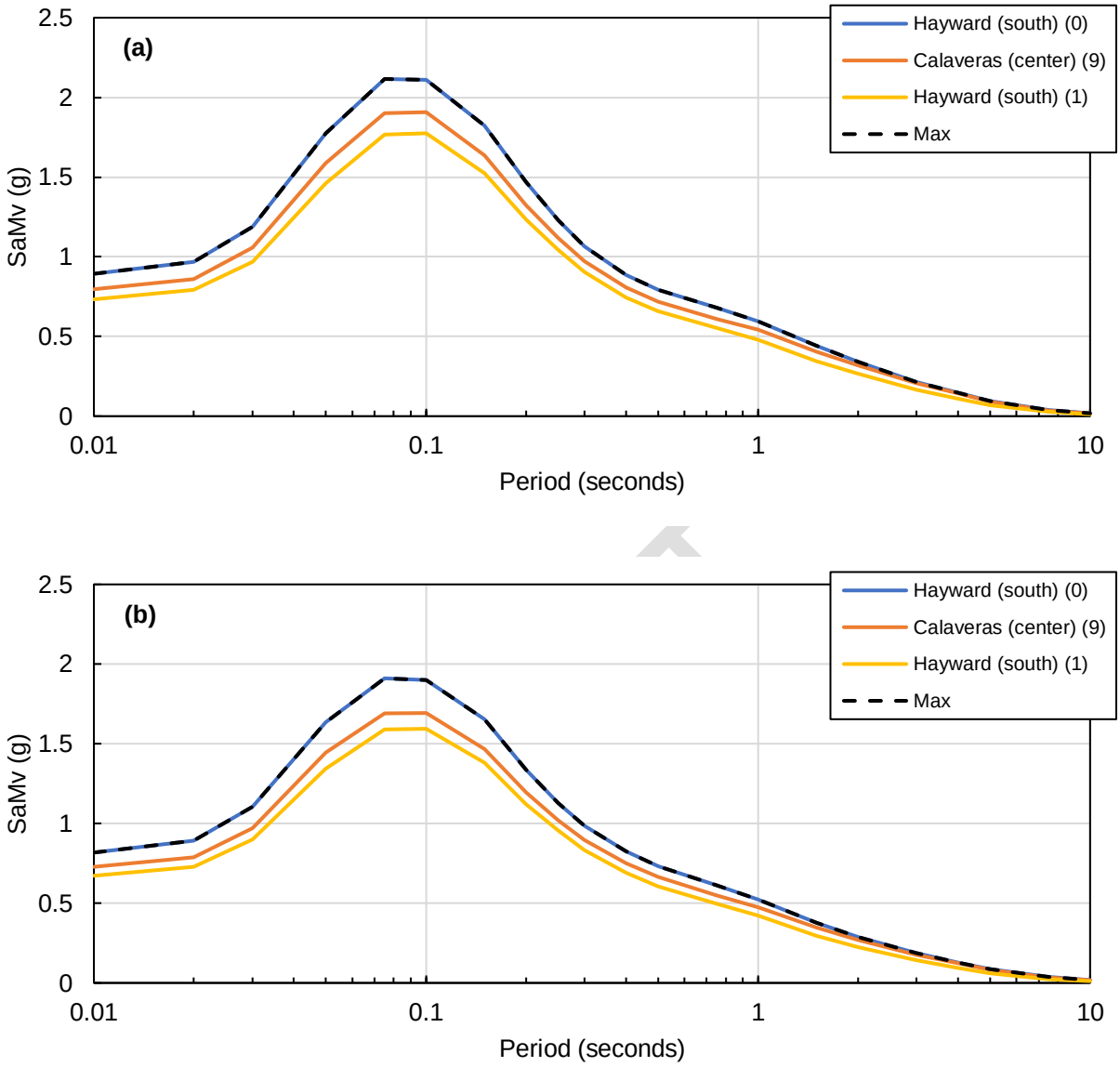
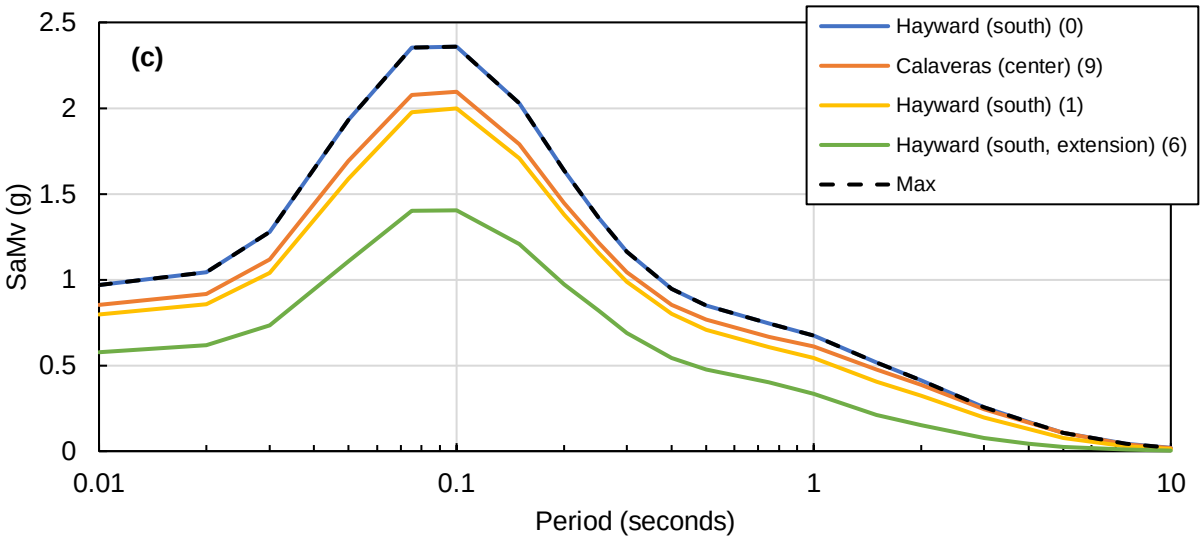



We then multiplied the V:H ratios for each scenario by the corresponding 5-percent damped RotD50 horizontal response spectra calculated in the DSHA, as shown in Exhibit E-15. We considered the maximum $S_{aMv}$ value at each spectral period.

**EXHIBIT E-15: Vertical Response Spectra from DSHA for $V_{S30}$ of (a) 262, (b) 341, and (c) 202 m/s**






## ASCE 7-16 Code Minimum

According to Section 11.9.2 of ASCE 7-16, the value of $S_{aMv}$ is not to be lower than 80 percent of the general $S_{aMv}$ for periods less than or equal to 2 seconds. Additionally, the $S_{aMv}$ is not to be lower than 50 percent of the site-specific horizontal $MCE_R$ response spectrum for periods greater than 2 seconds. Considering the uncertainty in the site $V_{S30}$, we also considered the maximum PSa of the vertical response spectra previously described at each spectral period, as shown in Exhibit E-16.

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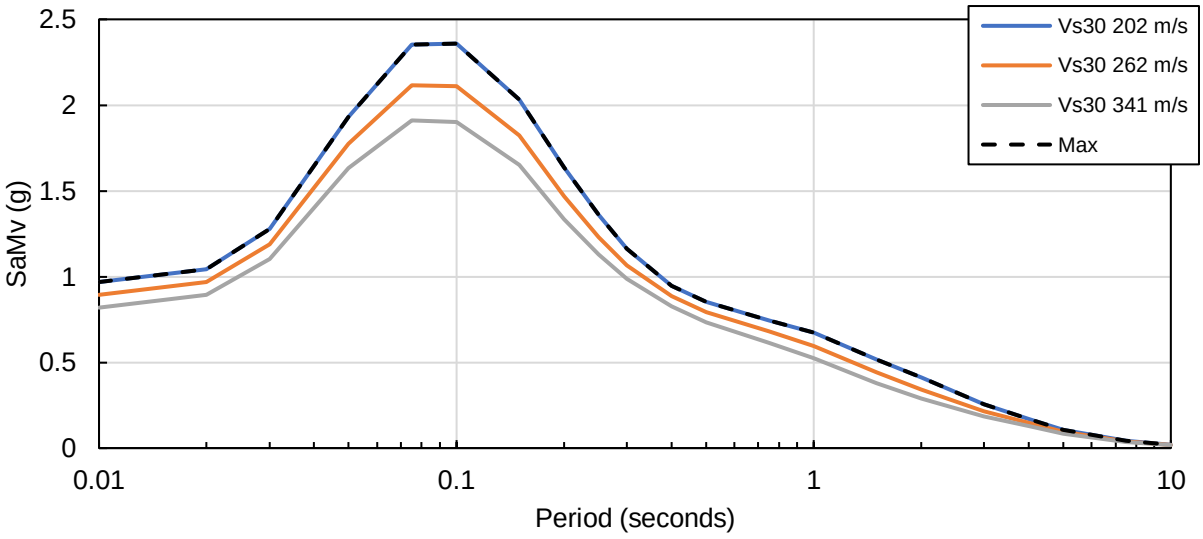
**EXHIBIT E-16: ASCE 7-16 Maximum Vertical Response Spectrum**



In Exhibit E-17, we present the development of the final 5-percent damped $S_{aMv}$ response spectrum based on comparison of the site-specific vertical and ASCE 7-16 code-minimum response spectra. In addition, we calculated the design vertical response spectrum ($S_{av}$), which is defined as two-thirds of the $S_{aMv}$. We provide the site-specific $S_{aMv}$ and $S_{av}$ response spectra calculated in accordance with ASCE 7-16 in Table E-8.

**EXHIBIT E-17: ASCE 7-16 5-Percent Damped Site-Specific $S_{aMv}$ Response Spectrum**

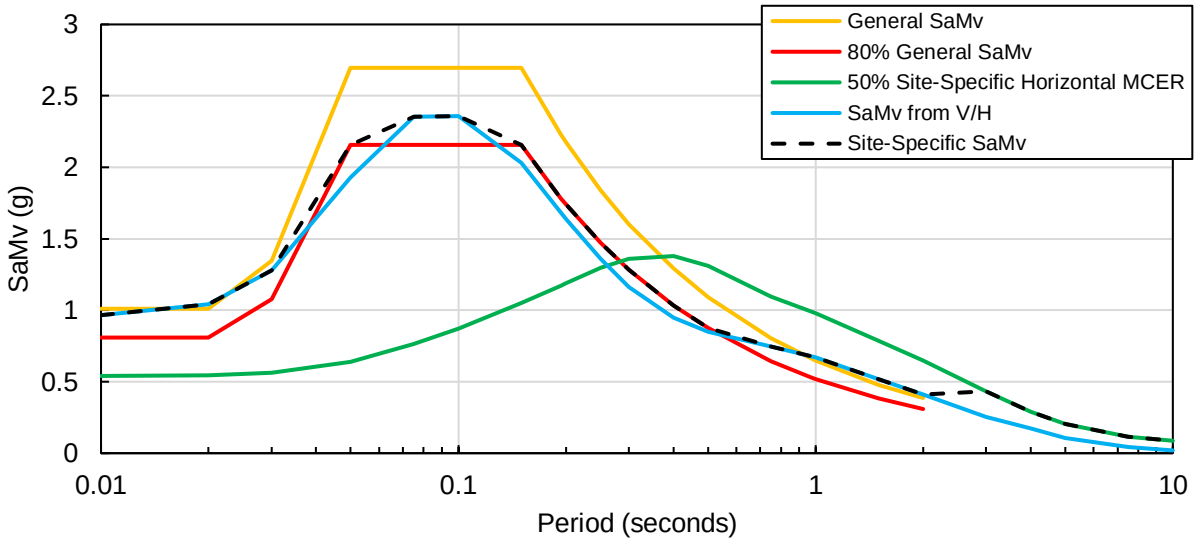



**TABLE E-8: ASCE 7-16 Site-Specific $S_{aMv}$ and $S_{av}$ Response Spectra**

| PERIOD (seconds) | VERTICAL SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $S_{aMv}$ | $S_{av}$ |
| 0.01 | 0.967 | 0.645 |
| 0.02 | 1.043 | 0.695 |
| 0.03 | 1.277 | 0.852 |
| 0.05 | 2.157 | 1.438 |
| 0.075 | 2.353 | 1.569 |
| 0.10 | 2.359 | 1.572 |
| 0.15 | 2.157 | 1.438 |
| 0.194 | 1.781 | 1.188 |
| 0.20 | 1.738 | 1.159 |
| 0.25 | 1.471 | 0.980 |
| 0.30 | 1.283 | 0.855 |
| 0.40 | 1.034 | 0.689 |
| 0.50 | 0.874 | 0.583 |
| 0.75 | 0.745 | 0.497 |
| 0.968 | 0.681 | 0.454 |
| 1.0 | 0.672 | 0.448 |
| 1.5 | 0.518 | 0.345 |
| 2.0 | 0.412 | 0.275 |
| 3.0 | 0.434 | 0.289 |
| 4.0 | 0.291 | 0.194 |

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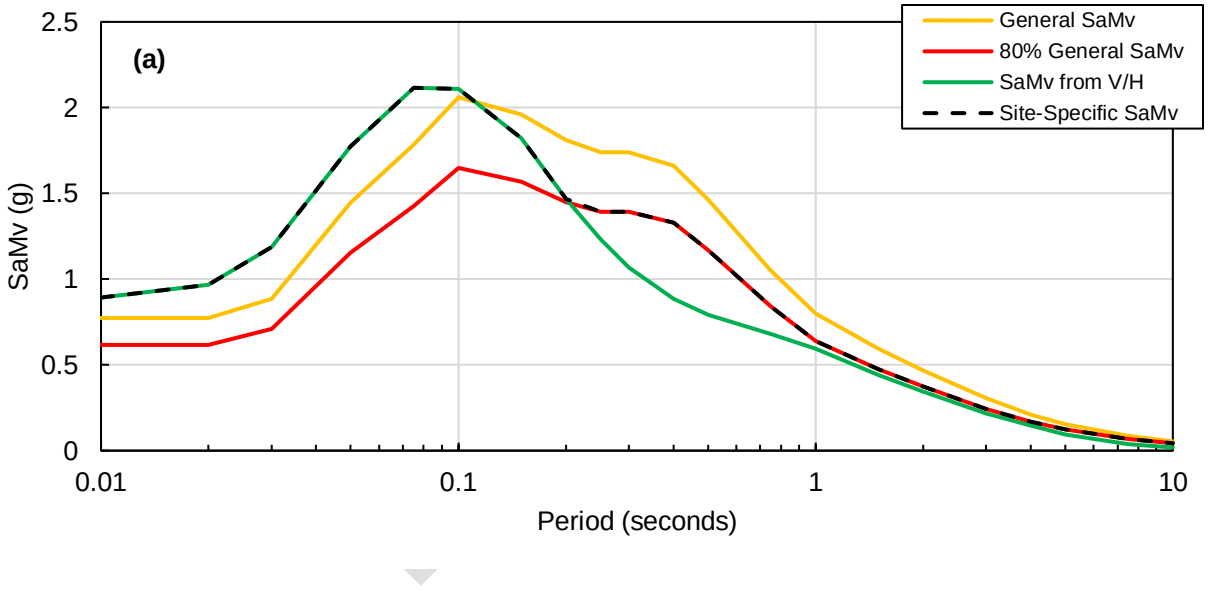
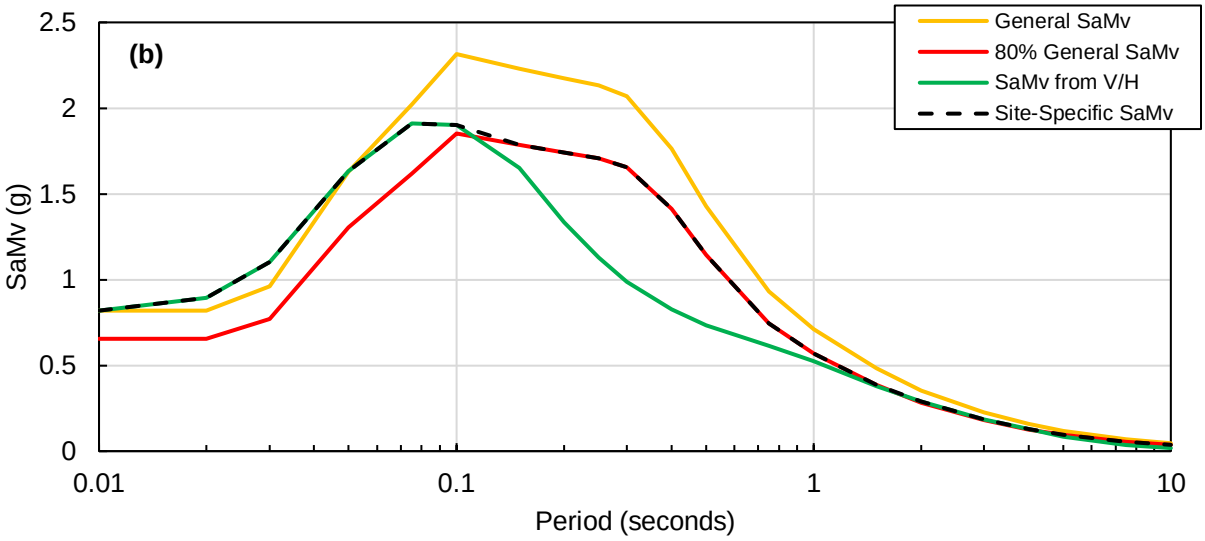
| PERIOD (seconds) | VERTICAL SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $S_{aMv}$ | $S_{av}$ |
| 5.0 | 0.203 | 0.135 |
| 7.5 | 0.116 | 0.077 |
| 10.0 | 0.087 | 0.058 |

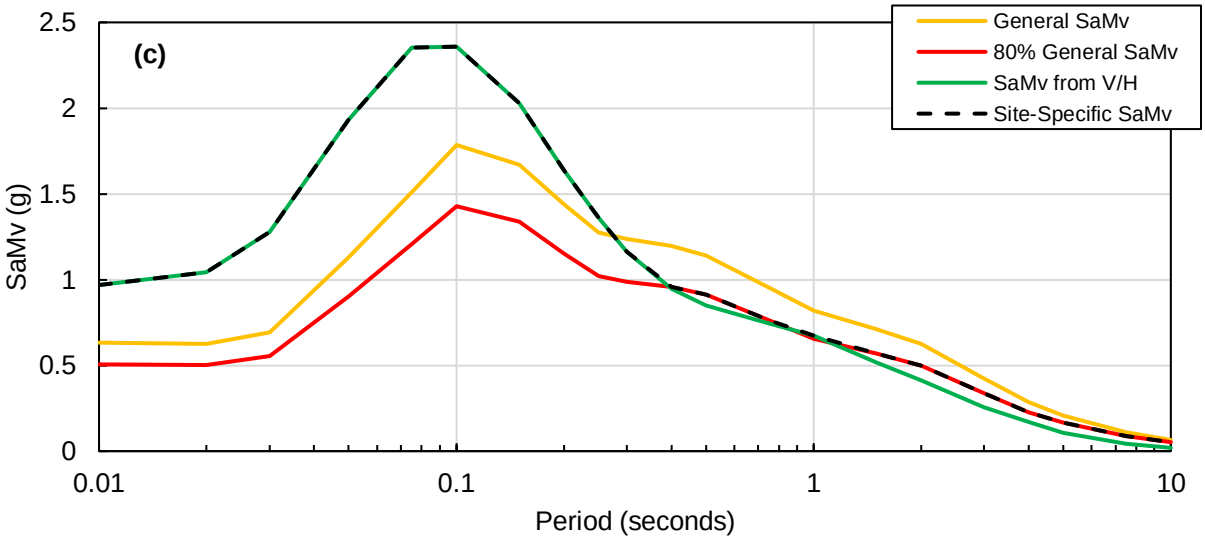
## ASCE 7-22 Code Minimum

According to Section 11.9.2 of ASCE 7-16, the value of $S_{aMv}$ is not to be lower than 80 percent of the general $S_{aMv}$ for Site Classes DE, D, and CD. In Exhibit E-18, we present the development of the final $S_{aMv}$ response spectrum based on comparison of the site-specific vertical and code-minimum response spectra.

**EXHIBIT E-18: ASCE 7-22 5-Percent Damped Site-Specific $S_{aMv}$ Response Spectra for $V_{S30}$ of (a) 262, (b) 341, and (c) 202 m/s**






Considering the uncertainty in the site $V_{S30}$, we considered the maximum PSa of the vertical response spectra previously described at each spectral period, as shown in Exhibit E-19. In addition, we calculated the design vertical response spectrum ($S_{av}$), which is defined as two-thirds of the $S_{aMv}$. We provide the site-specific $S_{aMv}$ and $S_{av}$ response spectra calculated in accordance with ASCE 7-22 in Table E-9.

**EXHIBIT E-19: ASCE 7-22 5-Percent Damped Site-Specific $S_{aMv}$ Response Spectrum**

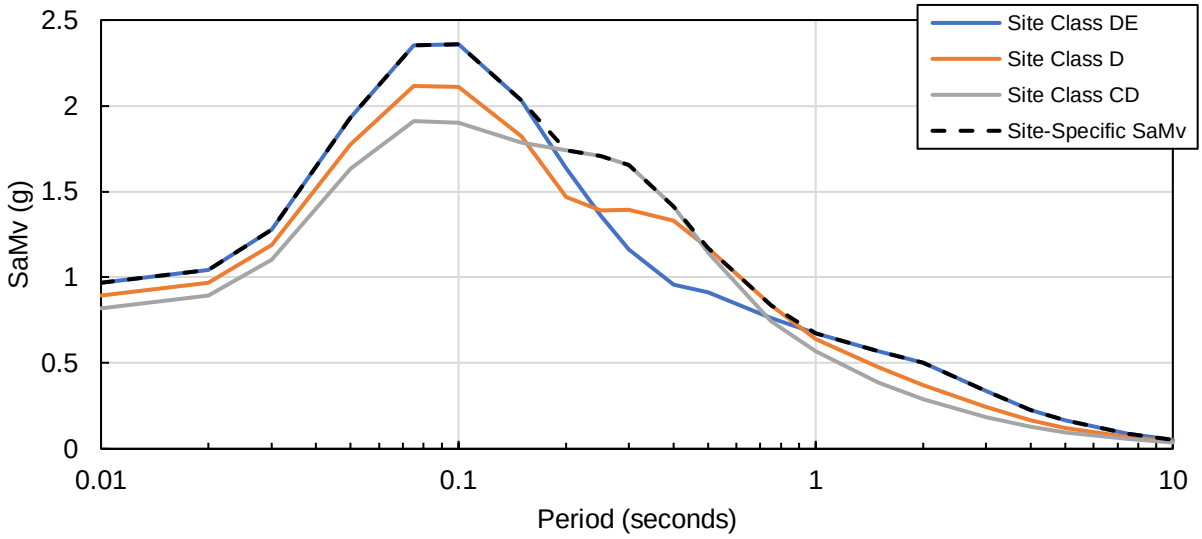



**TABLE E-9: ASCE 7-22 Site-Specific $Sa_{Mv}$ and $Sa_v$ Response Spectra**

| PERIOD (seconds) | VERTICAL SPECTRAL ACCELERATION (g) | |
|---|---|---|
| | $S_{aMv}$ | $S_{av}$ |
| 0.01 | 0.967 | 0.645 |
| 0.02 | 1.043 | 0.695 |
| 0.03 | 1.277 | 0.852 |
| 0.05 | 1.930 | 1.286 |
| 0.075 | 2.353 | 1.569 |
| 0.10 | 2.359 | 1.572 |
| 0.15 | 2.030 | 1.353 |
| 0.20 | 1.739 | 1.160 |
| 0.25 | 1.706 | 1.137 |
| 0.30 | 1.655 | 1.103 |
| 0.40 | 1.411 | 0.941 |
| 0.50 | 1.170 | 0.780 |
| 0.75 | 0.839 | 0.559 |
| 1.0 | 0.672 | 0.448 |
| 1.5 | 0.568 | 0.379 |
| 2.0 | 0.500 | 0.333 |
| 3.0 | 0.339 | 0.226 |
| 4.0 | 0.227 | 0.152 |
| 5.0 | 0.167 | 0.111 |
| 7.5 | 0.087 | 0.058 |
| 10.0 | 0.052 | 0.035 |

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## LIMITATIONS AND CLOSURE

We strive to perform our professional services in accordance with generally accepted principles and practices currently employed in the area; there is no warranty, express or implied. Although research on modeling seismic hazard and ground response continues to improve, seismologists and engineers cannot predict the exact timing, location, or magnitude of future earthquakes. For this reason, significant uncertainly remains regarding anticipated ground motions.

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# ATTACHMENT A

## DEAGGREGATION RESULTS

**EXHIBIT E.1-1: Disaggregation Results for a 2,475-year Return Period at the PGA**

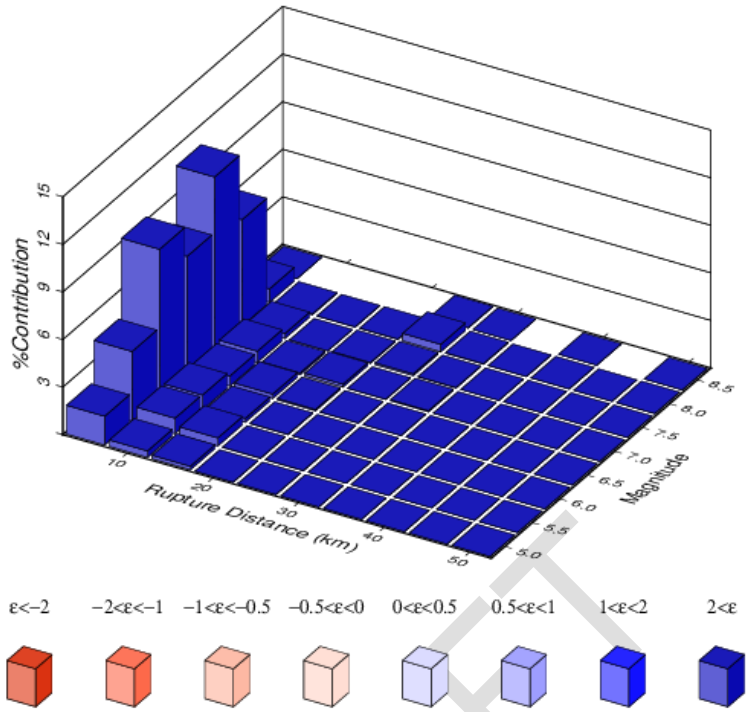


**EXHIBIT E.1-2: Disaggregation Results for a 2,475-year Return Period at a 0.5 Second Period**

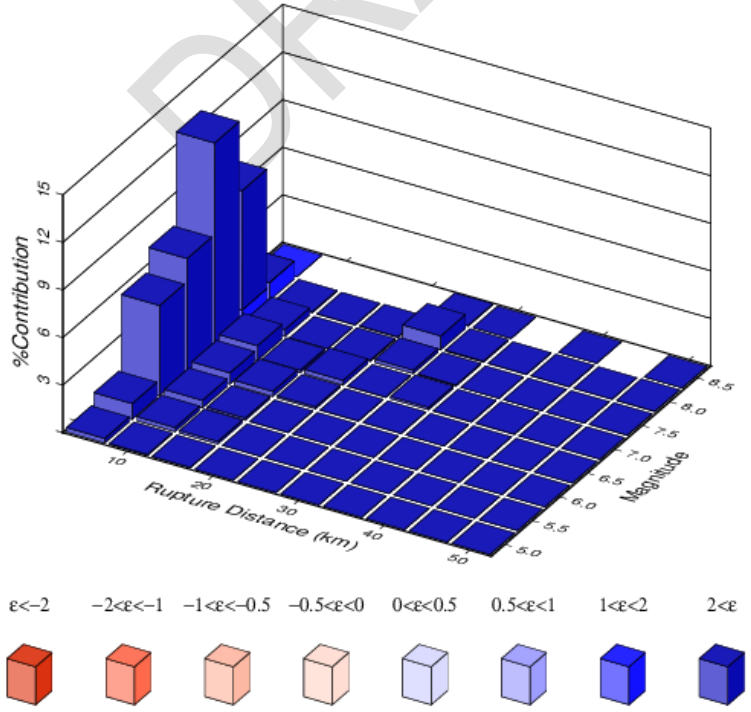


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**EXHIBIT E.1-3: Disaggregation results for a 2,475-year return period at a 1 second period**

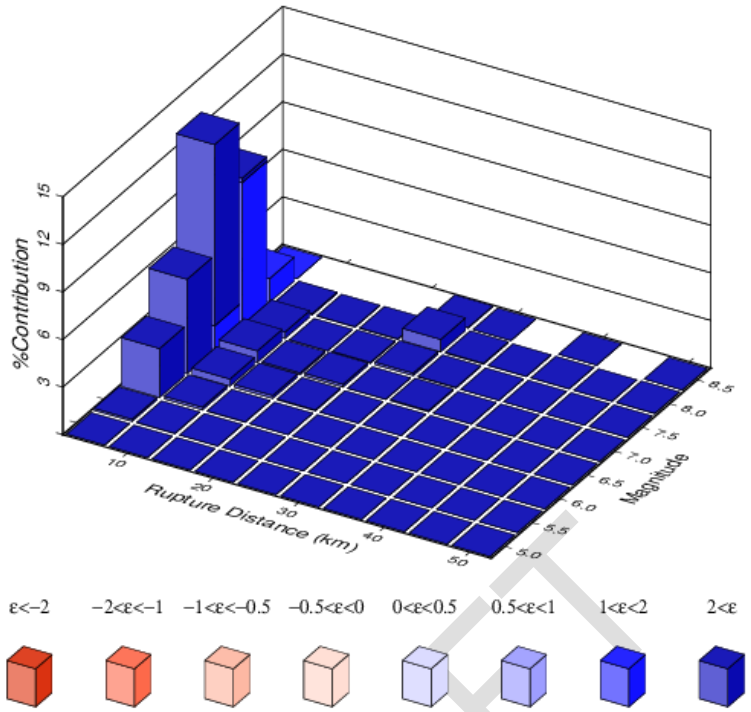
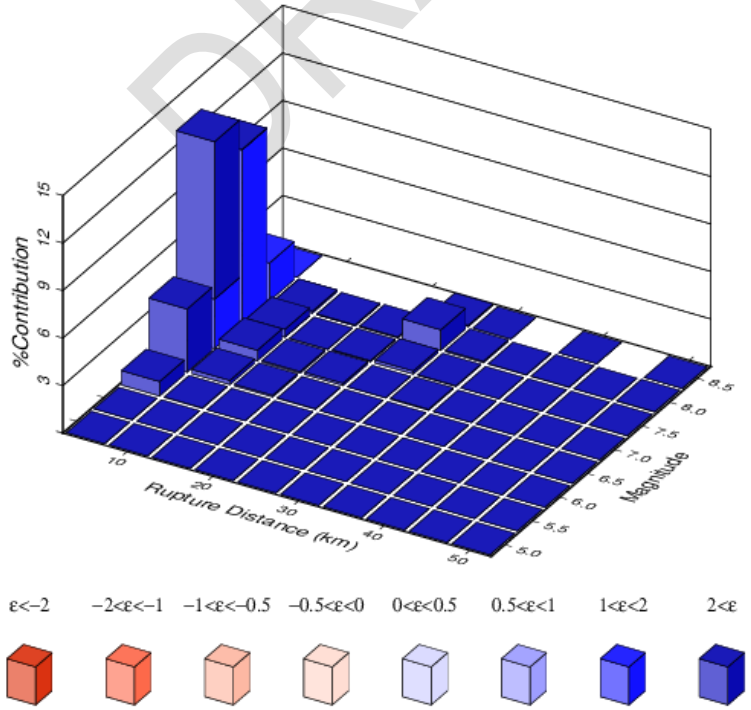



**EXHIBIT E.1-4: Disaggregation Results for a 2,475-year Return Period at a 2 Second Period**

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# APPENDIX E

## Phase 1 Hazardous Substance Liability Assessment

Final Report

# Hazardous Substance Liability Assessment

## Penitencia Water Treatment Plant (PWTP) Residuals Management

## APN: 595-04-072

## San Jose, California

| | | | |
|---|---|---|---|
| Submitted to: | Valley Water | Submitted by: | David Wright |
| Reference: | 29085-23-1170 | Date: | 16 October 2023 |

Locus Technologies
299 Fairchild Drive
Mountain View, CA 94043

(650) 960-1640

locustec.com

# Certification

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of 40 C.F.R. 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 C.F.R. Part 312.

_____ _____

Nancy-Jeanne LeFevre, PE Date



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# List of Acronyms and Abbreviations

| ACRONYM | DESCRIPTION |
|---|---|
| ACM | Asbestos-containing materials |
| AST | Aboveground Storage Tank |
| ASTM | American Society for Testing and Materials |
| bgs | below ground surface |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CERCLIS | Comprehensive Environmental Response, Compensation, and Liability Information System |
| CERS | California Environmental Reporting System |
| CHMIRS | California Hazardous Material Incident Reporting System |
| CIWQS | California Integrated Water Quality System |
| CUPA | Certified Unified Program Agency |
| DEH | Department of Environmental Health |
| DTSC | Department of Toxic Substances Control |
| DWR | Department of Water Resources |
| ECHO | Enforcement and Compliance History Information |
| EDR | Environmental Data Resources |
| EMI | Emission Inventory Data |
| ENF | Enforcement Action Listing |



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| ACRONYM | DESCRIPTION |
|---|---|
| ERNS | Emergency Response Notification System |
| ESA | Environmental Site Assessment |
| ESL | Environmental Screening Limit |
| FINDS | Environmental Protection Agency Facility Index System |
| GIS | Geographic Information System |
| HAZNET | Hazardous Waste Information System |
| HMMP | Hazardous Materials Management Plan |
| HSLA | Hazardous Substance Liability Assessment |
| HSWA | Hazardous and Solid Waste Amendments |
| HWTS | Hazardous Waste Tracking System |
| HREC | Historical Recognized Environmental Condition |
| LBP | Lead-Based Paint |
| LDS | Land disposal sites listing |
| Locus | Locus Technologies |
| LUST | Leaking Underground Storage Tank |
| msl | Mean sea level |
| NOA | Naturally Occurring Asbestos |
| NONGEN | Non-Generators |



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| ACRONYM | DESCRIPTION |
|---|---|
| NPDES | National Pollutant Discharge Elimination System |
| NPL | National Priorities List |
| OEHHA | Office of Environmental Health Hazard Assessment |
| PCB | Polychlorinated Biphenyls |
| PFAS | Per- and Poly-Fluoroalkyl Substances |
| RCRA | Resource Conservation and Recovery Act |
| REC | Recognized Environmental Condition |
| RESPONSE | Database that identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. |
| RWQCB | Regional Water Quality Control Board |
| SLIC | Spills, Leaks, Investigations, and Clean-Ups |
| SQG | Small Quantity Generator |
| SWEEPS UST | Statewide Environmental Evaluation and Planning System Underground Storage Tank |
| SWF/LF | Solid Waste Facility/Landfill |
| SWRCB | State Water Resources Control Board |
| USGS | United States Geological Survey |
| UST | Underground Storage Tank |
| Valley Water | Santa Clara Valley Water District |



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| ACRONYM | DESCRIPTION |
|---|---|
| VOC | Volatile Organic Compounds |
| VCP | Voluntary Cleanup Program |
| WDS | Water Discharge System |



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# Executive Summary

At the request of Santa Clara Valley Water District (Valley Water), Locus Technologies (Locus) conducted this Hazardous Substance Liability Assessment (Phase 1 HSLA) for the parcel located at 3959 Whitman Way, San Jose, California, APN 595-04-072 (Figure 1) (Subject Property), for the Penitencia Water Treatment Plant (PWTP) Residuals Management Project. The Subject Property is a 21.6-acre property comprised of the PWTP, which is owned by Valley Water. Valley Water's intent for performing this Phase 1 HSLA on the Subject Property is for the removal and replacement of the existing water treatment plant residuals management facilities, which includes demolition, excavation, and construction. This Phase 1 HSLA will be used by Valley Water to inform and support preparation of other environmental documents for the PWTP Residuals Management Project.

The Subject Property is on a hillside at the base of the Diablo range. The maximum elevation of the Subject Property is 472 feet above mean sea level (msl), and the elevation of the residuals management project site is at approximately 380 feet above msl. Adjoining Properties to the north and east of the Subject Property include rural rangeland. Residential neighborhoods are present to the south and west of the Subject Property.

On 18 July 2023, Locus conducted a site inspection of the Subject Property, and met with property representatives, including John Cook who has tenure with Valley Water and holds the title of Water Treatment Supervisor. According to Mr. Cook, the water treatment plant uses approximately 14 chemicals that are considered hazardous in their delivered concentrations. Diesel generators and fuel tanks are present at the Subject Property. These appeared in good condition with secondary containment; however, the facility began operations in 1974, and there is potential for a history of unknown diesel fuel leaks.

Valley Water personnel noted that during a previous project, serpentine rock was discovered at the property. These rocks may contain naturally occurring asbestos (NOA). A 1999 asbestos



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survey by Harding Lawson Associates of the property revealed that the transited panels in the roof eaves, olive floor tiles in the upper-level control room and exhaust insulation in the utility storage building contained various concentrations of Chrysotile (white asbestos). Mr. Cook stated that the floor tiles and roof eaves were replaced during a 2017 retrofit. Locus considers the potential presence of asbestos to be a REC. A 2000 lead survey by Harding Lawson Associates of the property revealed that the green paint on the flow meter and the beige paint chip on the flange contained 826 ppm of PBC-05 and 193 ppm of PBC-06 respectively. Dust in the pipe gallery, generator room and maintenance shop were also found to have lead. Locus considers the potential presence of lead to be a REC.

Of the 50 total listings within a one-mile radius of the Subject Property, the majority (34 database listings) were associated with the subject property, many of which are cross-listed.

There is one listing for a former LUST cleanup site associated with the PWTP (although due to an address change, this listing shows up as being 0.16 miles from the Subject Property). On July 22, 1986, a fuel leak from a 4,000-gallon diesel tank used to fuel vehicles was reported. A soil sample at the midpoint of the tank contained 41 mg/kg of total petroleum hydrocarbons. The case was closed in 1990 after the monitoring wells revealed that the leak did not pose a threat to groundwater. Locus considers this to be an HREC with respect to the potential migration of petroleum products into the soil, soil vapor, and groundwater underlying the property.

There are multiple listings associated with chemical spills at the PWTP. These include the following: in 2012, a pipeline break at PWTP caused the release of 9,000 gallon of chlorinated drinking water to a storm drain to Penitencia Creek which flows to San Francisco Bay. Dechlorination mats were deployed at the mouth of the storm drain during the release. This is listed under CHMIRS; in 2013, a ball valve ruptured during maintenance causing the release of



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5,000 gallons of Sodium Hypochlorite, 12.5% concentration. The material flowed onto concrete in a secondary containment area, ACT handled containment and clean up. Given that the PWTP has operated since the 1970s, Locus considers the potential for historic chemical spills to be a REC with respect to the Subject Property. There is potential for migration of these chemicals into the soil, soil vapor, and groundwater underlying the Subject Property.

In 1999, the disposal of materials containing Asbestos and PCBs at the Santa Clara Valley Water district at 3959 Whitman Way, was reported. It is listed under the HWTS and HAZNET databases. The case was inactivated by the Department of Toxic Substances Control in February 2000. (DTSC, 2023). This case was also reported in the lead and asbestos survey reports by Harding Lawson Associates that Valley Water provided to Locus. Further discussion of these reports is presented in section 3. This is a REC with respect to the presence of hazardous building materials. The subject property is also listed under CERS due to several regulation violations, which were later brought back to code.

There are 16 listings in a one-mile radius of the Subject Property that have negligible to limited potential to impact the Subject Property for being hydraulically downgradient and/or distantness. The majority of the database listings are a business or entity that comes under RCRA NONGEN.

San Jose Water Company-Dutard Station, located on 992 Noble Avenue (0.381miles from the subject property), is a former ENVIROSOTR cleanup site. Elemental mercury was found at the Site during construction work. The site was contaminated with elemental mercury in soil at concentrations that exceed the California Human Health Screening Levels and U.S. Environmental Protection Agency Regional Screening Levels. In 2010, the Mercury impacted soil was excavated to below Site cleanup goal. Locus considers the potential migration of priority



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pollutant metals into the soil, soil vapor, and groundwater underlying the property to be a REC with respect to the Subject Property.

The records review located 6 active and former water wells within a 1-mile radius of the Subject Property. The closest water well was on Noble Avenue and is approximately 734 feet from the property. These wells are no longer sampled. All wells are periodically monitored under the applicable local or regional agency oversight. As such, the wells do not raise environmental concern with respect to the Subject Property.

Historic aerial photographs show that land use around the Subject Property was heavily agricultural, from as early as 1939 until around 1968. The adjoining parcels were also used for agriculture from as early as 1939 to between 1968 and 1974, when residential development began. Due to the agricultural use of the Subject Property over an approximate 29-year period, there is a strong likelihood that the land on and surrounding the Subject Property was applicated with agricultural chemicals such as pesticides and herbicides, including during a period when related material management and handling operations were unregulated (pre-1970s). Thus, Locus cannot eliminate the potential for adversely impacted shallow soil of Subject Property. This historical agricultural land use constitutes a REC in connection with the Subject Property.

Locus revealed the following in this Phase 1 HSLA inquiry:

1) One REC with respect to the release of chemicals involved in the water treatment process at the Subject Property and the potential migration of Sodium Hypochlorite and other halogenated VOCs into the soil, soil vapor, and groundwater underlying the Subject Property.
2) One REC with respect to the former ENVIROSOTR Cleanup Program due to Mercury at San Jose Water Company-Dutard Station, located on 992 Noble Avenue and the potential



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migration of priority pollutant metals into the soil, soil vapor, and groundwater underlying the Subject Property.

3) One HREC with respect to the former diesel LUST Cleanup Program site Penitencia water treatment plant, located on 3559 Whitman Way and the potential migration of petroleum products into the soil, soil vapor, and groundwater underlying the Subject Property.
4) One REC with respect to hazardous building materials. Hazardous materials such as asbestos may be present within construction materials due to previous findings.
5) One REC with respect to naturally occurring chrysotile asbestos, which may be present due to weathering of the serpentine rock, during excavation work.
6) One REC with respect to lead due to previous findings and the fact that the treatment system was built before lead paint was regulated (pre-1978), and the potential migration of priority pollutant metals into the soil, soil vapor, and groundwater underlying the Subject Property.
7) One REC with respect to the historical agricultural land use of the area. Due to agricultural use of the Subject Property over an approximate 29-year period there is a strong likelihood that the land on and surrounding the Subject Property was applicated with agricultural chemicals such as pesticides and herbicides, including during a period when related material management and handling operations were unregulated (pre-1970s).

Upon consideration of the findings of this Phase 1 HSLA, Locus recommends the following with respect to the Subject Property:

1) A limited Phase 2 subsurface investigation at the Subject Property to test, see details below:
    a) Soils, groundwater, and soil vapor for petroleum hydrocarbons, associated with the former LUST cleanup sites.
    b) Soils, groundwater, and soil vapor for priority pollutant metals associated with mercury from the former ENVIROSTOR cleanup site at 992 Noble Avenue.



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c) Soils, groundwater, and soil vapor for VOCs, halogenated VOCs and other chemicals associated with the water treatment process.

d) Shallow soils for pesticides and herbicides associated with historical agricultural land use.

e) Hazardous materials facilities survey to test for lead and naturally occurring Chrysotile asbestos and asbestos.

In the short-term, the results of this investigation should be compared against any applicable local, state, and federal guidelines, for example, RWQCB Environmental Screening Limits (ESLs), DTSC limits, and applicable hazardous materials standards, to ensure Valley Water employees and contractors are working in a safe environment during field activities. Other ESLs should be considered in relation to Valley's Water's intended long-term use and/or occupancy of the Subject Property.

Locus recommends that Valley Water perform a soil and groundwater quality investigation to evaluate subsurface conditions in any proposed excavation or construction area to evaluate potential impacts to Valley Water's proposed use of the Subject Property, including evaluation of soil management options for materials produced during exaction and construction and potential health and safety impacts to Valley Water workers. A typical investigation would consist of collecting representative soil and groundwater samples from three borings advanced in the proposed construction area of the Subject Property. One boring should be located adjacent to the Solids Handling and Dewatering facility to evaluate potential impacts related to its operations, off-site migration, and previous site uses, one boring should be located adjacent to the Washwater Handling and Treatment facility to evaluate potential impacts related to its operations, off-site migration, and previous site uses and the third boring should be located adjacent to the Sedimentation Basis Sludge Withdrawal facility to evaluate potential impacts related to its operations, off-site migration and previous site uses. Soil samples will be collected by direct push technologies at depths of 1, 5, and 25 feet below ground surface or before first encounter



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to groundwater. They should be analyzed for petroleum hydrocarbons (including gasoline, diesel, and oil), VOCs, polychlorinated biphenyls, semi-volatile organic compounds, PCBs, organochlorine pesticides, metals, and asbestos. If groundwater is encountered prior to the final depth, then a groundwater sample should be taken. Groundwater samples collected from the borings should be analyzed for petroleum hydrocarbons, VOCs, dissolved metals, and pH. Typical costs for an investigation of this type are in the range of $30,000 to $40,000.

Unless otherwise advised, recommendations included in the Phase 1 HSLA are not conditional to property transactions. Recommendations that call for additional investigation assist the user in making informed business decisions about the property. With regard to Superfund liability, the additional investigation would provide the user with a level of knowledge to satisfy the innocent landowner's defense under CERCLA.



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# 1. Introduction

At the request of Santa Clara Valley Water District (Valley Water), Locus Technologies (Locus) conducted this Hazardous Substance Liability Assessment (Phase 1 HSLA) for the Subject Property located at 3959 Whitman Way, San Jose, California, APN 595-04-072 (Figure 1). Phase 1 HSLA was conducted in general accordance with the approved scope of work dated 22 May 2023 and ASTM International (ASTM) Standard E1527-21.

The Subject Property is a 21.6-acre property comprised of the Penitencia Water Treatment Plant (PWTP) owned by Valley Water. Valley Water's intent for performing this Phase 1 HSLA on the Subject Property is for the removal and replacement of existing water treatment plant residuals management facilities, which includes demolition, excavation, and construction. This Phase 1 HSLA will be used by Valley Water to inform and support preparation of other environmental documents for the PWTP Residuals Management Project.

## 1.1. Scope of Work and Purpose

The purpose of an Phase 1 HSLA is to identify:

1) Recognized environmental conditions and controlled recognized environmental conditions associated with the historical use of the property.

2) Recognized physical conditions of buildings and adjacent grounds; and

3) Recognized present operational practices.

ASTM E1527-21 defines a recognized environmental condition (REC) as: "(1) the presence of hazardous substances or petroleum products in, on, or at the Subject Property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that



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pose a material threat of a future release to the environment. A de minimis condition is not a recognized environmental condition."

ASTM E1527-21 defines Historical Recognized Environmental Condition (HREC) as: "a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations). A historical recognized environmental condition is not a recognized environmental condition."

ASTM E1527-21 defines a Controlled Recognized Environmental Condition (CREC) as: "a recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations)."

ASTM E1527-21 defines a de minimis condition as a condition: "related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

ASTM E1527-21 defines a Business Environmental Risk (BER) as: "a risk which can have a material environmental or environmentally driven impact on the business associated with the current or planned use of commercial real estate, not necessarily related to those environmental issues required to be investigated in this practice. Consideration of BER issues may involve addressing one or more non-scope considerations."

A Phase 1 HSLA consists of four general components: (1) a records review, (2) a site reconnaissance, (3) interviews, and (4) a report. This assessment report contains the results of reconnaissance of



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the Subject Property and surrounding properties, interviews, and a review of property, government, and historical records. Information used to complete the Phase 1 HSLA was reasonably ascertainable and physically observable.

Recommendations included in the Phase 1 HSLA are not conditional to property transactions. Recommendations that call for additional investigation assist the user in making informed business decisions about the property. With regard to Superfund liability, the additional investigation would provide the user with a level of knowledge to satisfy the innocent landowner's defense under CERCLA.

### 1.1.1. Special Terms and Conditions

Except as specified below, this document has been prepared by Locus solely for the use and benefit of Valley Water. Upon approval by Valley Water, Locus will provide express written consent to rely on this document to other entities requested by Valley Water. Any use of this document or information herein by persons or entities other than Valley Water, without the express written consent of Locus, will be at the sole risk and liability of said person or entity, and Locus will not be liable to Valley Water, or such persons or entities, for any damages resulting therefrom. It is understood that this document may not include all information pertaining to the described properties.

### 1.1.2. Limitations and Exceptions of Phase 1 HSLAs

ASTM E1527-21 acknowledges that "No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property." The Phase 1 HSLA "is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property, and this practice recognizes reasonable limits of time and cost." Furthermore, the ASTM E1527-21 states that "There is a point at which the cost of information obtained, or the time required to gather it



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outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions."

### 1.1.3. Personnel Performing Phase 1 HSLAs and Qualifications

The qualifications of the environmental professional completing this Phase 1 HSLA, as defined by 40 CFR § 312.10, are presented in Appendix A. This Phase 1 HSLA was completed by the following Locus personnel:

1) Urmika Venkateshwaran, Environmental Engineering Assistant, Report Preparation.
2) David Wright, Senior Project Manager and Client Liaison, Technical Reviewer and Environmental Professional.
3) Nancy-Jeanne LeFevre, P.E., Senior Project Quality Assurance / Quality Control Manager and Environmental Professional, Technical Reviewer.

### 1.1.4. Phase 1 HSLA User Responsibilities

Section 6 of ASTM E1527-21 outlines the responsibilities of the user of an Phase 1 HSLA to assist in the identification of potential recognized environmental conditions. These responsibilities include the following:

1) A review of reasonably ascertainable land title records and liens that might be recorded against the property. These might include environmental liens, or activity and use limitations (deed recordations and/or deed restrictions). As part of this Phase 1 HSLA, Locus has not been notified of any such liens or restrictions. The site is present on an active landslide site, the Penitencia Creek Landslide. The Penitencia Creek landslide is a creeping landslide that probably developed about 18,000 to 20,000 years ago and is still active. The existing landslide occupies about 240 acres of land that includes the Valley Water's PWTP, DWR's Terminal Reservoir, and San Jose Water Company's Dutard Reservoir. Because the plant is essentially moving as a unit with the landslide, very little differential



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movement is occurring. This explains why very limited structural damage has occurred at the plant since its original construction in 1973/74 (Thomas et al., 2019).

2) Communication to the environmental professional of any specialized knowledge or experience, or other information that might be material to the identification of recognized environmental conditions. The specialized knowledge Valley Water communicated to Locus with respect to this Phase 1 HSLA was background information on their PWTP Residuals Management Project, including 1999 Asbestos Survey Report, 2000 Lead Survey Report, 2000 TM-Hazardous Materials, Fire Code and Air Quality Evaluation.
3) Consideration of the purchase price to the fair market value of the property assuming the property has not been contaminated through past usage. No information regarding the purchase price or fair market value was provided to Locus.

### 1.1.5. Phase 1 HSLA Disclaimers

Locus has performed this Phase 1 HSLA in general conformance with the scope and limitations of the ASTM standard and subject to the conditions and limitations noted herein and in the Site Assessment Terms and Conditions, which were included with the proposal. The information from the site reconnaissance is based on the conditions existing on the date of Locus' visit to the property. The findings and conclusions presented herein are professional opinions based solely on visual observations of the facility and vicinity, and interpretation of information provided or reasonably available to Locus. Past conditions were considered based on observations, readily available records, interviews, and recollections.

Locus does not warrant or guarantee the correctness, completeness, and/or present-day applicability of the information obtained from third parties contained in the environmental record sources and recollections used for this assessment. Such information is the product of independent investigation by parties other than Locus and/or information maintained by government agencies.



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Detailed indoor air quality, asbestos, lead-based paint (LBP), occupational health and safety, radon, and wetland surveys, were not requested, nor included, as part of this project with respect to Locus. As noted, Valley Water provided previously conducted asbestos and lead-based paint (LBP) surveys.

Information, limitations, and disclaimers provided in this general section apply to all the property-specific sections included in the remaining report.

## 1.2. Property Description

### 1.2.1. Geographical Location and Legal Description

The Subject Property is located at 3959 Whitman Way, San Jose, California and covers the parcel APN 595-04-072 (Figure 1). The recorded property size is 21.6 acres and is located within incorporated San Jose. The Subject Property is located on the eastern side of Santa Clara Valley about 5 miles northeast of downtown San Jose, California.

The Subject Property is situated on an approximately 240-acre creeping landslide known as Penitencia Creek Landslide (Valley Water, 2001a). Land use at the Subject Property is designated Public/Quasi-public (PQP) according to the City of San Jose's 2020 General Plan.

### 1.2.2. Current and Prior Property Uses

The Subject Property is comprised of the Penitencia Water Treatment Plant (PWTP) owned by Valley Water. The facility treats 42 million-gallon per day (MGD) and first began operations in 1974. Prior to its current use, records suggest the property was used for agriculture from 1939 until around 1968.

### 1.2.3. Current Uses of Adjoining Properties

The adjoining properties to the north and east of the Subject Property are rural rangeland. Residential neighborhoods are present to the south and west of the subject property.



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### 1.2.4. Physical Characteristics of the Property

#### 1.2.4.1.1. Topography and Surface Hydrology

Based on the most recent USGS historical topographic map of, the Subject Property elevation is approximately 415 feet above mean sea level (msl). The Subject Property is on a hillside and the top elevation is 472 feet above msl and the bottom elevation is 381 feet above msl. The proposed residuals management project will occur at the bottom location, which is at elevation 381 feet above msl. The local topography indicates sloping towards the Baylands of the San Francisco Bay.

#### 1.2.4.1.2. Geology

The subject property is situated within the Santa Clara Valley, east of the Santa Cruz Mountains in the State of California. The Santa Cruz Mountains are part of the Pacific Coast Ranges, which are northwest-trending mountain ranges (2,000 to 4,000, occasionally 6,000 feet elevation above sea level), and valleys. The ranges and valleys trend northwest, subparallel to the San Andreas Fault. Strata dip beneath alluvium of the Great Valley. To the west is the Pacific Ocean. The coastline is uplifted, terraced and wave-cut. The Coast Ranges are composed of thick Mesozoic and Cenozoic sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay and Santa Clara Valley. The northern Coast Ranges are dominated by irregular, knobby, landslide topography of the Franciscan Complex. The eastern border is characterized by strike-ridges and valleys in Upper Mesozoic strata. In several areas, Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma and Clear Lake volcanic fields. The Coast Ranges are subparallel to the active San Andreas Fault. The San Andreas is more than 600 miles long, extending from Point Arena to the Gulf of California. West of the San Andreas is the Salinian Block, a granitic core extending from the southern extremity of the Coast Ranges to the north of the Farallon Islands.



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#### 1.2.4.1.3. Hydrogeology

The Subject Property is located in the Santa Clara subbasin of the Santa Clara Valley groundwater basin. The water bearing formations of the Santa Clara subbasin include Pliocene to Holocene age continental deposits of unconsolidated to semi-consolidated gravel, sand, silt and clay. Two members form this group, the Santa Clara Formation of Plio-Pleistocene age and the younger alluvium of Pleistocene to Holocene age (DWR, 2004). Lithologic similarities make distinction between these two units difficult based on available boring data. The combined thickness of these two units probably exceeds 1,500 feet (DWR, 2004).

The Santa Clara Formation is of Plio-Pleistocene age and rests unconformably on impermeable base rock that marks the bottom of the groundwater subbasin (DWR, 2004). The Santa Clara Formation is exposed only on the west and east sides of the Santa Clara Valley. Where exposed, it is composed of poorly sorted deposits ranging in grain size from boulders to silt (DWR, 2004). Well logs indicate that permeability increases from west to east and that in the central part of the valley permeability and grain size decrease with depth (DWR, 2004).

Pleistocene to Holocene alluvium is the most important water bearing unit in the Santa Clara subbasin. The permeability of the valley alluvium is generally high and principally all large production wells derive their water from it (DWR, 2004). Comprised generally of unconsolidated gravel, sand, silt, and clay, it was deposited as series of convergent alluvial fans. It becomes progressively finer grained at the central portions of the valley. A confined zone is created in the northern portion of the subbasin where overlain by a low permeability clay layer (Valley Water, 2001b). The southern portion of the subbasin is generally unconfined and contains no thick clay layers (Valley Water, 2001b).

No local hydrogeological data within a search radius of 1 mile from the Subject Property was available for determining the depth to groundwater at the Subject Property. However, based on



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Valley Water's Historical Groundwater Elevation GIS Portal, the Subject Property is in a region of the Santa Clara Subbasin where the generalized depth to first groundwater 5-10 ft-bgs, with a hydraulic gradient to the south (Valley Water, 2023).

#### 1.2.4.1.4. Active Faulting and Seismicity

Information regarding faulting is based on digitized Quaternary fault lines prepared by the United States Geological Survey (USGS, 2023). The Southeast Extension of the Hayward fault (USGS Fault ID 55) is an active fault line roughly 4,500 feet northeast of the Subject Property.



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# 2. Records Review

Locus relied on the following reports provided by Environmental Data Resources, Inc. (EDR) for information provided in this section:

1) *Radius Map with GeoCheck®* – An electronic search of standard environmental record sources. This report contains certain information obtained from a variety of public and other sources reasonably available to EDR. A copy of the report is provided in Appendix C.
2) *Aerial Photo Decade Package* – Historical aerial photographs were provided from a variety of sources reasonably available to EDR. This package contains digitally reproduced aerial photographs which can identify past structural features on the site and assist in evaluating potential liability on a target property resulting from past activities. A copy of the report is provided in Appendix D.
3) *Historical Topographic Map Report* – Topographic maps were provided from a variety of sources reasonably available to EDR. This report shows both natural and man-made features and assists in evaluating potential liability on a target property resulting from past activities. A copy of the report is provided in Appendix E.
4) *Sanborn Map Report* – Sanborn Maps were not available for the Subject Property (Appendix F). This report contains fire insurance maps covering the target property, which can be used to estimate fire insurance liabilities.
5) *City Directory Abstract* – No historical directory listings for the Subject Property were available for addresses within the Subject Property and at nearby addresses (Appendix G).

Summaries of each of the standard environmental record source reviews are provided in Section 3.2 through 3.4.



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## 2.1. Physical Setting Review

### 2.1.1. Topography

Based on the most recent US Geological Survey (USGS) historical topographic map (2023), the Subject Property elevation is approximately 415 feet above mean sea level (msl). The site Subject Property is on a hillside and the top elevation is 472 feet above msl and the bottom elevation is 381 feet above msl. The proposed residuals management project will occur at the bottom location, which is at elevation 381 feet above msl. The local topography indicates sloping towards the Baylands of the San Francisco Bay.

### 2.1.2. Soil, Groundwater, Geology

According to the US Department of Agriculture's (USDA) National Resources Conservation Service (NRCS) Web Soil Survey (WSS), the dominant shallow soil types are Montara-Santerhill complex, 15 to 30 percent slope soils (303). The parent material of these soil types is primarily slope alluvium and Residuum weathered from serpentinite. Weathering of the serpentine rock may lead to naturally occurring chrysotile asbestos. Locus considers this to be a REC with respect to the threat of a future release to the environment due to the proposed subsurface excavation work as part of the residuals management project.

Regional groundwater flow direction in the vicinity is south (Valley Water, 2023).

The Subject Property is located along eastern boundary of the Santa Clara Valley where the bedrock consists of highly folded and faulted Jurassic-Cretaceous marine sedimentary rocks of the Berryessa Formation, and Miocene rocks of the Monterey Group and the Briones Formation. These rocks are in turn unconformably overlain by folded and poorly indurated, terrestrial clays, sands, and gravels of the Plio-Pleistocene Santa Clara Formation (Valley Water, 2001a). The PWTP is underlain by the well-documented Penitencia Creek Landslide, which presents geologic hazards with respect to the design and hillside development of the residuals management project.



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### 2.1.3. Wetlands

There are no state or federal wetlands within a 1-mile radius of the Subject Property.

### 2.1.4. Surface Water

Dr. Robert gross ponds associated with the Penitencia Creek water system is present approximately 0.8 miles south from the Subject Property.

## 2.2. Federal, State and Tribal Environmental Database Review

### 2.2.1. Database Listings

Based on EDR's search radius at and adjacent to the Subject Property, no database listings were associated with the Subject Property. There were 50 database listings recorded within an approximate 1-mile radius of the Subject Property in the databases searched. EDR's database search results are summarized in the table below.

| DATABASE | *LISTINGS BY SEARCH RADIUS* | | | |
|---|---|---|---|---|
| | SUBJECT PROPERTY | >0 – ¼ MI. | >¼ – ½ MI. | >½ – 1 MI. |
| CERS | 2 | 0 | 0 | 0 |
| CERS HAZ WASTE | 1 | 0 | 0 | 0 |
| CERS TANKS | 1 | 0 | 0 | 0 |
| CHMIRS | 3 | 0 | 0 | 0 |
| CIWQS | 3 | 0 | 0 | 0 |
| CORTESE | 0 | 2 | 0 | 0 |
| CUPA LISTINGS | 1 | 0 | 0 | 0 |
| ECHO | 2 | 0 | 0 | 0 |
| EMI | 1 | 0 | 0 | 0 |



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| DATABASE | *LISTINGS BY SEARCH RADIUS* | | | |
|---|---|---|---|---|
| | SUBJECT PROPERTY | >0 – ¼ MI. | >¼ – ½ MI. | >½ – 1 MI. |
| ENF | 1 | 0 | 0 | 0 |
| ENVIROSTOR | 0 | 1 | 0 | 0 |
| ERNS | 1 | 0 | 0 | 0 |
| FINDS | 2 | 0 | 0 | 0 |
| HAZMAT | 1 | 0 | 0 | 0 |
| HAZNET | 3 | 0 | 0 | 0 |
| HIST CORTESE | 0 | 0 | 1 | 0 |
| HIST LUST | 0 | 0 | 1 | 0 |
| HIST UST | 0 | 1 | 0 | 0 |
| HWTS | 5 | 0 | 0 | 0 |
| LUST | 0 | 2 | 0 | 0 |
| NPDES | 2 | 0 | 0 | 0 |
| RCRA NONGEN / NLR | 1 | 6 | 0 | 0 |
| RCRA-SQG | 2 | 0 | 0 | 0 |
| SWEEPS UST | 0 | 1 | 0 | 0 |
| UST | 2 | 0 | 0 | 0 |
| VCP | 0 | 0 | 1 | 0 |
| **TOTAL** | **34** | **13** | **3** | **0** |



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Of the 50 total listings within a one-mile radius of the Subject Property, the majority (34 database listings) were associated with the subject property, many of which are cross-listed.

There is one listing for a former LUST cleanup site associated with the PWTP (although due to an address change, this listing shows up as being 0.16 miles from the Subject Property). On July 22, 1986, a fuel leak from a 4,000-gallon diesel tank used to fuel vehicles was reported. A soil sample at the midpoint of the tank contained 41 mg/kg of total petroleum hydrocarbons. The case was closed in 1990 after the monitoring wells revealed that the leak did not pose a threat to groundwater. Locus considers this to be a REC with respect to the potential migration of petroleum products into the soil, soil vapor, and groundwater underlying the property.

There are multiple listings associated with chemical spills or chlorinated water spills at the PWTP. These include the following:

(1) A listing in the CHMIRS database for a 2012 pipeline break at PWTP that caused the release of 9,000 gallon of chlorinated drinking water the drain into Penitencia Creek which flows to San Francisco Bay. Dechlorination mats were deployed at the mouth of the storm drain during the release.

(2) A listing in the CHMIRS database for a ball valve rupture in 2013 during maintenance causing the release of 5,000 gallons of Sodium Hypochlorite, 12.5% concentration, to flow onto concrete in a secondary containment area, which ACT handled through containment and clean up.

(3) A listing in the CHMIRS database for a 2015 mechanical failure that resulted in the release of approximately 250 gallons of chlorinated drinking water into a storm drain which leads to Sierra Creek.



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Given that the PWTP has operated since the 1970s, Locus considers the potential for historic chemical spills to be a REC with respect to the Subject Property. There is potential for migration of these chemicals into the soil, soil vapor, and groundwater underlying the Subject Property.

There is one listing from 1999 in the HWTS and HAZNET databases for the disposal of materials containing Asbestos and PCBs at the Santa Clara Valley Water district at 3959 Whitman Way was reported. The case was inactivated in February 2000. This case was also reported in the lead and asbestos survey reports that Valley Water provided to Locus (HLA 1999, HLA 2000, TMS 2000). Further discussion of these reports is presented in Section 3. This is a REC with respect to the presence of hazardous building materials. The subject property is also listed under CERS due to several regulation violations, which were later brought back to code and have limited environmental risk to the Subject Property.

There are 16 listings in a one-mile radius of the Subject Property that have negligible to limited potential to impact the Subject Property for being hydraulically downgradient and/or distantness. The majority of the database listings are a business or entity that comes under RCRA NONGEN.

Notably, there are two former cleanup sites. Sid Sakane property, located on 1039 Noble Avenue (1,700 feet southwest of the subject property), is also a former LUST cleanup site. On October 3, 1995, holes were observed in a 350-gallon gasoline tank. At the time, the tank had not been in operation for fifteen years. A potential leak was reported. Discolored soil and significant levels of contamination were present, 260 ppm of total petroleum hydrocarbons was reported in the soil below the tank. After excavation of contaminated soil and backfilling with clean soil, the case was closed in 1995. However, since this site is hydraulically downgradient from the subject property, Locus considers this to be low concern with respect to the residuals management project at the Subject Property.



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San Jose Water Company-Dutard Station, located on 992 Noble Avenue (2,000 feet upgradient from the subject property), is a former ENVIROSOTR cleanup site. Elemental mercury was found at the site during construction work to replace an altitude valve box. Upon discovery of mercury within the excavation, work was halted, and the excavation covered. The mercury likely originated from the altitude valve control mechanism used at this facility many decades ago. It is not known how or when the mercury was released from the valve control. The site was contaminated with elemental mercury in soil at concentrations that exceed the California Human Health Screening Levels and U.S. Environmental Protection Agency Regional Screening Levels. In 2010, the Mercury impacted soil was excavated to below Site cleanup goal. Locus considers the potential for similar unknown spills of mercury and/or the migration of priority pollutant metals into the soil, soil vapor, and groundwater underlying the property to be a REC with respect to the Subject Property.

### 2.2.2. Water Wells

The records review located 6 active and former water wells within a 1-mile radius of the Subject Property. The closest water well was on Noble Avenue and is approximately 730 feet from the property. These wells are no longer sampled. All wells are periodically monitored under the applicable local or regional agency oversight. As such, the wells do not raise environmental concern with respect to the Subject Property. Refer to Section 5.2 for findings associated with these wells.

Locus did not identify water wells on the Subject Property. Refer to Section 3.4 for further details.

### 2.2.3. Oil Production

No oil wells are located within a 1-mile radius of the Subject Property.



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## 2.3. Historical Records Review

### 2.3.1. Aerial Photographs

Aerial photographs were provided by EDR (EDR, 2023). Copies of the aerial photographs are included in Appendix D. The aerial photographs were reviewed to evaluate development on the Subject Property and adjacent properties.

| YEAR | DESCRIPTION |
|---|---|
| 1939 | Subject Property: The Subject property appears to be agricultural land, presumably for orchards.<br>Adjacent Properties: The surrounding area is mostly undeveloped. Some areas are agricultural land, presumably for orchards. Trees are scattered throughout the area. |
| 1940 | Subject Property: Similar to the 1939 photo.<br>Adjacent Properties: Similar to the 1939 photo. |
| 1948 | Subject Property: The agricultural land has expanded and appears to be more structured.<br>Adjacent Properties: Similar to the 1939 photo. |
| 1950 | Subject Property: The resolution of this photo is lesser than the 1948 photo. What is seen appears similar to the 1948 photo.<br>Adjacent Properties: Similar to the 1948 photo. |
| 1956 | Subject Property: Similar to the 1950 photo.<br>Adjacent Properties: Similar to the 1950 photo. |
| 1963 | Subject Property: Similar to the 1956 photo.<br>Adjacent Properties: Residential neighborhoods have been developed to the south and the west of the subject property. |
| 1968 | Subject Property: Agriculture is no longer present. A cylindrical tank is at the subject property.<br>Adjacent Properties: More residential development to the south and west. |



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| YEAR | DESCRIPTION |
|---|---|
| 1974 | Subject Property: There is a resolution issue with this photograph, only the top half of the photograph can be seen. What is seen is a water treatment plant at the subject property.<br>Adjacent Properties: There is a resolution issue with this photograph, only the top half of the photograph can be seen. What is seen is residential development to the northwest and southwest of the property. |
| 1979 | Subject Property: There is a resolution issue with this photograph; a part of the right side of the photo is blacked out. What is seen appears to be similar to the 1974 photo.<br>Adjacent Properties: There is a resolution issue with this photograph; a part of the right side of the photo is blacked out. What is seen appears to be similar to the 1974 photo, the north of property (which was blacked out in the previous photo) appears to be rangeland. |
| 1982 | Subject Property: Similar to 1979 photo.<br>Adjacent Properties: Three water bodies are seen to the southwest, within the 1-mile radius of the property. |
| 1993 | Subject Property: Similar to 1982 photo.<br>Adjacent Properties: Similar to 1982 photo. |
| 1998 | Subject Property: Similar to the 1991 photo.<br>Adjacent Properties: Similar to the 1991 photo. |
| 2006 | Subject Property: Similar to the 1998 photo.<br>Adjacent Properties: Similar to the 1998 photo. |
| 2009 | Subject Property: Similar to the 2006 photo.<br>Adjacent Properties: Similar to the 2006 photo. |
| 2012 | Subject Property: Similar to the 2009 photo.<br>Adjacent Properties: Similar to the 2009 photo. |



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| YEAR | DESCRIPTION |
|---|---|
| 2016 | Subject Property: Similar to the 2012 photo.<br>Adjacent Properties: Similar to the 2012 photo. |
| 2020 | Subject Property: Similar to the 2016 photo.<br>Adjacent Properties: Similar to the 2016 photo. |

Historic aerial photographs show that land use around the Subject Property was heavily agricultural, from as early as 1939 until around 1968. The adjoining parcels were also used for agriculture from as early as 1939 to between 1968 and 1974, when residential development began. Due to the agricultural use of the Subject Property over an approximate 29-year period, there is a strong likelihood that the land on and surrounding the Subject Property was applicated with agricultural chemicals such as pesticides and herbicides, including during a period when related material management and handling operations were unregulated (pre-1970s). Thus, Locus cannot eliminate the potential for adversely impacted shallow soil of Subject Property. This historical agricultural land use constitutes a REC in connection with the Subject Property.

### 2.3.2. Topographic Maps

Historic topographic maps were provided by EDR (EDR, 2023). Copies of the topographic maps are included in Appendix E. The topographic maps were reviewed to evaluate development on the Subject Property and adjacent properties. No RECs were identified based on Locus' review of historical topographic maps. The review is summarized below:

| YEAR | DESCRIPTION |
|---|---|
| 1889 | Subject Property: There appears to be no development in the subject property.<br>Adjacent Properties: There are some roads nearby |



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| YEAR | DESCRIPTION |
|---|---|
| 1897 | Subject Property: Similar to the 1889 photo.<br>Adjacent Properties: Similar to the 1889 photo. |
| 1899 | Subject Property: Similar to the 1897 photo.<br>Adjacent Properties: Similar to the 1897 photo. |
| 1953 | Subject Property: There is agricultural land at the subject property.<br>Adjacent Properties: There is agricultural land to the west and south of the subject property. |
| 1961 | Subject Property: Similar to the 1953 photo.<br>Adjacent Properties: A denser road network is seen to the south of the property. |
| 1968 | Subject Property: Similar to the 1961 photo.<br>Adjacent Properties: Residential buildings and more roads have been constructed on the properties to west and south of the subject property. |
| 1973 | Subject Property: Similar to the 1968 photo.<br>Adjacent Properties: The road network has fully expanded on the entire west and south side adjoining the subject property. |
| 1980 | Subject Property: The water treatment plant is seen in the subject parcel.<br>Adjacent Properties: Similar to the 1973 photo. |
| 2012 | Subject Property: Similar to the 1980 photo.<br>Adjacent Properties: Road names are seen for all the adjoining land. |
| 2015 | Subject Property: Similar to the 2012 photo.<br>Adjacent Properties: Similar to the 2012 photo. |
| 2018 | Subject Property: Similar to the 2015 photo.<br>Adjacent Properties: Similar to the 2015 photo. |



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### 2.3.3. Sanborn Map

No Sanborn Maps are reported to exist for the Subject Property, according to EDR (EDR, 2023). This report contains fire insurance maps covering the target property, which can be used to estimate fire insurance liabilities. The certified report is included in Appendix F.

### 2.3.4. City Directory Records

The EDR City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. The City Directory Abstract includes a search and abstract of available city directory data at and surrounding the Subject Property. For each address, the directory lists the name of the corresponding occupant at five-year intervals. Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five-year intervals for the years spanning 1922 through 2020.

The Subject Property at 3959 Whitman way, in San Jose, CA is presently occupied by the Penitencia Water Treatment Plant. There is no indication in the City Directory Abstract results for the Subject Property that indicate an occupant that would have had adversely affect the Subject Property.

The surrounding properties appear to be mostly associated with private single-family and multi-family residents. There is one potential listing that could adversely affect the subject property and it is Ribbs Felix Plumbing and Heating located at 1065 Vista Del Mar Street IN 1996. Overall, the city directory findings reflect those from the EDR database listings.

The City Directory Abstract is included in Appendix G.

### 2.3.5. Chain of Title Records

A chain-of-title report, which records the historical transfers of title to a property, was not provided by Valley Water. Review of chain-of-title records are not a required component of completing a Phase 1 HSLA, per ASTM E1527-21.



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### 2.3.6. Previously Prepared Environmental Reports

Previously prepared reports (Phase 1 or Phase 2 Environmental Site Assessments) were not provided by Valley Water, nor were they available for review on RWCQB's GeoTracker database or DTSC's Envirostor database.

### 2.3.7. Interview with Property Owner and/or Property Representative

On 18 July 2023, Locus met with Valley Water representative John Cook, Water Treatment Supervisor, who has tenure with the facility and was able to answer many of the questions on the questionnaire, refer to Appendix B. According to Mr. Cook, the water treatment plant uses approximately 14 chemicals that are considered hazardous in their delivered concentrations. Mr. Cook referred Locus to the Hazardous Business Plan (HMBP) that contains the local Certified Union Program Agencies (CUPA). He mentioned that waste oils from pumps and motors, which exceed 5 gallons, are stored in an approved storage facility until off hauled by a vendor. Mr. Cook noted that there are vent pipes, fill pipes and access ways at the chemical bulk storage tanks. He also mentioned that the adjacent properties have been used for residential purposes to the best of his knowledge. The complete notes from the on-site interview are available in Appendix B.

## 2.4. Local Agency Records Review

### 2.4.1. Santa Clara County

Locus searched the Santa Clara County Insite Portal, which is a search engine for permits and correspondence associated with planning, development, encroachment, and enforcement. The searches for the Subject Property using APN 595-04-072 did not return any result.

### 2.4.2. City of San Jose

Locus searched the City of San Jose's permit search tool for past and current permits issued on the Subject Property using APN 595-04-072 and the search returned 75 permit results from 1906-2022. The types of permits include new construction, alteration or repair, tenant improvement, site work, tree removals, zoning verification letters, customer service requests,



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over the counter, hazardous materials, new installations, grading and drainage, geologic clearance, fire protection, development permit (legacy), commercial/industrial and all other permits. The permits of interest are hazardous materials and geologic clearance. The hazardous material permits involve new installations, alterations and repairs and removals. Examples of these are installation of a tank liner in a 16,000-gallon sodium hypochlorite tank (tank 3) in 2013, installation 6100-gallon tanks for flurosilic acid storage and piping system in 2016, ammonia hydroxide tank modification in 2017, closure of a 7050-gallon polymer tank and removal of old potassium permanganate equipment.

### 2.4.3. Santa Clara County Department of Environmental Health

Fuel Leak Site Activity Reports are no longer maintained by Valley Water. The Fuel Leak Program was transferred to the Santa Clara County Department of Environmental Health (DEH) who maintains the most up-to-date information on fuel leak cases. The DEH uploads all case files to the GeoTracker environmental database (https://geotracker.waterboards.ca.gov/). The search for the Subject Property showed a former LUST cleanup site due to a leaking diesel tank at 3559 Whitman Way, which is discussed in Section 2.2.1.



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# 3. Site Reconnaissance

## 3.1. Site Inspection Summary

On 18 July 2023, Locus conducted a walk-through inspection of the Subject Property. Locus met with Valley Water representatives John Cook, Water Treatment Supervisor, Donnalyn Steffani, Assistant Engineer, and Jonathan Lamb, Water Plant Supervisor at the Subject Property. The weather conditions were sunny and clear. Land use around the Subject Property is currently residential and rural rangeland. The site visit focused on the project area at the southwest portion of the treatment plant, shown in Figure 2.

Currently, there are three areas on the Subject Property that will be included in the residuals management Project. These are the solids handling and dewatering pits, the two filter wash water handling and treatment pits, and the sludge management building. Locus was allowed to capture limited photographs of the facility due to safety concerns.

## 3.2. Heating and Cooling

There were heating and cooling structures present in the sludge management building of the property. A mini split air conditioner and wall heater for the office.

## 3.3. Air Emission

No air emissions issues are expected for this area.

## 3.4. Potable Water

Potable water is supplied by PWTP.

## 3.5. Pits, Pools or Lagoons

The residuals management facility consists of two main areas. The solids handling and dewatering pits are located at the western end of PWTP, and the wash water handling and treatment facilities at the southeastern part of the treatment plant. Valley Water personnel



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described the construction materials of the existing ponds to be asphalt with an Endura-Flex coating.

## 3.6. Storm Water and Wastewater

Storm water is expected to drain in accordance with natural elevational gradient to the south of the Subject Property. The PWTP site's surface runoff goes to the city's storm water drain and is monitored periodically by the City of San Jose. There are sanitary sewer lines on the Subject Property.

## 3.7. Solid Waste

Solid waste is generated at the residuals management facilities at the Subject Property. The waste is dewatered sludge that is disposed off-site and carried away by trucks. No issue with debris, such as improper storage or disposal of potentially hazardous materials, on the Subject Property was noted.

## 3.8. Hazardous Waste

No hazardous waste was observed during the site reconnaissance.

## 3.9. Chemical Use and Storage

There are many areas of the PWTP that Locus did not have access to that may use and store chemicals. Near the residuals management facilities, there were five 5,000-gallon anionic polymer solution storage tanks present. Sodium hypochlorite (12.5%) solution storage tanks and ozone gas generators were also present in various areas of the facility. They appeared to be in good condition.



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## 3.10. Storage Tanks

Diesel generators and fuel tanks were present at the Subject Property. These appeared in good condition with secondary containment, however, the facility is old and there is potential for unidentified diesel fuel leaks since the treatment plant began operations in the 1970s.

## 3.11. PCB-Containing Equipment

No obsolete electrical equipment, or other equipment that could potentially contain polychlorinated biphenyls (PCBs) was observed on-site.

## 3.12. Asbestos-Containing Materials (ACM)

A 1999 asbestos survey of the Subject Property provided to Locus by Valley Water revealed that the transite panels in the roof eaves, olive floor tiles in the upper-level control room, and exhaust insulation in the utility storage building contained various concentrations of Chrysotile (white asbestos). Mr. Cook stated that the floor tiles and roof eaves were replaced during a 2017 Penitencia Delivery Main and Penitencia Force Main Seismic Retrofit Project. Given that the treatment system was built during a time when asbestos was unregulated (early 1970s), Locus considers the potential presence of asbestos pipe insulation, plaster on pipe elbows and couplings, pipe connection hardware, and in other potential building materials to be a REC with respect to the subject property.

Valley Water personnel noted that during a previous project at the Subject Property, serpentine rock was discovered to contain naturally occurring asbestos. As noted in Section 2.1.2, this is a REC with respect to excavations proposed as part of the residuals management project.

## 3.13. Lead-Based Paint

A 2000 lead survey of the property revealed that the green paint on the flow meter and the beige paint chip on the flange contained 826 ppm of PBC-05 and 193 ppm of PBC-06 respectively. Dust in the pipe gallery, generator room and maintenance shop were also found to have lead.



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Given that the treatment system was built before lead paint was regulated (pre-1978), Locus considers the potential presence of lead in building materials to be a REC.

## 3.14. Radon

No radon issue is expected for this area.

## 3.15. Fluorescent Lights

No fluorescent lights were observed on the Subject Property.

## 3.16. Indoor Air Quality Issues

No indoor air quality issues are expected for the Subject Property.

## 3.17. Monitoring Wells, Vent Pipes, Manhole Covers

Several infrastructure access points were present on site. They appeared to be well maintained and in good condition.

## 3.18. Stained Soil or Pavement

No surface stains were observed during the site inspection.

## 3.19. Stressed Vegetation

Water stressed grass was observed at the subject property.

## 3.20. Odors

No strong, pungent, or noxious odors were detected during the property visit.

## 3.21. Other

Valley Water personnel explained to Locus that the final design of the Residuals Management Project is not yet complete. Valley Water pointed out the potential project areas, however they were unsure of the excavation depths. Locus was not permitted to take photographs of the entire project area due to safety concerns.



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# 4. Exceptions, Deletions, and Gaps

Locus has performed this Phase 1 HSLA in general conformance with the scope and limitations of ASTM E1527-21 for the Subject Property located at 3959 Whitman Way, San Jose, California, APN 595-04-072. No exceptions to, or deletions from, this practice were made.



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# 5. Findings, Conclusion, and Recommendations

## 5.1. Property Description Findings

The following is a summary of findings related to the Property Description in Section 1.2:

1) At the request of Santa Clara Valley Water District (Valley Water), Locus Technologies (Locus) conducted this Hazardous Substance Liability Assessment (Phase 1 HSLA) for the parcel located at 3959 Whitman Way, San Jose, California, APN 595-04-072. The Phase 1 HSLA was conducted in general accordance with the approved scope of work dated 28 November 2022 and ASTM International (ASTM) Standard E1527-21.
2) The Subject Property is a 21.6-acre property comprised of the Penitencia Water Treatment Plant (PWTP) owned by Valley Water. Land use around the Subject Property is currently residential and rural rangeland.

## 5.2. Records Review Findings

The following is a summary of findings related to the Records Review described in Section 2:

1) Of the 50 total listings within a one-mile radius of the Subject Property, the majority (34 database listings) were associated with the subject property, many of which are cross-listed. There is one LUST listing associated with a leaking diesel tank, Locus considers this a HREC with respect to the potential migration of petroleum products into the soil, soil vapor, and groundwater underlying the property to be a REC with respect to the Subject Property.

   Penitencia treatment plant (0.157 miles from subject property) is a former LUST cleanup site. On July 22, 1986, a fuel leak from a 4000-gallon diesel tank was reported. A soil sample at the midpoint of the tank contained 41 mg/kg of total



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petroleum hydrocarbons. The case was closed in 1990 after the monitoring wells revealed that the leak did not pose a threat to groundwater.

There are multiple listings associated with chemical spills at the PWTP. These include the following: in 2012, a pipeline break at PWTP caused the release of 9,000 gallon of chlorinated drinking water to a storm drain to Penitencia Creek which flows to San Francisco Bay. Dechlorination mats were deployed at the mouth of the storm drain during the release. This is listed under CHMIRS; in 2013, a ball valve ruptured during maintenance causing the release of 5,000 gallons of Sodium Hypochlorite, 12.5% concentration. The material flowed onto concrete in a secondary containment area, ACT handled containment and clean up. This is listed under the CHMIRS database; and in 2015, a mechanical failure resulted in the release of approximately 250 gallons of chlorinated drinking water into a storm drain which leads to Sierra Creek. This is listed under the CHMIRS database. Given that the PWTP has operated since the 1970s, Locus considers the potential for historic chemical spills to be a REC with respect to the Subject Property. There is potential for migration of these chemicals into the soil, soil vapor, and groundwater underlying the Subject Property.

In 1999, the disposal of materials containing Asbestos and PCBs at the Santa Clara Valley Water district at 3959 Whitman Way, was reported. It is listed under the HWTS and HAZNET databases. The case was inactivated in February 2000. This case was also reported in the lead and asbestos survey reports that Valley Water provided to Locus. Further discussion of these reports is presented in section 3. This is a REC with respect to the presence of hazardous building materials. The subject property is also listed under CERS due to several regulation violations, which were later brought back to code.



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There are 16 listings in a one-mile radius of the Subject Property that have negligible to limited potential to impact the Subject Property for being hydraulically downgradient and/or distantness. The majority of the database listings are a business or entity that comes under RCRA NONGEN.

San Jose Water Company-Dutard Station, located on 992 Noble Avenue (0.381miles from the subject property), is a former ENVIROSOTR cleanup site. Elemental mercury was found at the Site during construction work to replace an altitude valve box. Upon discovery of mercury within the excavation, work was halted, and the excavation covered. The mercury likely originated from the altitude valve control mechanism used at this facility many decades ago. It is not known how or when the mercury was released from the valve control. The site was contaminated with elemental mercury in soil at concentrations that exceed the California Human Health Screening Levels and U.S. Environmental Protection Agency Regional Screening Levels. In 2010, the Mercury impacted soil was excavated to below Site cleanup goal. Locus considers the potential migration of priority pollutant metals into the soil, soil vapor, and groundwater underlying the property to be a REC with respect to the Subject Property.

2) . The records review located 6 active and former water wells within a 1-mile radius of the Subject Property. The closest water well was on Noble Avenue and is approximately 734 feet from the property. These wells are no longer sampled. All wells are periodically monitored under the applicable local or regional agency oversight. As such, the wells do not raise environmental concern with respect to the Subject Property. All wells are periodically monitored under the applicable local or regional agency oversight. As such, the wells do not raise environmental concern with respect to the Subject Property. No oil wells are located within a 1-mile radius of the Subject Property.



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3) Historic aerial photographs show that land use around the Subject Property was heavily agricultural, from as early as 1939 until around 1968. The adjoining parcels were also used for agriculture from as early as 1939 to between 1968 and 1974, when residential development began. Due to the agricultural use of the Subject Property over an approximate 29-year period, there is a strong likelihood that the land on and surrounding the Subject Property was applicated with agricultural chemicals such as pesticides and herbicides, including during a period when related material management and handling operations were unregulated (pre-1970s). Thus, Locus cannot eliminate the potential for adversely impacted shallow soil of Subject Property. This historical agricultural land use constitutes a REC in connection with the Subject Property. There are no Sanborn Maps available for the property.
4) Generally, land use around the Subject Property is currently residential and rural rangeland. Historically, the area was used for a mix of residential and agricultural purposes.

## 5.3. Site Reconnaissance Findings

The following is a summary of findings related to the Site Reconnaissance and Interviews described in Section 3:

1) Land use surrounding the Subject Property is residential and rural rangeland. The site visit focused on the project area at the southwest portion of the treatment plant. Currently, there are three areas on the Subject Property that will be included in the residuals management Project. These are the solids handling and dewatering pits, the two filter wash water handling and treatment pits, and the sludge management building. Valley



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Water personnel described the construction materials of the existing ponds to be asphalt with an Endura-Flex coating.

2) Storm water is expected to drain in accordance with natural elevational gradient to the south of the Subject Property to storm drains along the driveway and in the street. Wastewater generated at the Subject Property is removed by public sewer. Potable water at the facility is generated at the facility itself.
3) No issue with debris was noted on the Subject Property.
4) Several infrastructure access vaults were observed in the southern portion of the Subject Property. They appeared to be well maintained and in good condition.
5) Valley Water personnel noted that during a previous project, serpentine rock was discovered at the property. These rocks may contain asbestos.

## 5.4. Conclusions

After completing this Phase 1 HSLA, this section summarizes Locus' conclusions in connection with the Subject Property's HSLA, with recommendations for further action as appropriate. Specifically, this Phase 1 HSLA inquiry has revealed:

1) One REC with respect to the release of chemicals involved in the water treatment process at the Subject Property and the potential migration of Sodium Hypochlorite and other halogenated VOCs into the soil, soil vapor, and groundwater underlying the Subject Property.
2) One REC with respect to the former ENVIROSOTR Cleanup Program due to Mercury at San Jose Water Company-Dutard Station, located on 992 Noble Avenue and the potential migration of priority pollutant metals into the soil, soil vapor, and groundwater underlying the Subject Property.



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3) One HREC with respect to the former diesel LUST Cleanup Program site Penitencia water treatment plant, located on 3559 Whitman way and the potential migration of petroleum products into the soil, soil vapor, and groundwater underlying the Subject Property.
4) One REC with respect to hazardous building materials. Hazardous materials such as asbestos may be present within construction materials due to previous findings.
5) One REC with respect to naturally occurring chrysotile asbestos, which may be present due to weathering of the serpentine rock, during excavation work.
6) One REC with respect to lead due to previous findings and the fact that the treatment system was built before lead paint was regulated (pre-1978), and the potential migration of priority pollutant metals into the soil, soil vapor, and groundwater underlying the Subject Property.
7) One REC with respect to the historical agricultural land use of the area. Due to agricultural use of the Subject Property over an approximate 29-year period there is a strong likelihood that the land on and surrounding the Subject Property was applicated with agricultural chemicals such as pesticides and herbicides, including during a period when related material management and handling operations were unregulated (pre-1970s).

## 5.5. Recommendations

After completing this Phase 1 HSLA, Locus recommends the following with respect to the Subject Property:

1) A limited Phase 2 subsurface investigation at the Subject Property to test:
    a) Soils, groundwater, and soil vapor for petroleum hydrocarbons, associated with the former LUST cleanup site at the subject property.
    b) Soils, groundwater, and soil vapor for priority pollutant metals associated with mercury from the former ENVIROSTOR cleanup site at 992 Noble Avenue.



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c) Soils, groundwater, and soil vapor for VOCs, halogenated VOCs and other chemicals associated with the water treatment process.

d) Shallow soils for pesticides and herbicides associated with historical agricultural land use.

e) Hazardous materials facilities survey to test for lead, naturally occurring Chrysotile asbestos and asbestos.

In the short-term, the results of this investigation should be compared against any applicable local, state, and federal guidelines, for example, RWQCB Environmental Screening Limits (ESLs), DTSC limits, and applicable hazardous materials standards, to ensure Valley Water employees and contractors are working in a safe environment during field activities. Other ESLs should be considered in relation to Valley's Water's intended long-term use and/or occupancy of the Subject Property. The estimated cost to perform the limited Phase 2 investigation would be $25,000 to $30,000.

Locus recommends that Valley Water perform a soil and groundwater quality investigation to evaluate subsurface conditions in any proposed excavation or construction area to evaluate potential impacts to Valley Waters proposed use of the Subject Property, including evaluation of soil management options for materials produced during exaction and construction and potential health and safety impacts to Valley Water workers. A typical investigation would consist of collecting representative soil and groundwater samples from three borings advanced in the proposed construction area of the Subject Property. One boring should be located adjacent to the Solids Handling and Dewatering facility to evaluate potential impacts related to its operations, off-site migration, and previous site uses, one boring should be located adjacent to the Washwater Handling and Treatment facility to evaluate potential impacts related to its operations, off-site migration, and previous site uses and the third boring should be located adjacent to the Sedimentation Basis Sludge Withdrawal facility to evaluate potential impacts related to its operations, off-site migration and previous site uses. Soil samples will be collected by direct



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push technologies at depths of 1, 5, and 25 feet below ground surface or before first encounter to groundwater. They should be analyzed for petroleum hydrocarbons (including gasoline, diesel, and oil), VOCs, polychlorinated biphenyls, semi-volatile organic compounds, PCBs, organochlorine pesticides, metals, and asbestos. If groundwater is encountered prior to the final depth, then a groundwater sample should be taken. Groundwater samples collected from the borings should be analyzed for petroleum hydrocarbons, VOCs, dissolved metals, and pH. Typical costs for an investigation of this type are in the range of $30,000 to $40,000.



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# FIGURES



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# APPENDIX A

# ENVIRONMENTAL PROFESSIONAL QUALIFICATIONS



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# APPENDIX B

# SITE RECONNAISSANCE AND QUESTIONNAIRE FORMS



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# APPENDIX C

# EDR RADIUS MAP



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# APPENDIX D

# AERIAL PHOTOGRAPHS



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# APPENDIX E

# TOPOGRAPHIC MAPS



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# APPENDIX F

# SANBORN MAP REPORT



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# APPENDIX G

# CITY DIRECTORY RECORDS



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# APPENDIX H

# CHAIN OF TITLE REPORT



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# APPENDIX I

# OTHER RELEVANT DOCUMENTS



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# APPENDIX J

# SITE RECONNAISSANCE PHOTOLOG



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# APPENDIX F

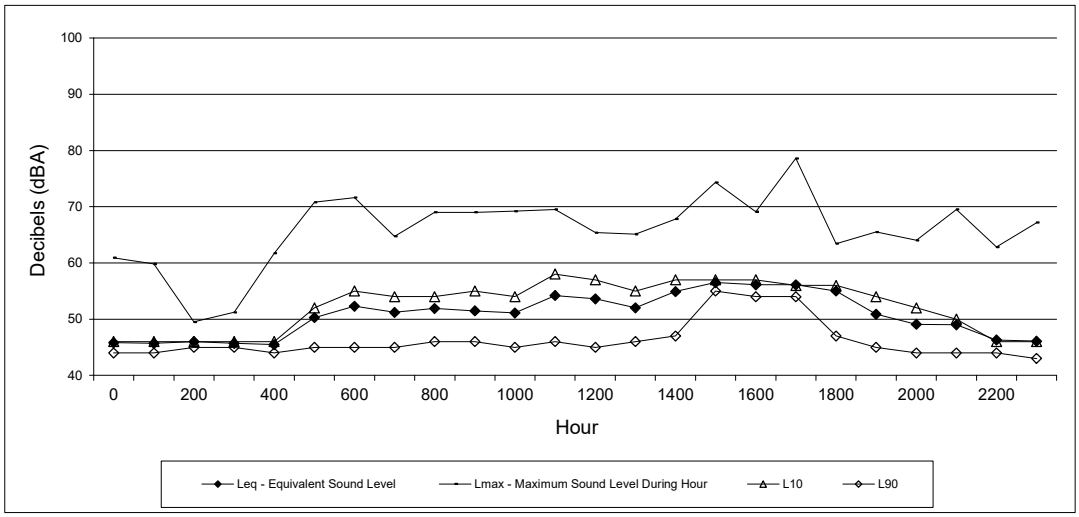
## Noise Monitoring Data and Calculations

# Noise Appendix

Long Term Noise Measurement Graphs for Sites 1 - 4

RCNM Noise Modeling Results (A1-A5)

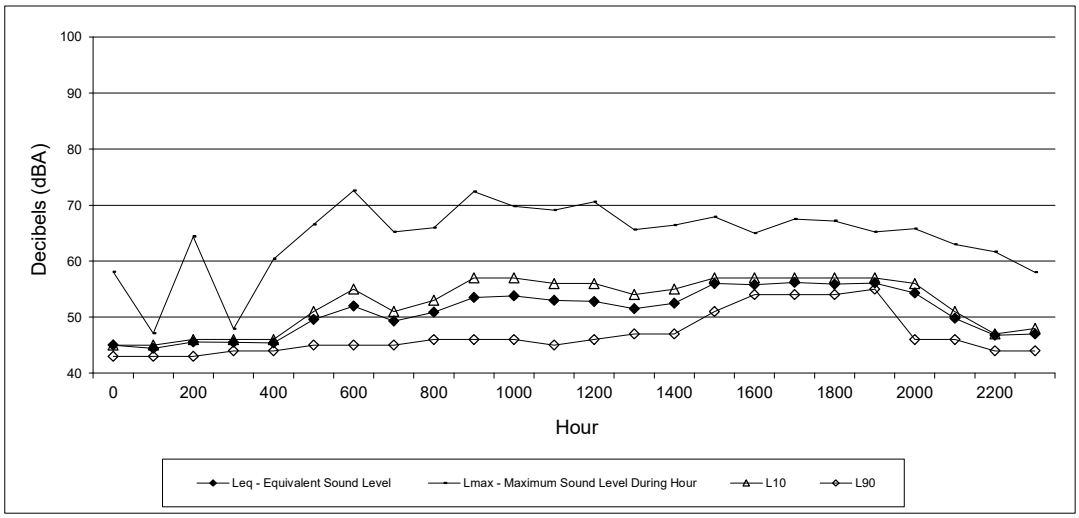
RCH GROUP
planning & environmental consulting




Site 1: Southwestern Project boundary, directly adjacent to Dutard pump enclosure
Tuesday June 27, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 46 | 61 | 46 | 44 |
| 100 | 46 | 60 | 46 | 44 |
| 200 | 46 | 50 | 46 | 45 |
| 300 | 46 | 51 | 46 | 45 |
| 400 | 46 | 62 | 46 | 44 |
| 500 | 50 | 71 | 52 | 45 |
| 600 | 52 | 72 | 55 | 45 |
| 700 | 51 | 65 | 54 | 45 |
| 800 | 52 | 69 | 54 | 46 |
| 900 | 52 | 69 | 55 | 46 |
| 1000 | 51 | 69 | 54 | 45 |
| 1100 | 54 | 70 | 58 | 46 |
| 1200 | 54 | 65 | 57 | 45 |
| 1300 | 52 | 65 | 55 | 46 |
| 1400 | 55 | 68 | 57 | 47 |
| 1500 | 57 | 74 | 57 | 55 |
| 1600 | 56 | 69 | 57 | 54 |
| 1700 | 56 | 79 | 56 | 54 |
| 1800 | 55 | 63 | 56 | 47 |
| 1900 | 51 | 66 | 54 | 45 |
| 2000 | 49 | 64 | 52 | 44 |
| 2100 | 49 | 70 | 50 | 44 |
| 2200 | 46 | 63 | 46 | 44 |
| 2300 | 46 | 67 | 46 | 43 |

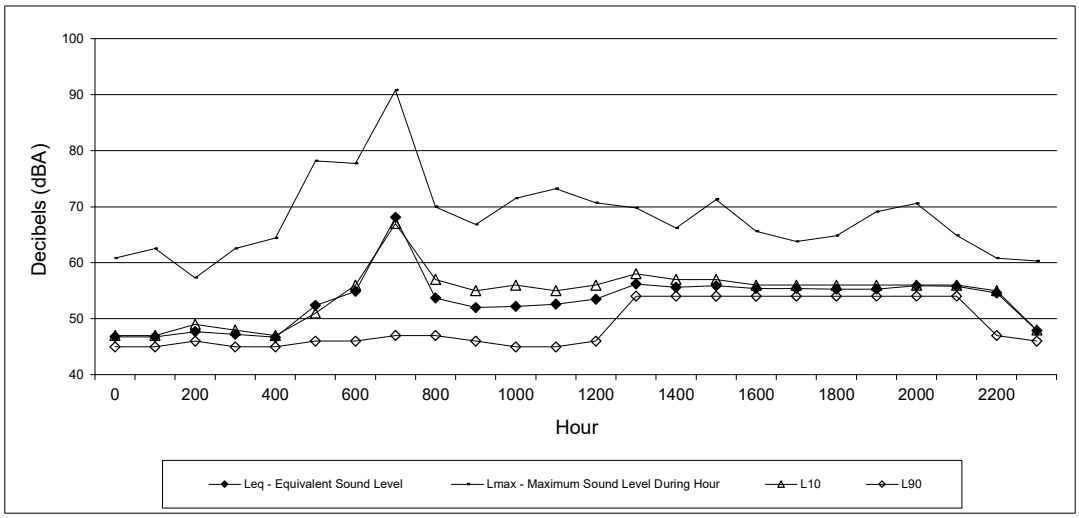
**CNEL 56**




Site 1: Southwestern Project boundary, directly adjacent to Dutard pump enclosure
Wednesday June 28, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 45 | 58 | 45 | 43 |
| 100 | 44 | 47 | 45 | 43 |
| 200 | 46 | 64 | 46 | 43 |
| 300 | 46 | 48 | 46 | 44 |
| 400 | 45 | 60 | 46 | 44 |
| 500 | 50 | 67 | 51 | 45 |
| 600 | 52 | 73 | 55 | 45 |
| 700 | 49 | 65 | 51 | 45 |
| 800 | 51 | 66 | 53 | 46 |
| 900 | 54 | 72 | 57 | 46 |
| 1000 | 54 | 70 | 57 | 46 |
| 1100 | 53 | 69 | 56 | 45 |
| 1200 | 53 | 71 | 56 | 46 |
| 1300 | 52 | 66 | 54 | 47 |
| 1400 | 53 | 66 | 55 | 47 |
| 1500 | 56 | 68 | 57 | 51 |
| 1600 | 56 | 65 | 57 | 54 |
| 1700 | 56 | 68 | 57 | 54 |
| 1800 | 56 | 67 | 57 | 54 |
| 1900 | 56 | 65 | 57 | 55 |
| 2000 | 54 | 66 | 56 | 46 |
| 2100 | 50 | 63 | 51 | 46 |
| 2200 | 47 | 62 | 47 | 44 |
| 2300 | 47 | 58 | 48 | 44 |

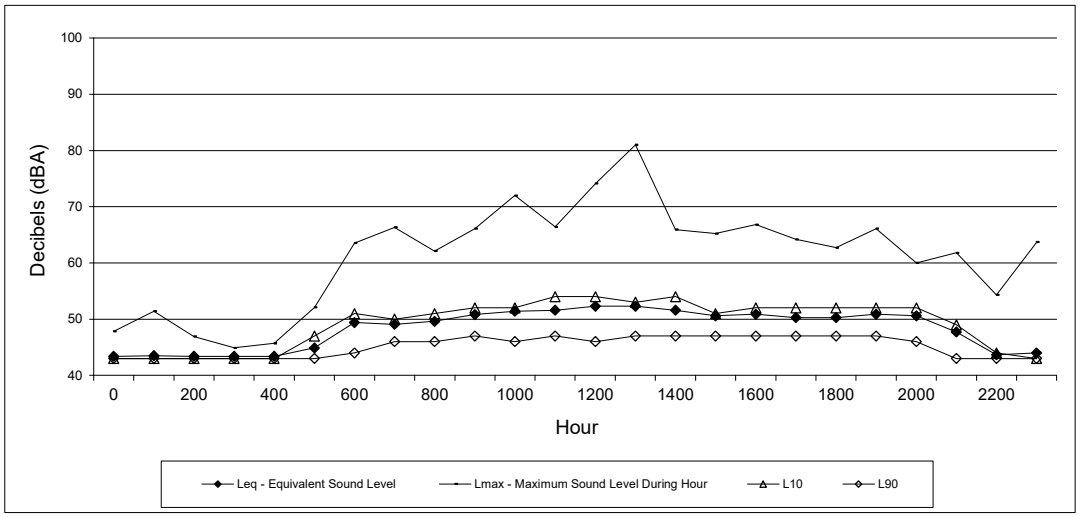
**CNEL: 56**




Site 1: Southwestern Project boundary, directly adjacent to Dutard pump enclosure
Thursday June 29, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 47 | 61 | 47 | 45 |
| 100 | 47 | 63 | 47 | 45 |
| 200 | 48 | 57 | 49 | 46 |
| 300 | 47 | 63 | 48 | 45 |
| 400 | 47 | 64 | 47 | 45 |
| 500 | 52 | 78 | 51 | 46 |
| 600 | 55 | 78 | 56 | 46 |
| 700 | 68 | 91 | 67 | 47 |
| 800 | 54 | 70 | 57 | 47 |
| 900 | 52 | 67 | 55 | 46 |
| 1000 | 52 | 72 | 56 | 45 |
| 1100 | 53 | 73 | 55 | 45 |
| 1200 | 54 | 71 | 56 | 46 |
| 1300 | 56 | 70 | 58 | 54 |
| 1400 | 56 | 66 | 57 | 54 |
| 1500 | 56 | 71 | 57 | 54 |
| 1600 | 55 | 66 | 56 | 54 |
| 1700 | 55 | 64 | 56 | 54 |
| 1800 | 55 | 65 | 56 | 54 |
| 1900 | 55 | 69 | 56 | 54 |
| 2000 | 56 | 71 | 56 | 54 |
| 2100 | 56 | 65 | 56 | 54 |
| 2200 | 55 | 61 | 55 | 47 |
| 2300 | 48 | 60 | 48 | 46 |

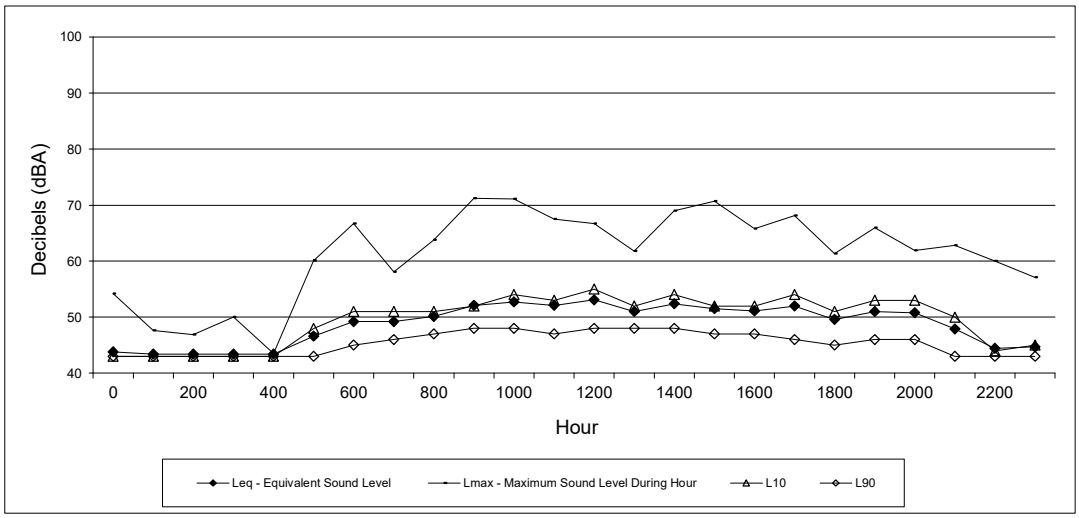
**CNEL: 60**




Site 2: Southern Project boundary, direcly north of residences on El Grande Dr.
Tuesday June 27, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 43 | 48 | 43 | 43 |
| 100 | 44 | 51 | 43 | 43 |
| 200 | 43 | 47 | 43 | 43 |
| 300 | 43 | 45 | 43 | 43 |
| 400 | 43 | 46 | 43 | 43 |
| 500 | 45 | 52 | 47 | 43 |
| 600 | 49 | 64 | 51 | 44 |
| 700 | 49 | 66 | 50 | 46 |
| 800 | 50 | 62 | 51 | 46 |
| 900 | 51 | 66 | 52 | 47 |
| 1000 | 51 | 72 | 52 | 46 |
| 1100 | 52 | 66 | 54 | 47 |
| 1200 | 52 | 74 | 54 | 46 |
| 1300 | 52 | 81 | 53 | 47 |
| 1400 | 52 | 66 | 54 | 47 |
| 1500 | 51 | 65 | 51 | 47 |
| 1600 | 51 | 67 | 52 | 47 |
| 1700 | 50 | 64 | 52 | 47 |
| 1800 | 50 | 63 | 52 | 47 |
| 1900 | 51 | 66 | 52 | 47 |
| 2000 | 51 | 60 | 52 | 46 |
| 2100 | 48 | 62 | 49 | 43 |
| 2200 | 44 | 54 | 44 | 43 |
| 2300 | 44 | 64 | 43 | 43 |

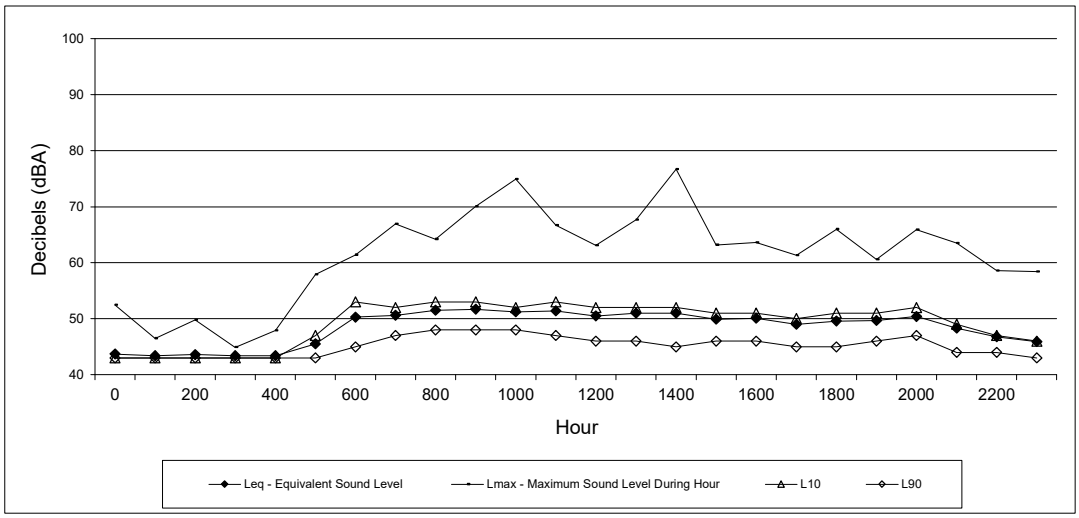
**CNEL 53**




Site 2: Southern Project boundary, direcly north of residences on El Grande Dr.
Wednesday June 28, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 44 | 54 | 43 | 43 |
| 100 | 43 | 48 | 43 | 43 |
| 200 | 43 | 47 | 43 | 43 |
| 300 | 43 | 50 | 43 | 43 |
| 400 | 43 | 44 | 43 | 43 |
| 500 | 47 | 60 | 48 | 43 |
| 600 | 49 | 67 | 51 | 45 |
| 700 | 49 | 58 | 51 | 46 |
| 800 | 50 | 64 | 51 | 47 |
| 900 | 52 | 71 | 52 | 48 |
| 1000 | 53 | 71 | 54 | 48 |
| 1100 | 52 | 68 | 53 | 47 |
| 1200 | 53 | 67 | 55 | 48 |
| 1300 | 51 | 62 | 52 | 48 |
| 1400 | 52 | 69 | 54 | 48 |
| 1500 | 52 | 71 | 52 | 47 |
| 1600 | 51 | 66 | 52 | 47 |
| 1700 | 52 | 68 | 54 | 46 |
| 1800 | 50 | 61 | 51 | 45 |
| 1900 | 51 | 66 | 53 | 46 |
| 2000 | 51 | 62 | 53 | 46 |
| 2100 | 48 | 63 | 50 | 43 |
| 2200 | 44 | 60 | 44 | 43 |
| 2300 | 45 | 57 | 45 | 43 |

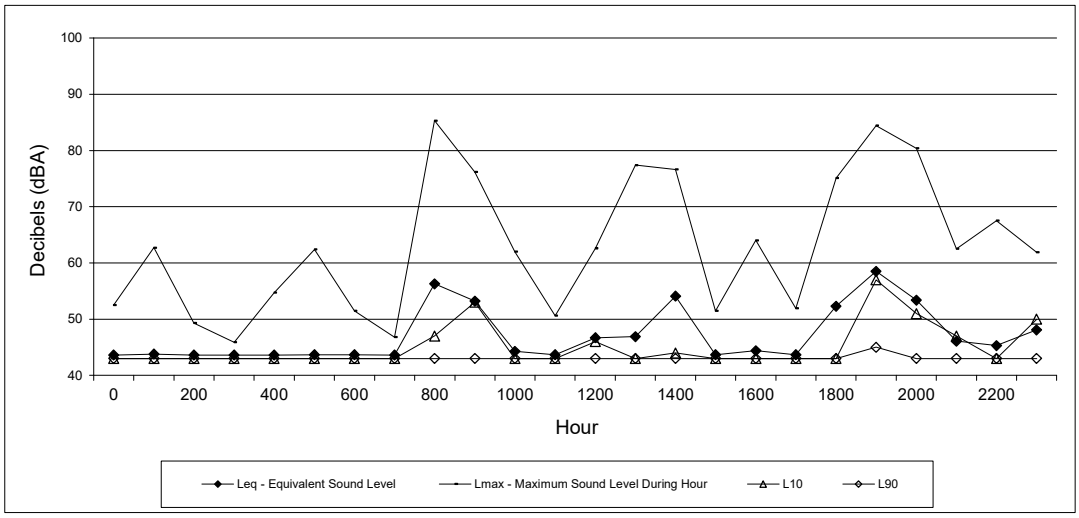
**CNEL: 54**




Site 2: Southern Project boundary, direcly north of residences on El Grande Dr.
Thursday June 29, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 44 | 53 | 43 | 43 |
| 100 | 43 | 47 | 43 | 43 |
| 200 | 44 | 50 | 43 | 43 |
| 300 | 43 | 45 | 43 | 43 |
| 400 | 43 | 48 | 43 | 43 |
| 500 | 46 | 58 | 47 | 43 |
| 600 | 50 | 61 | 53 | 45 |
| 700 | 51 | 67 | 52 | 47 |
| 800 | 52 | 64 | 53 | 48 |
| 900 | 52 | 70 | 53 | 48 |
| 1000 | 51 | 75 | 52 | 48 |
| 1100 | 51 | 67 | 53 | 47 |
| 1200 | 51 | 63 | 52 | 46 |
| 1300 | 51 | 68 | 52 | 46 |
| 1400 | 51 | 77 | 52 | 45 |
| 1500 | 50 | 63 | 51 | 46 |
| 1600 | 50 | 64 | 51 | 46 |
| 1700 | 49 | 61 | 50 | 45 |
| 1800 | 50 | 66 | 51 | 45 |
| 1900 | 50 | 61 | 51 | 46 |
| 2000 | 50 | 66 | 52 | 47 |
| 2100 | 48 | 64 | 49 | 44 |
| 2200 | 47 | 59 | 47 | 44 |
| 2300 | 46 | 58 | 46 | 43 |

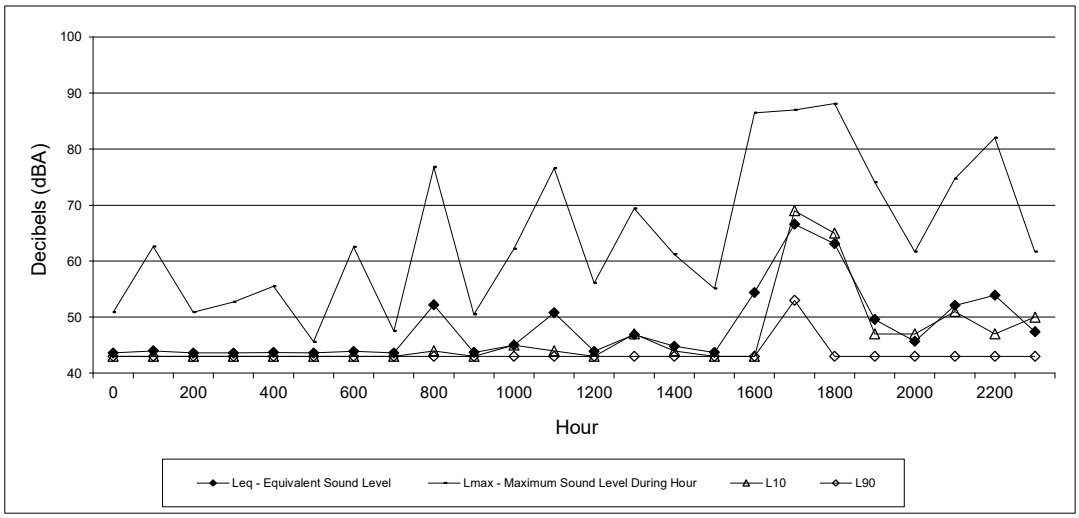
**CNEL: 54**




Site 3: Northwestern Project boundary, approximately 190 feet west of sludge holding ponds
Tuesday June 27, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 44 | 53 | 43 | 43 |
| 100 | 44 | 63 | 43 | 43 |
| 200 | 44 | 49 | 43 | 43 |
| 300 | 44 | 46 | 43 | 43 |
| 400 | 44 | 55 | 43 | 43 |
| 500 | 44 | 62 | 43 | 43 |
| 600 | 44 | 52 | 43 | 43 |
| 700 | 44 | 47 | 43 | 43 |
| 800 | 56 | 85 | 47 | 43 |
| 900 | 53 | 76 | 53 | 43 |
| 1000 | 44 | 62 | 43 | 43 |
| 1100 | 44 | 51 | 43 | 43 |
| 1200 | 47 | 63 | 46 | 43 |
| 1300 | 47 | 77 | 43 | 43 |
| 1400 | 54 | 77 | 44 | 43 |
| 1500 | 44 | 52 | 43 | 43 |
| 1600 | 44 | 64 | 43 | 43 |
| 1700 | 44 | 52 | 43 | 43 |
| 1800 | 52 | 75 | 43 | 43 |
| 1900 | 59 | 84 | 57 | 45 |
| 2000 | 53 | 80 | 51 | 43 |
| 2100 | 46 | 63 | 47 | 43 |
| 2200 | 45 | 68 | 43 | 43 |
| 2300 | 48 | 62 | 50 | 43 |

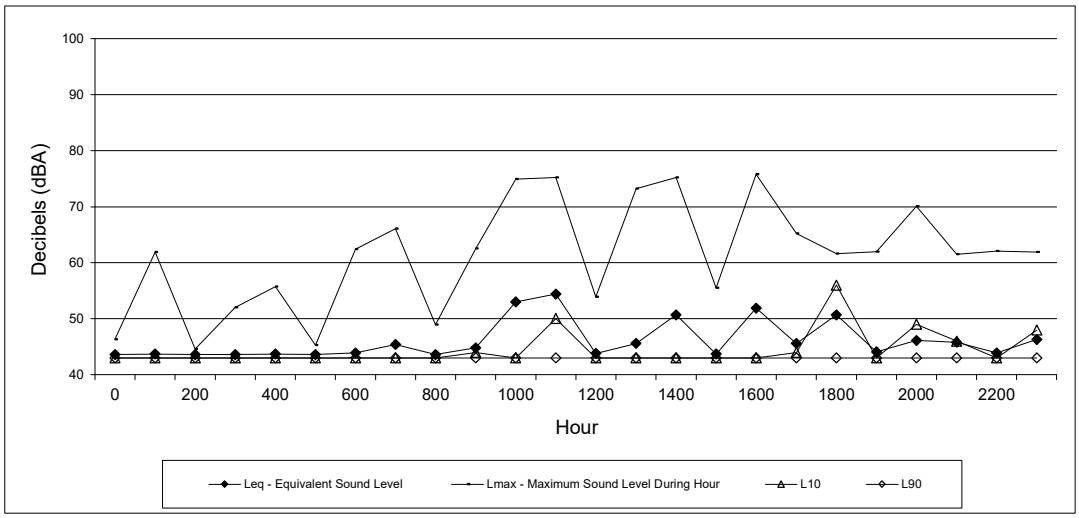
**CNEL 55**




Site 3: Northwestern Project boundary, approximately 190 feet west of sludge holding ponds
Wednesday June 28, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 44 | 51 | 43 | 43 |
| 100 | 44 | 63 | 43 | 43 |
| 200 | 44 | 51 | 43 | 43 |
| 300 | 44 | 53 | 43 | 43 |
| 400 | 44 | 56 | 43 | 43 |
| 500 | 44 | 46 | 43 | 43 |
| 600 | 44 | 63 | 43 | 43 |
| 700 | 44 | 48 | 43 | 43 |
| 800 | 52 | 77 | 44 | 43 |
| 900 | 44 | 51 | 43 | 43 |
| 1000 | 45 | 62 | 45 | 43 |
| 1100 | 51 | 77 | 44 | 43 |
| 1200 | 44 | 56 | 43 | 43 |
| 1300 | 47 | 69 | 47 | 43 |
| 1400 | 45 | 61 | 44 | 43 |
| 1500 | 44 | 55 | 43 | 43 |
| 1600 | 54 | 87 | 43 | 43 |
| 1700 | 67 | 87 | 69 | 53 |
| 1800 | 63 | 88 | 65 | 43 |
| 1900 | 50 | 74 | 47 | 43 |
| 2000 | 46 | 62 | 47 | 43 |
| 2100 | 52 | 75 | 51 | 43 |
| 2200 | 54 | 82 | 47 | 43 |
| 2300 | 47 | 62 | 50 | 43 |

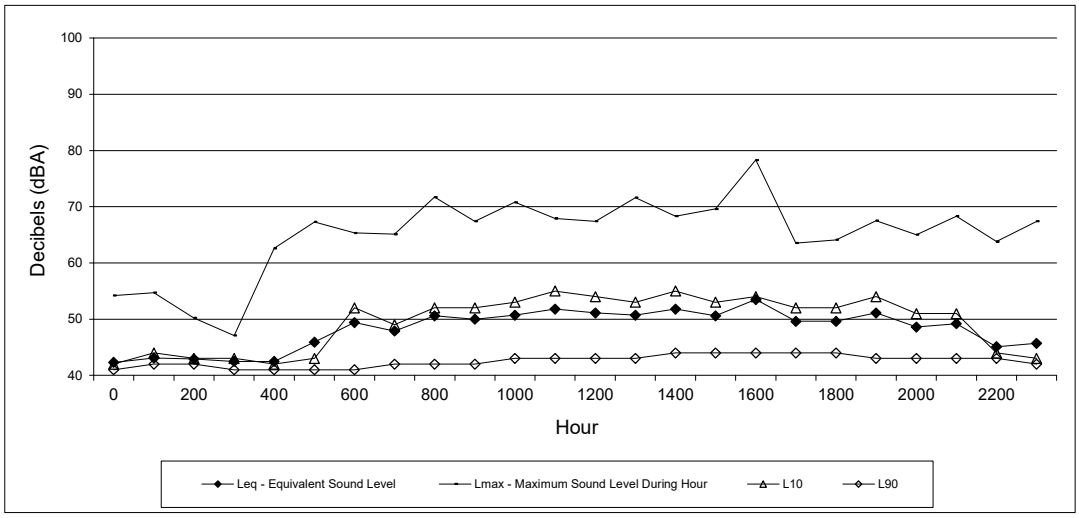
**CNEL: 57**




Site 3: Northwestern Project boundary, approximately 190 feet west of sludge holding ponds
Thursday June 29, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 44 | 46 | 43 | 43 |
| 100 | 44 | 62 | 43 | 43 |
| 200 | 44 | 45 | 43 | 43 |
| 300 | 44 | 52 | 43 | 43 |
| 400 | 44 | 56 | 43 | 43 |
| 500 | 44 | 45 | 43 | 43 |
| 600 | 44 | 62 | 43 | 43 |
| 700 | 45 | 66 | 43 | 43 |
| 800 | 44 | 49 | 43 | 43 |
| 900 | 45 | 63 | 44 | 43 |
| 1000 | 53 | 75 | 43 | 43 |
| 1100 | 54 | 75 | 50 | 43 |
| 1200 | 44 | 54 | 43 | 43 |
| 1300 | 46 | 73 | 43 | 43 |
| 1400 | 51 | 75 | 43 | 43 |
| 1500 | 44 | 56 | 43 | 43 |
| 1600 | 52 | 76 | 43 | 43 |
| 1700 | 46 | 65 | 44 | 43 |
| 1800 | 51 | 62 | 56 | 43 |
| 1900 | 44 | 62 | 43 | 43 |
| 2000 | 46 | 70 | 49 | 43 |
| 2100 | 46 | 62 | 46 | 43 |
| 2200 | 44 | 62 | 43 | 43 |
| 2300 | 46 | 62 | 48 | 43 |

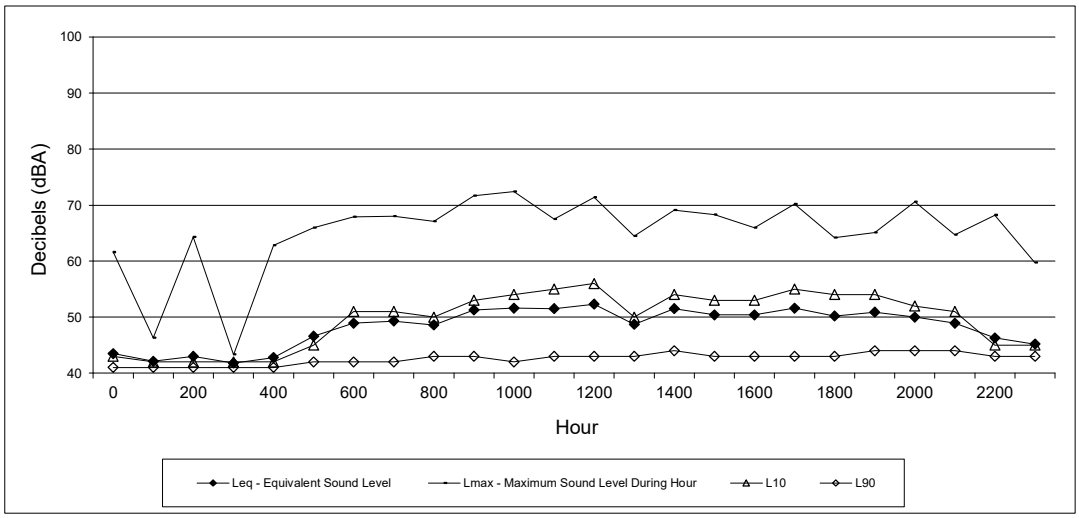
**CNEL: 52**




Site 4: Nearby intersection of Bay Laurel Ln and Whitman Way, 30 feet north of the centerline of Whitman Way
Tuesday June 27, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 42 | 54 | 42 | 41 |
| 100 | 43 | 55 | 44 | 42 |
| 200 | 43 | 50 | 43 | 42 |
| 300 | 43 | 47 | 43 | 41 |
| 400 | 43 | 63 | 42 | 41 |
| 500 | 46 | 67 | 43 | 41 |
| 600 | 49 | 65 | 52 | 41 |
| 700 | 48 | 65 | 49 | 42 |
| 800 | 51 | 72 | 52 | 42 |
| 900 | 50 | 67 | 52 | 42 |
| 1000 | 51 | 71 | 53 | 43 |
| 1100 | 52 | 68 | 55 | 43 |
| 1200 | 51 | 67 | 54 | 43 |
| 1300 | 51 | 72 | 53 | 43 |
| 1400 | 52 | 68 | 55 | 44 |
| 1500 | 51 | 70 | 53 | 44 |
| 1600 | 54 | 78 | 54 | 44 |
| 1700 | 50 | 64 | 52 | 44 |
| 1800 | 50 | 64 | 52 | 44 |
| 1900 | 51 | 68 | 54 | 43 |
| 2000 | 49 | 65 | 51 | 43 |
| 2100 | 49 | 68 | 51 | 43 |
| 2200 | 45 | 64 | 44 | 43 |
| 2300 | 46 | 67 | 43 | 42 |

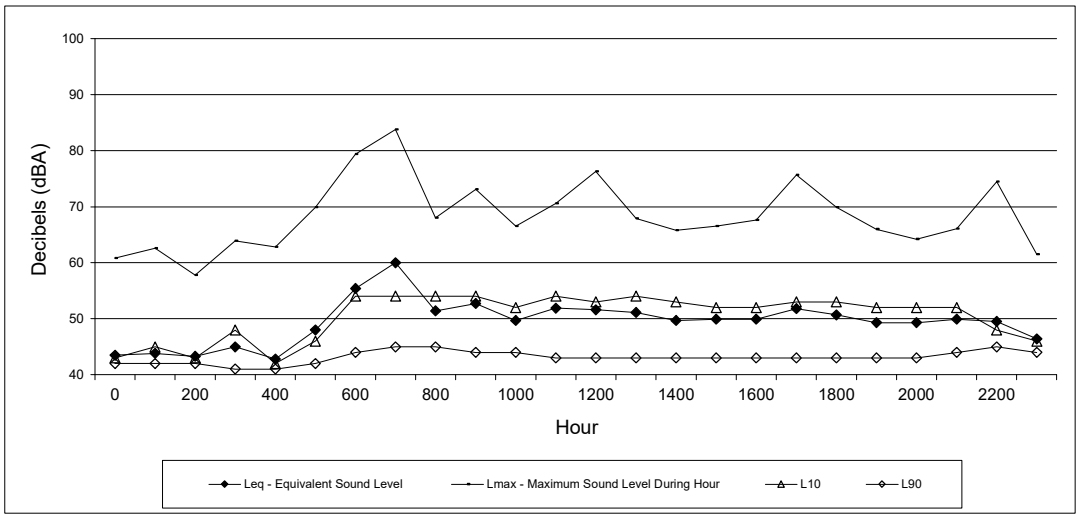
**CNEL 53**




Site 4: Nearby intersection of Bay Laurel Ln and Whitman Way, 30 feet north of the centerline of Whitman Way
Wednesday June 28, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 44 | 62 | 43 | 41 |
| 100 | 42 | 46 | 42 | 41 |
| 200 | 43 | 64 | 42 | 41 |
| 300 | 42 | 43 | 42 | 41 |
| 400 | 43 | 63 | 42 | 41 |
| 500 | 47 | 66 | 45 | 42 |
| 600 | 49 | 68 | 51 | 42 |
| 700 | 49 | 68 | 51 | 42 |
| 800 | 49 | 67 | 50 | 43 |
| 900 | 51 | 72 | 53 | 43 |
| 1000 | 52 | 72 | 54 | 42 |
| 1100 | 52 | 68 | 55 | 43 |
| 1200 | 52 | 71 | 56 | 43 |
| 1300 | 49 | 65 | 50 | 43 |
| 1400 | 52 | 69 | 54 | 44 |
| 1500 | 50 | 68 | 53 | 43 |
| 1600 | 50 | 66 | 53 | 43 |
| 1700 | 52 | 70 | 55 | 43 |
| 1800 | 50 | 64 | 54 | 43 |
| 1900 | 51 | 65 | 54 | 44 |
| 2000 | 50 | 71 | 52 | 44 |
| 2100 | 49 | 65 | 51 | 44 |
| 2200 | 46 | 68 | 45 | 43 |
| 2300 | 45 | 60 | 45 | 43 |

**CNEL: 53**




Site 4: Nearby intersection of Bay Laurel Ln and Whitman Way, 30 feet north of the centerline of Whitman Way
Thursday June 29, 2023

| Hour | Leq - Equivalent Sound Level | Lmax - Maximum Sound Level During Hour | L10 | L90 |
|---|---|---|---|---|
| 0 | 44 | 61 | 43 | 42 |
| 100 | 44 | 63 | 45 | 42 |
| 200 | 43 | 58 | 43 | 42 |
| 300 | 45 | 64 | 48 | 41 |
| 400 | 43 | 63 | 42 | 41 |
| 500 | 48 | 70 | 46 | 42 |
| 600 | 55 | 79 | 54 | 44 |
| 700 | 60 | 84 | 54 | 45 |
| 800 | 51 | 68 | 54 | 45 |
| 900 | 53 | 73 | 54 | 44 |
| 1000 | 50 | 67 | 52 | 44 |
| 1100 | 52 | 71 | 54 | 43 |
| 1200 | 52 | 76 | 53 | 43 |
| 1300 | 51 | 68 | 54 | 43 |
| 1400 | 50 | 66 | 53 | 43 |
| 1500 | 50 | 67 | 52 | 43 |
| 1600 | 50 | 68 | 52 | 43 |
| 1700 | 52 | 76 | 53 | 43 |
| 1800 | 51 | 70 | 53 | 43 |
| 1900 | 49 | 66 | 52 | 43 |
| 2000 | 49 | 64 | 52 | 43 |
| 2100 | 50 | 66 | 52 | 44 |
| 2200 | 50 | 75 | 48 | 45 |
| 2300 | 46 | 62 | 46 | 44 |

**CNEL: 56**

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/06/2024
Case Description: Demolition of Sludge Holding Pond (North Side of Project Site)

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Scenario A-1a | Residential | 63.0 | 55.0 | 52.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Impact Pile Driver | Yes | 20 | | 101.3 | 370.0 | 0.0 |
| Excavator | No | 40 | | 80.7 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Compactor (ground) | No | 20 | | 83.2 | 350.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 350.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 350.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 350.0 | 0.0 |

Results

| Noise Limits (dBA) | Noise Limit Exceedance (dBA) |
|---|---|

| Equipment | Calculated (dBA) | | | | Day | | Evening | |
|---|---|---|---|---|---|---|---|---|
| | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| | Day | | Evening | | Night | | | |
| | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| Impact Pile Driver | 83.9 | 76.9 | N/A | N/A | N/A | N/A | N/A | N/A |
| Excavator | 63.8 | 59.8 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A |
| Compactor (ground) | 66.3 | 59.3 | N/A | N/A | N/A | N/A | N/A | N/A |
| Front End Loader | 62.2 | 58.2 | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 59.5 | 55.6 | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 59.5 | 55.6 | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 83.9 | 78.6 | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/08/2024
Case Description: Demolition of Sludge Holding Pond (North Side of Project Site)

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Scenario A-1b | Residential | 63.0 | 55.0 | 52.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Auger Drill Rig | No | 20 | | 84.4 | 370.0 | 0.0 |
| Excavator | No | 40 | | 80.7 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Compactor (ground) | No | 20 | | 83.2 | 350.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 350.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 350.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 350.0 | 0.0 |

Results

| Noise Limits (dBA) | Noise Limit Exceedance (dBA) |
|---|---|

| Equipment | Calculated (dBA) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | | Day | | Evening | | Night | |
| | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| Auger Drill Rig | 67.0 | 60.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Excavator | 63.8 | 59.8 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Compactor (ground) | 66.3 | 59.3 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Front End Loader | 62.2 | 58.2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 59.5 | 55.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 59.5 | 55.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 71.1 | 73.9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/08/2024
Case Description: Demolition of Sludge Holding Pond (North Side of Project Site)

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Scenario A-1c | Residential | 63.0 | 55.0 | 52.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Vibratory Pile Driver* | No | 20 | | 95.0 | 370.0 | 0.0 |
| Excavator | No | 40 | | 80.7 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 350.0 | 0.0 |
| Compactor (ground) | No | 20 | | 83.2 | 350.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 350.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 350.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 350.0 | 0.0 |

Results

| Noise Limits (dBA) | Noise Limit Exceedance (dBA) |
|---|---|

| | Calculated (dBA) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Day | | | Evening | | | Night | | |
| Equipment | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| Vibratory Pile Driver* | 77.6 | 70.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Excavator | 63.8 | 59.8 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 71.1 | 67.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Compactor (ground) | 66.3 | 59.3 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Front End Loader | 62.2 | 58.2 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 59.5 | 55.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 59.5 | 55.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 77.6 | 75.5 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/06/2024
Case Description: Demolition of Washwater Recovery Pond - South Side of Project

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Scenario A-2a | Residential | 53.0 | 50.0 | 43.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Impact Pile Driver | Yes | 20 | | 101.3 | 100.0 | 0.0 |
| Excavator | No | 40 | | 80.7 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Compactor (ground) | No | 20 | | 83.2 | 90.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 90.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 90.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 90.0 | 0.0 |

Results

| Noise Limits (dBA) | Noise Limit Exceedance (dBA) |
|---|---|

| Equipment | Calculated (dBA) | | | | Day | | Evening | |
|---|---|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | | | |
| | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| Impact Pile Driver | 95.2 | 88.3 | N/A | N/A | N/A | N/A | N/A | N/A |
| Excavator | 75.6 | 71.6 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A |
| Compactor (ground) | 78.1 | 71.1 | N/A | N/A | N/A | N/A | N/A | N/A |
| Front End Loader | 74.0 | 70.0 | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 71.3 | 67.4 | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 71.3 | 67.4 | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 95.2 | 90.1 | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/08/2024
Case Description: Demolition of Washwater Recovery Pond - South Side of Project

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Scenario A-2b | Residential | 53.0 | 50.0 | 43.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Auger Drill Rig | No | 20 | | 84.4 | 100.0 | 0.0 |
| Excavator | No | 40 | | 80.7 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Compactor (ground) | No | 20 | | 83.2 | 90.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 90.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 90.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 90.0 | 0.0 |

Results

| Noise Limits (dBA) | Noise Limit Exceedance (dBA) |
|---|---|

| | Calculated (dBA) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Day | | Evening | | | Night | | | |
| Equipment | Lmax | Leq | Lmax | Leq | | Lmax | Leq | Lmax | Leq |
| | | | | | | | | | |
| Auger Drill Rig | 78.3 | 71.3 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Excavator | 75.6 | 71.6 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Compactor (ground) | 78.1 | 71.1 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Front End Loader | 74.0 | 70.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 71.3 | 67.4 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 71.3 | 67.4 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 82.9 | 85.7 | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/08/2024
Case Description: Demolition of Washwater Recovery Pond - South Side of Project

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Scenario A-2c | Residential | 53.0 | 50.0 | 43.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Vibratory Pile Driver* | No | 20 | | 95.0 | 100.0 | 0.0 |
| Excavator | No | 40 | | 80.7 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 90.0 | 0.0 |
| Compactor (ground) | No | 20 | | 83.2 | 90.0 | 0.0 |
| Front End Loader | No | 40 | | 79.1 | 90.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 90.0 | 0.0 |
| Dump Truck | No | 40 | | 76.5 | 90.0 | 0.0 |

Results

| Noise Limits (dBA) | Noise Limit Exceedance (dBA) |
|---|---|

| Equipment | Calculated (dBA) | | | | Day | | Evening | |
|---|---|---|---|---|---|---|---|---|
| | Day | | Evening | | Night | | | |
| | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
| Vibratory Pile Driver* | 89.0 | 82.0 | N/A | N/A | N/A | N/A | N/A | N/A |
| Excavator | 75.6 | 71.6 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | 82.9 | 78.9 | N/A | N/A | N/A | N/A | N/A | N/A |
| Compactor (ground) | 78.1 | 71.1 | N/A | N/A | N/A | N/A | N/A | N/A |
| Front End Loader | 74.0 | 70.0 | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 71.3 | 67.4 | N/A | N/A | N/A | N/A | N/A | N/A |
| Dump Truck | 71.3 | 67.4 | N/A | N/A | N/A | N/A | N/A | N/A |
| Total | 89.0 | 87.1 | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/06/2024
Case Description: Paving of southern area of Project - Directly south of Washwater Basins

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Scenario A-3 | Residential | 53.0 | 50.0 | 43.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Paver | No | 50 | | 77.2 | 80.0 | 0.0 |
| Compactor (ground) | No | 20 | | 83.2 | 80.0 | 0.0 |
| Roller | No | 20 | | 80.0 | 80.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 80.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 80.0 | 0.0 |
| Haul Truck | No | 40 | | 88.0 | 80.0 | 0.0 |
| Concrete Mixer Truck | No | 40 | | 78.8 | 80.0 | 0.0 |

Results

| Noise Limits (dBA) | | Noise Limit Exceedance (dBA) | | |
|---|---|---|---|---|
| | Calculated (dBA) | Day | Evening | Night |
| Day | Evening | Night | | |
| Night | | | | |

| Equipment | | | Lmax | Leq | Lmax | Leq | Lmax | Leq |
|---|---|---|---|---|---|---|---|---|
| Paver | | | 73.1 | 70.1 | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Compactor (ground) | | | 79.1 | 72.2 | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Roller | | | 75.9 | 68.9 | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | | | 83.9 | 79.9 | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | | | 83.9 | 79.9 | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Haul Truck | | | 83.9 | 79.9 | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Concrete Mixer Truck | | | 74.7 | 70.7 | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | Total | 83.9 | 85.3 | N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/07/2024
Case Description: Concrete Pours - Southern Washwater Basin

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Scenario A-4 | Residential | 53.0 | 50.0 | 43.0 |

Equipment

| Description | Impact Device | Usage (%) | Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Pickup Truck | No | 40 | | 75.0 | 90.0 | 0.0 |
| Pickup Truck | No | 40 | | 75.0 | 90.0 | 0.0 |
| Concrete Mixer Truck | No | 40 | | 78.8 | 100.0 | 0.0 |
| Concrete Mixer Truck | No | 40 | | 78.8 | 100.0 | 0.0 |

Results

| Noise Limits (dBA) | | | Noise Limit Exceedance (dBA) | | | |
|---|---|---|---|---|---|---|
| Calculated (dBA) | | | Day | | Evening | |
| Night | Day | Evening | Night | | | |

| Equipment | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq | Lmax | Leq |
|---|---|---|---|---|---|---|---|---|---|---|
| Pickup Truck | 69.9 | 65.9 | N/A | N/A | N/A | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Pickup Truck | | | 69.9 | 65.9 | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Concrete Mixer Truck | | | 72.8 | 68.8 | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Concrete Mixer Truck | | | 72.8 | 68.8 | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | Total | 72.8 | 73.6 | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/07/2024
Case Description: Staging Area Noise

**** Receptor #1 ****

| Description | Land Use | Baselines (dBA) Daytime | Evening | Night |
|---|---|---|---|---|
| Scenario A-5 | Residential | 59.0 | 55.0 | 48.0 |

| Description | Impact Device | Usage (%) | Equipment Spec Lmax (dBA) | Actual Lmax (dBA) | Receptor Distance (feet) | Estimated Shielding (dBA) |
|---|---|---|---|---|---|---|
| Pickup Truck | No | 40 | | 75.0 | 90.0 | 0.0 |
| Pickup Truck | No | 40 | | 75.0 | 90.0 | 0.0 |
| Pickup Truck | No | 40 | | 75.0 | 90.0 | 0.0 |
| Backhoe | No | 40 | | 77.6 | 90.0 | 0.0 |
| Forklift | No | 40 | | 77.0 | 90.0 | 0.0 |

Results

| Equipment | Calculated (dBA) Day Lmax | Day Leq | Evening Lmax | Evening Leq | Night Lmax | Night Leq | Noise Limit Exceedance (dBA) Day Lmax | Day Leq | Evening Lmax | Evening Leq | Night Lmax | Night Leq |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Limits (dBA) | | | | | | | | | | | | |
| Pickup Truck | | | | | | | | | | | | |
| Pickup Truck | | | | | | | | | | | | |
| Pickup Truck | | | | | | | | | | | | |
| Backhoe | | | | | | | | | | | | |
| Forklift | | | | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Pickup Truck | | | 69.9 | 65.9 | | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Pickup Truck | | | 69.9 | 65.9 | | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Pickup Truck | | | 69.9 | 65.9 | | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Backhoe | | | 72.5 | 68.5 | | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Forklift | | | 71.9 | 67.9 | | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | Total | 72.5 | 74.0 | | N/A | N/A | N/A | |
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

# APPENDIX G

## AB 52 Notification Letters

Valley Water

Clean Water • Healthy Environment • Flood Protection

August 25, 2023

Charlene Nijmeh, Tribal Chair
Muwekma Ohlone Indian Tribe
20885 Redwood Road, Suite 232
Castro Valley, CA 94546
Via E-Mail: cnijmeh@muwekma.org & US Mail

**Subject:** **Formal Notification Pursuant to Public Resources Code §21080.3.1 (Assembly Bill 52) for the Santa Clara Valley Water District Penitencia Water Treatment Plant Residuals Management Project, San Jose, California**

Dear Ms. Charlene Nijmeh, Tribal Chair:

Pursuant to California Public Resources Code (PRC) §21080.3.1, Santa Clara Valley Water District (Valley Water), as the California Environmental Quality Act (CEQA) Lead Agency, hereby provides formal notification of the decision to undertake the Penitencia Water Treatment Plant (PWTP) Residuals Management Project (project). Valley Water intends to prepare a Mitigated Negative Declaration (MND) for the project to fulfill the requirements of CEQA. This letter is to formally notify you of a consultation opportunity pursuant to PRC §21080.3.1.

The PWTP project is located in the northeastern portion of San Jose, in Santa Clara County (Figure 1). The Project elements include upgrades to the existing washwater handling treatment system, sludge handling, and dewatering system, automation of the sludge withdrawal system in the sedimentation basins, and replacement and improvements to the PWTP perimeter security system, fencing with lighting, and the addition of a security access trail, and landscaping. The Project improvements would be located within the footprint of the existing sedimentation ponds, washwater recovery ponds, and dewatering building as well as along the perimeter fence. The existing PWTP elements are shown in Figure 2.

Pursuant to PRC §21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with Valley Water. Regardless of whether you request consultation pursuant to PRC §21080.3.1 (b), we welcome your participation in the CEQA process.

Should you have any questions, please contact me as Valley Water's point of contact for the proposed project:

Michael F. Coleman

Michael F. Coleman, AICP
Environmental Planner
Mcoleman@valleywater.org
Direct line: 408-630-3096

cc: Susanne Heim, Principal, Panorama Environmental, Inc.
Attachments: Project Location and Project Site Figures

**Figure 1 Project Location**

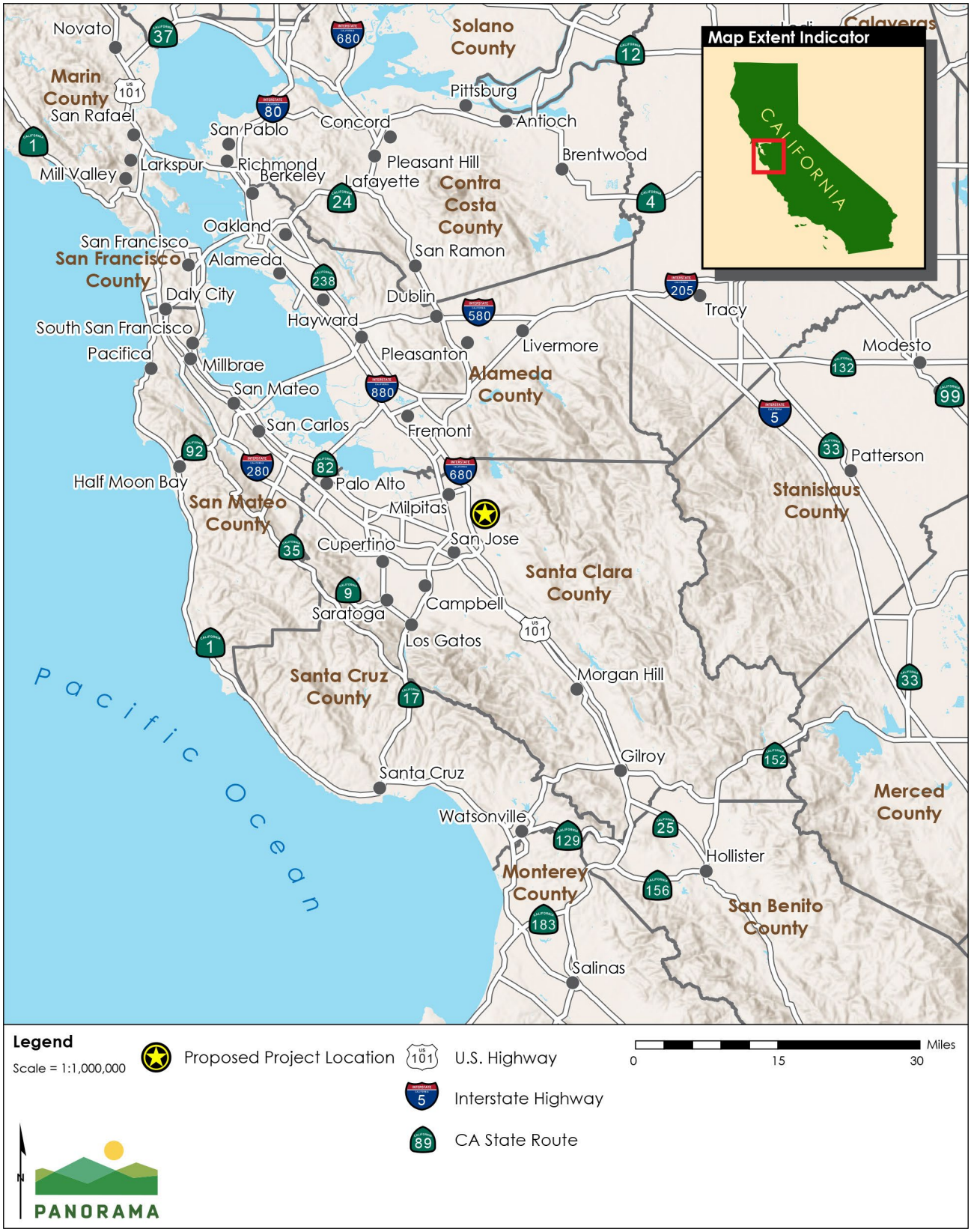
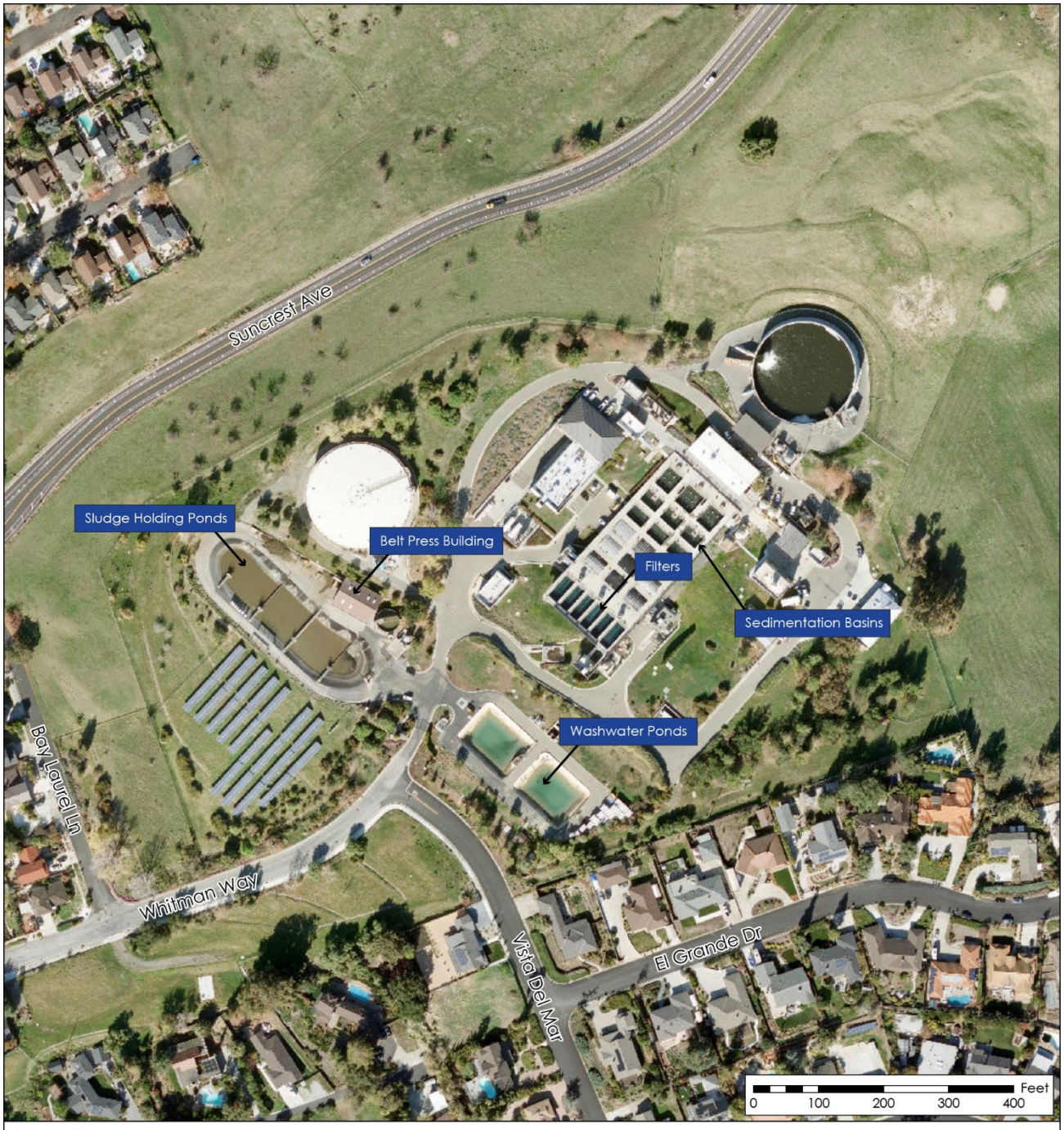


**Figure 2 Project Site**



Valley Water

Clean Water • Healthy Environment • Flood Protection

August 25, 2023

Johnathan Costillas, Tribal Cultural Resource Officer
Tamien Nation
PO Box 866
Clearlake Oaks, CA 95423
Via E-Mail: thpo@tamien.org & US Mail

**Subject:** **Formal Notification Pursuant to Public Resources Code §21080.3.1 (Assembly Bill 52) for the Santa Clara Valley Water District Penitencia Water Treatment Plant Residuals Management Project, San Jose, California**

Dear Mr. Johnathan Costillas, Tribal Cultural Resource Officer:

Pursuant to California Public Resources Code (PRC) §21080.3.1, Santa Clara Valley Water District (Valley Water), as the California Environmental Quality Act (CEQA) Lead Agency, hereby provides formal notification of the decision to undertake the Penitencia Water Treatment Plant (PWTP) Residuals Management Project (project). Valley Water intends to prepare a Mitigated Negative Declaration (MND) for the project to fulfill the requirements of CEQA. This letter is to formally notify you of a consultation opportunity pursuant to PRC §21080.3.1.

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Environmental Planner
Mcoleman@valleywater.org
Direct line: 408-630-3096

cc: Susanne Heim, Principal, Panorama Environmental, Inc.
Attachments: Project Location and Project Site Figures

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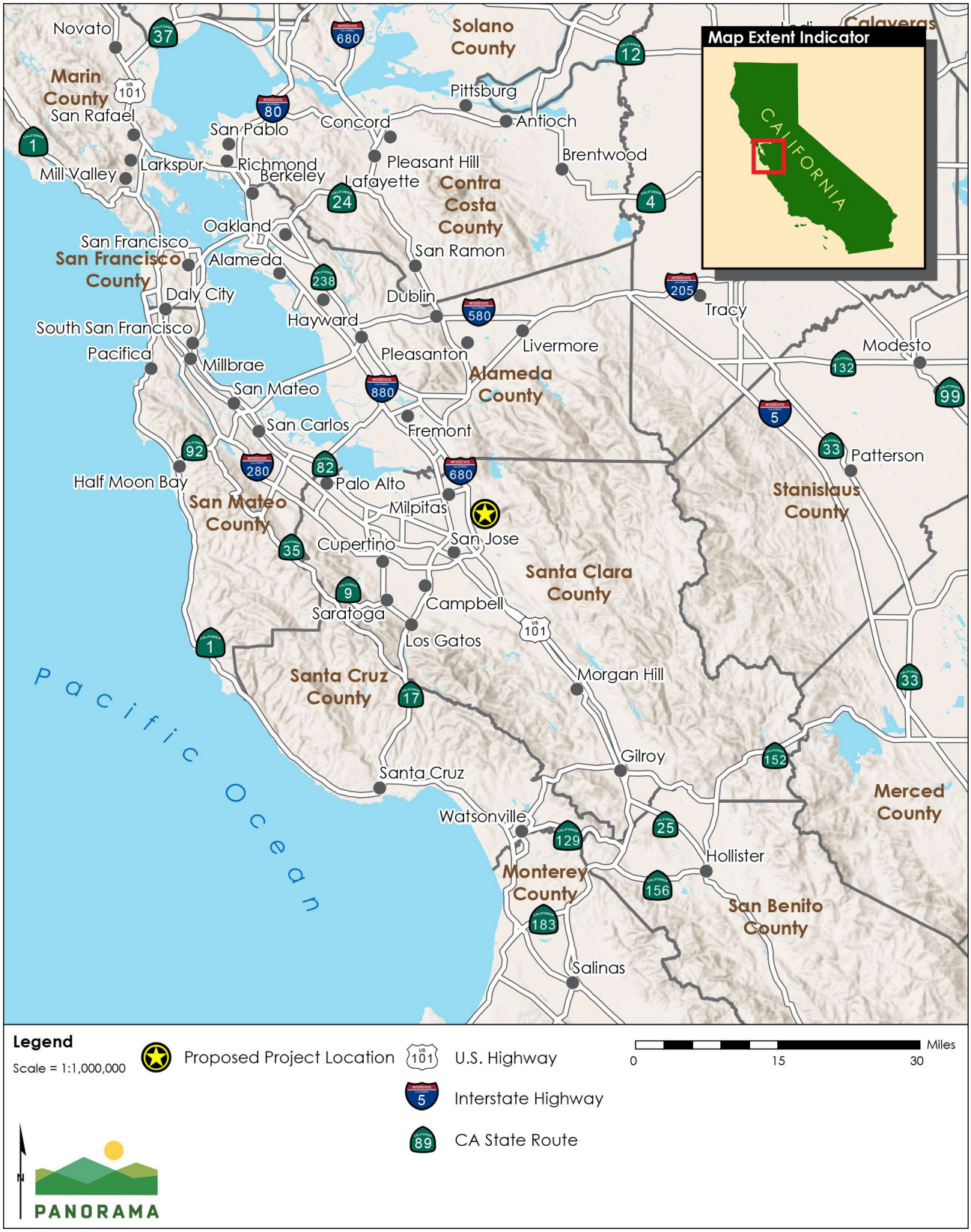
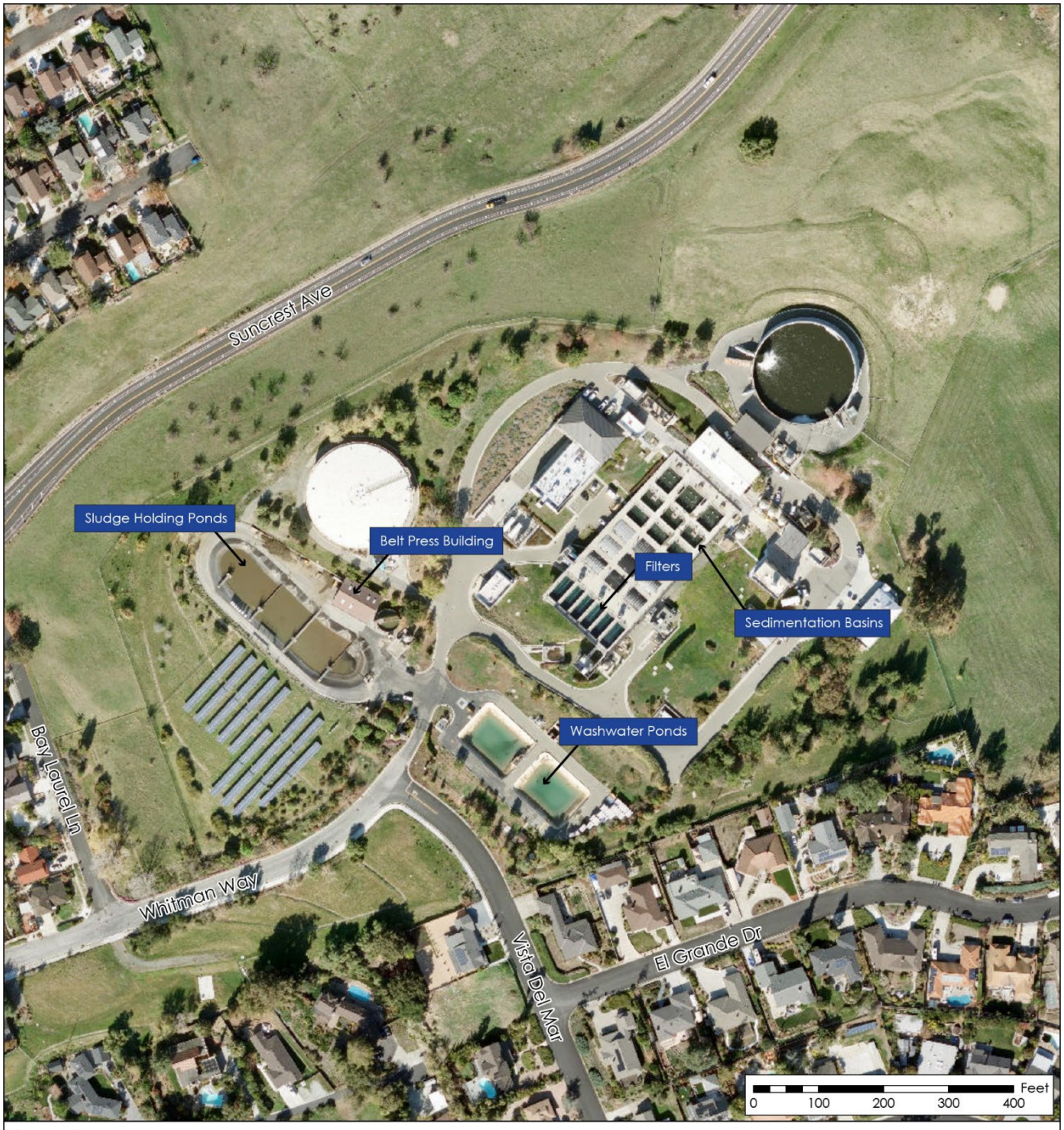


**Figure 2 Project Site**



Valley Water

Clean Water • Healthy Environment • Flood Protection

August 25, 2023

Quirina Luna Geary, Chairwoman
Tamien Nation
PO Box 8053
San Jose, CA 95155
Via E-Mail: qgeary@tamien.org & US Mail

**Subject:** **Formal Notification Pursuant to Public Resources Code §21080.3.1 (Assembly Bill 52) for the Santa Clara Valley Water District Penitencia Water Treatment Plant Residuals Management Project, San Jose, California**

Dear Ms. Quirina Luna Geary, Chairwoman:

Pursuant to California Public Resources Code (PRC) §21080.3.1, Santa Clara Valley Water District (Valley Water), as the California Environmental Quality Act (CEQA) Lead Agency, hereby provides formal notification of the decision to undertake the Penitencia Water Treatment Plant (PWTP) Residuals Management Project (project). Valley Water intends to prepare a Mitigated Negative Declaration (MND) for the project to fulfill the requirements of CEQA. This letter is to formally notify you of a consultation opportunity pursuant to PRC §21080.3.1.

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Pursuant to PRC §21080.3.1 (b), you have 30 days from the receipt of this letter to request consultation, in writing, with Valley Water. Regardless of whether you request consultation pursuant to PRC §21080.3.1 (b), we welcome your participation in the CEQA process.

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Michael F. Coleman, AICP
Environmental Planner
Mcoleman@valleywater.org
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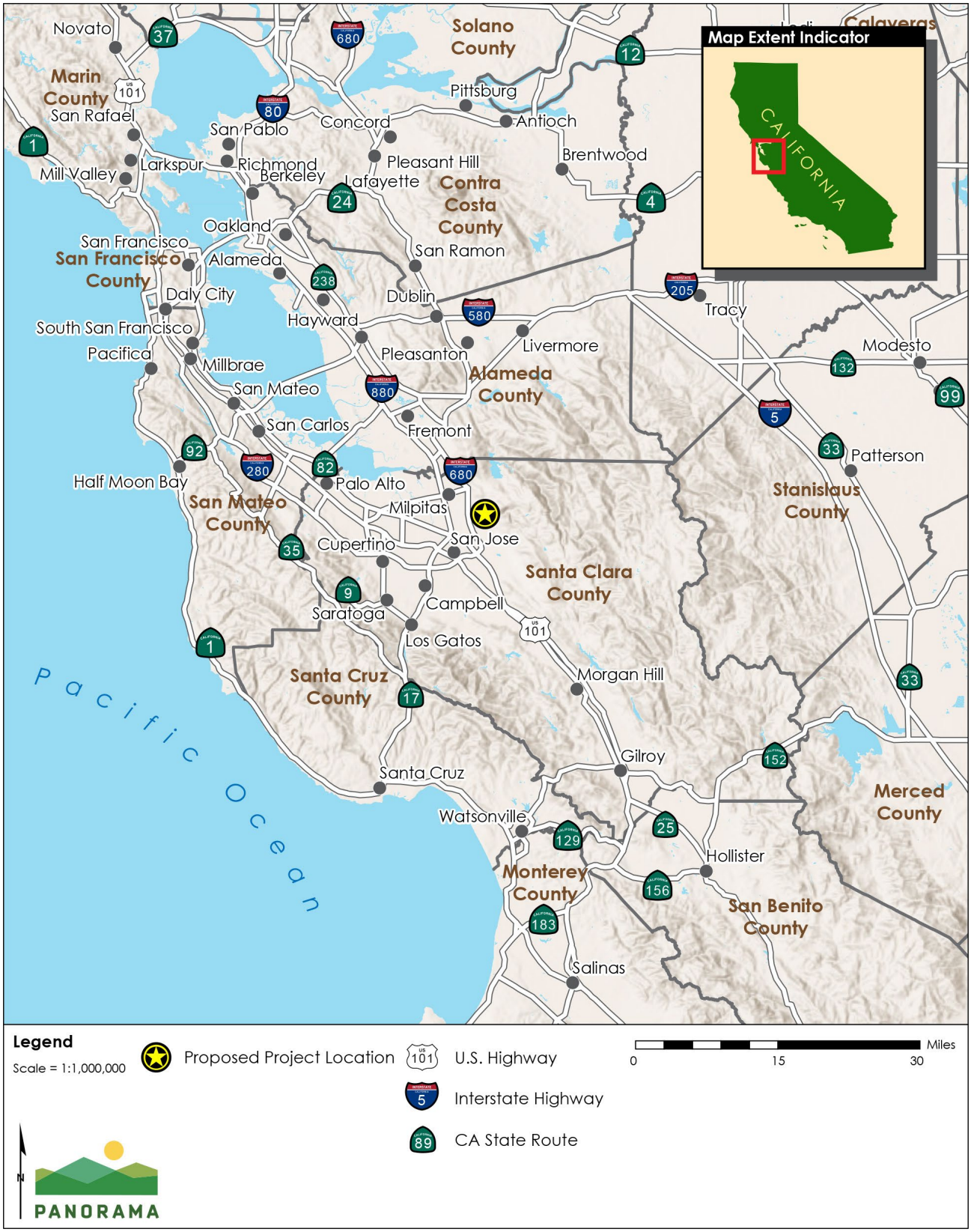

**Figure 2 Project Site**

Santa Clara Valley Water District

# Penitencia Water Treatment Plant (PWTP) Residuals Management Project

# Appendix H - Responses to Comments

December 2024

717 Market Street, Suite 400
San Francisco, CA 94103
650-373-1200
www.panoramaenv.com

PANORAMA ENVIRONMENTAL, INC.

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# 1 Public Review of the Draft IS/MND

## Public Review Period

This section includes comments received on the Penitencia Water Treatment Plant Residuals Management Project Initial Study/Mitigated Negative Declaration (IS/MND) during the public review period. The Draft IS/MND was circulated for a 30-day public review period from September 27, 2024 to October 28, 2024. The availability of the Draft IS/MND and opportunity for public comment was announced in an advertisement published in newspapers of general circulation including the San Jose Mercury News, on September 27, 2024, the Metro Silicon Valley on October 2-8, 2024, Vietnam Daily News on September 27, 2024, El Observador on September 27, 2024, and Chinese News on October 1, 2024. Notices were mailed to residents within 500 feet of the Project. The Notice of Intent (NOI) was emailed to 34 agencies and organization and 16 representatives of Native American Tribes on September 27, 2024. The NOI was also posted at the Santa Clara County Clerk's Office and via CEQANet on September 27, 2024. Copies of the NOI and newspaper notices are provided in Section 5 below.

Santa Clara Valley Water District (Valley Water) received a request from the California Department of Water Resources (DWR) to extend the comment period to November 18, 2024. Valley Water granted the extension and has provided responses to DWR comments.

## Comments Received

The Santa Clara Valley Water District received 2 comment letters on the Draft IS/MND. The commenters are listed in Table 1. Responses to comments are provided in Section 3.

**Table 1 Comments Received**

| Letter # | Commenter | Date |
|---|---|---|
| **Agencies** | | |
| 1 | California State Water Resources Board | 10/29/24 |
| 2 | California Department of Water Resources | 11/18/24 |

# 2 Summary and Conclusion

This document includes comments received by Valley Water during the public review period for the IS/MND for the Penitencia Water Treatment Plant Residuals Management Project (Project), and responses to those comments. There have been no changes to the Project or changed circumstances under which the Project would be undertaken requiring further analysis under CEQA. None of the circumstances described in State CEQA Guidelines § 15073.5(b) have occurred, meaning recirculation of the IS/MND is not required.

The conclusion of the IS/MND remains unchanged: the Project, with the incorporation of mitigation measures identified in the IS/MND, would have only less-than-significant environmental impacts. None of the comments provides substantial evidence to support a fair argument that the Project would have a significant effect on the environment. Therefore, per State CEQA Guidelines § 15064(f)(1), an Environmental Impact Report (EIR) is not required.

# 3 Comment Letters and Responses

The comment letters received on the Draft IS/MND and responses to those comments are provided below. The comment letters have been numbered sequentially and each separate issue raised by the commenter has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in comment Letter 1).

**LETTER 1**
**COMMENTER: California State Water Resources Control Board**
**DATE: October 29, 2024**

State Water Resources Control Board

October 29, 2024

Michael Coleman
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

Dear Michael Coleman:

INITIAL STUDY / MITIGATED NEGATIVE DECLARATION (IS/MND) FOR THE SANTA CLARA VALLEY WATER DISTRICT (WATER SYSTEM); PENITENCIA WATER TREATMENT PLANT RESIDUALS MANAGEMENT PROJECT (PROJECT); SANTA CLARA COUNTY; STATE CLEARINGHOUSE NO. 2024091149

**DOMESTIC WATER SUPPLY PERMIT AMENDMENT**
Thank you for the opportunity to review the IS/MND for the proposed Project. The State Water Resources Control Board, Division of Drinking Water (State Water Board, DDW) is responsible for issuing water supply permits pursuant to the Safe Drinking Water Act. This Project is within the jurisdiction of DDW Santa Clara District. DDW Santa Clara District issues domestic water supply permit amendments to the public water systems serviced with a new or modified source of domestic water supply or new domestic water system components pursuant to Waterworks Standards (Title 22 California Code of Regulations [Cal. Code Regs.] chapter 16 et. seq.). A public water system requires a new water supply permit amendment when changes are made to a domestic water supply source, storage, or treatment and for the operation of new water system components- as specified in the Cal. Code Regs. § 64556. The Water System will need to apply for a water supply permit amendment for approval of a change in domestic water supply treatment resulting from this Project.

**FUNDING**
We understand that the Water System is also pursuing Drinking Water State Revolving Fund (DWSRF) financing for this Project. As a funding agency and a state agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Board is providing the following water quality related comments on the IS/MND.

1.1

The State Water Board, Division of Financial Assistance, is responsible for administering the DWSRF Program (Program). The primary purpose for the Program is to implement the Safe Drinking Water Act and various state laws by providing financial assistance for drinking facilities improvements to provide clean potable drinking water,

E. JOAQUIN ESQUIVEL, CHAIR | ERIC OPPENHEIMER, EXECUTIVE DIRECTOR

1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | www.waterboards.ca.gov

and thereby protect and promote health, safety and welfare of the inhabitants of the state.

All applicants seeking DWSRF funding must comply with the California Environmental Quality Act (CEQA) and provide appropriate documents to the State Water Board so that it can fulfill its CEQA responsibilities, see CEQA Requirements. In addition, because the Program is partially funded by the United States Environmental Protection Agency additional federal environmental documentation (cross-cutters) may be required. For additional Program information, the complete environmental application package and instructions, please visit: Drinking Water State Revolving Fund Forms and Instructions.

1.1

Following are specific comments on the Water System's draft IS/MND:

- In section 1.5 Interagency Collaboration and Regulatory Review, Table 1.5-1 Summary of Agency Approvals, under "Agency" please include "State Water Resources Control Board, Division of Drinking Water" and under "Permit/Review" please include "water supply permit amendment for a change in domestic water supply treatment." Under "Agency", please also include "State Water Resources Control Board, Division of Financial Assistance" and under "Permit/Review" please include "possible Drinking Water State Revolving Fund financing."

1.2

- In section 2.6 Valley Water BMPs, Table 2.6-1 identifies the best management practices that will be implemented for the Project. Some best management practices are not referred to in the discussion but are included in the table. Other best management practices are referred to in the discussion and are not defined in the table. Please add to the table the missing best management practices that are referred to in the discussion. Please also refer to the best management practices that are listed within the table in the discussion where applicable.

1.3

If an application for funding will be submitted, please upload to Financial Assistance Application Submittal Tool the following applicable documents for the proposed Project: (1) one copy of the draft and final IS/MND with the Mitigation Monitoring and Reporting Program (MMRP), (2) the resolution adopting the IS/MND and the MMRP, (3) all comments received during the review period and the Water System's response to those comments, and (4) the Notice of Determination filed with the Santa Clara County Clerk and the Governor's Office of Planning and Research, State Clearinghouse. In addition, we would appreciate notices of any hearings or meetings held regarding environmental review of any projects to be funded by the State Water Board.

1.4

If funding will not be pursued, please forward the above requested documents with your permit amendment application to the State Water Board, DDW Santa Clara District Office at DWPDIST17@waterboards.ca.gov

Thank you for the opportunity to review the Water System's draft IS/MND. If you have any questions or concerns, please feel free to contact me at (916) 449-5285, or by

email at Lori.Schmitz@waterboards.ca.gov or contact Mrs. Bridget Binning at (916) 449-5641, or by email at Bridget.Binning@waterboards.ca.gov.

Sincerely,

Lori Schmitz Digitally signed by Lori Schmitz Date: 2024.10.29 09:25:36 -07'00'

Water Boards

Lori Schmitz
Environmental Scientist
Division of Financial Assistance
Special Project Review Unit
1001 I Street, 16th floor
Sacramento, CA 95814

cc: State Clearinghouse

Bridget Binning, Division of Financial Assistance

Van Tsang, Division of Drinking Water

## Response to Letter 1

**Response 1.1**
The comment states the requirements for obtaining DWRSF Funding. The comment is noted and does not affect the environmental analysis in the IS/MND.

**Response 1.2**
The comment requests the addition of the State Water Resources Control Board Division of Drinking Water and the State Water Resources Control Board Division of Financial Assistance in the Agency Approval section with corresponding permit/review actions.

Section 1.5, Interagency Collaboration and Regulatory Review is amended as indicated in Section 4 of this document to include the State Water Resources Board Division of Drinking Water and Division of Financial Assistance as potential permitting/reviewing agencies. The addition of the potential permitting agencies does not affect the analysis of environmental effects in the IS/MND.

**Response 1.3**
The comment requests that Table 2.6-1 of Valley Water Best Management Practices (BMPs) be revised to reflect those BMPs that are discussed in the IS/MND and those BMPs that are not included in the analysis be removed from the table.

Table 2.6-1 has been amended as indicated in Section 4 of this document to include the missing BMP discussed in the IS/MND and remove BMPs that are not part of the impact analysis. The BMPs have also been added to the Final MMRP in Appendix A. The added BMPs reflect the revisions incorporated in Section 4.

**Response 1.4**
The comment states the process and requirements for submitting a funding application to the State Water Resources Board. Additionally, the comment shares an alternative process if funding is not sought out.

The comment is noted and does not affect the analysis in the IS/MND.

**LETTER 2**
**COMMENTER: California Department of Water Resources**
**DATE: November 18, 2024**

Docusign Envelope ID: 8F66DFB7-01BA-4890-B508-9315D4529F9B

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY GAVIN NEWSOM, Governor

**DEPARTMENT OF WATER RESOURCES**
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

11/18/2024

Mr. Michael Martin
Senior Water Resources Specialist
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3614
PWTPcomments@valleywater.org

SCH# 2024091149 Penitencia Water Treatment Plant (PWTP) Residuals Management Project Mitigated Negative Declaration (MND)

Dear Mr. Martin:

The California Department of Water Resources, Division of Operations and Maintenance Right of Way Management Section (DWR) has conducted a preliminary review of the PWTP Residuals Management project Mitigated Negative Declaration and has the following comments.

**Project Description**

The proposed PWTP Residuals Management Project (project) would improve the washwater handling and treatment, sludge handling and dewatering, and sedimentation basin sludge withdrawal component of the PWPT Residual Management System (RMS). The project is located within the PWTP 21.58 acres site and includes demolition of existing facilities and improvements within a 3-acre portion of the PWTP site and a construction staging area in a separate 0.52-acre site within the PWTP site. An additional 0.33-acre staging area will be located along the upper portion of Whitman Way on a parcel that Santa Clara Valley Water District owns.

**General Comment**

DWR holds an easement within the Penitencia Water Treatment Plant facility property that was granted to DWR by Santa Clara County Flood Control and Santa Clara County Water District. It appears the project encroaches on DWR easement which could result in a direct impact on or conflict with DWR's facilities operated and maintained within DWR's easement area.

2.1

**Specific Comments**

**Scope of Work Figure**

The Scope of Work section's Figure 2.3-1 shows the location of the plant and the current condition of existing facilities.

2.2

Docusign Envelope ID: 8F66DFB7-01BA-4890-B508-9315D4529F9B



The figure does not include the easement granted to DWR by Santa Clara County Flood Control and Santa Clara County Water District within the Penitencia Water Treatment Plant facility property. DWR requests that the easement area and DWR facilities located within the project area, including the 72" diameter pipe, 60" diameter pipe, 66" diameter pipe, the Terminal Reservoir (160' dia.x20' high), and a 42" diameter overflow line be added to Figure 2.3-1. Attached is DWR's Spec. No. 64-24 as-builts for the facilities. 2.2

**Project Location**

DWR's Division of Operations and Maintenance Right of Way Management Section has identified the following project components that may result in a direct impact on or conflict with these facilities operated and maintained within DWR's easement. The following is a list of DWR concerns and suggested modifications to the project to address the concerns. 2.3

- Figure 2.3-1: The temporary staging area on the north end is close to DWR's 72-inch pipeline. The staging area near the south end of Washwater Ponds is near DWR's 42-inch overflow line. The staging area at the southwest corner of Vista Del Mar and Whitman Way is over DWR's 42-inch overflow line and should be moved away for the pipeline and outside DWR's easement. All staging areas need to be kept outside of DWR's easement and at a safe distance from the pipeline.

- Figure 2: The proposed impact area boundary encompasses DWR's 72-inch pipeline on the north side of Sludge Holding Pondsy. It is not clear what project activities would be undertaken in the easement area where the 72-inch pipeline is located. Please clarify what activities will take place in this area and indicate whether project construction activities will take place directly over the pipeline. 2.4

- Section 2.4.9: Explains "[t]he project construction is proposed to begin between 2025 to 2030 and would be completed in approximately 5 years with the first 6 to 9 months consisting of mobilization and staging. The first 3 to 4 years would involve near-continuous construction activities. Facility outages would occur in the low-demand months (November to March) when possible". The MND does not provide information as to whether the construction activities may limit access to DWR facilities in the project area and whether the facility outages would apply to DWR facilities. Please provide information as to whether mobilization staging and construction activities would impact DWR's ability to access our facilities and whether DWR facilities would be impacted by the outages. Please contact Josephine Miyata (contact information below) to discuss these issues. 2.5

- Section 2.3.1: Per the Scope of Work, there are proposed electrical conduits, yard piping, service road extensions, and landscaping. The MND does not provide sufficient information to determine whether any of these features or any other features listed in the Scope of Work would need to cross DWR easement. Please contact Josephine Miyata to discuss this issue. 2.6

Docusign Envelope ID: 8F66DFB7-01BA-4890-B508-9315D4529F9B



2.7

- If construction equipment will be crossing over DWR pipelines, which seems likely considering DWR's 72-inch pipeline crosses under Whitman Way and the 42-inch overflow pipeline crosses Vista Del Mar Road, further information on the planned equipment crossings needs to be submitted to DWR for review and approval.

Please contact Josephine Miyata, Senior Right of Way Agent, at Josephine.Miyata@water.ca.gov or (916) 398-1565 to resolve our concerns regarding the project's potential interference with DWR's easement rights to protect DWR facilities and operations in the project area.

If you have any questions or need additional information, my contact information is Nancy.Finch@water.ca.gov or (916) 820-8124.

Sincerely,

nancy finch

Nancy Finch
Attorney III
Office of the General Counsel

enclosure

## Response to Letter 2

**Response 2.1**
The comment discusses DWR's easements and expresses concern about encroachment on the DWR easement. The Project has been designed to avoid encroachment on DWR easements. DWR easements have been considered by the engineering team during the design process and encroachment is avoided in the final Project design. The clarification of the location of DWR easements does not affect the analysis of environmental effects in the IS/MND.

**Response 2.2**
The comment requests the revision of Figure 2.3-1 to include the DWR easement within the project boundaries. Figure 2.3-1 is intended to provide information to the general public about the location of proposed Project facilities and work areas. Figure 2.3-1 was developed at a concept level and does not reflect the Final design. While not necessary to support the CEQA process, Santa Clara Valley Water District has prepared a version of Figure 2.3-1, which includes DWR easements below.

The staging areas have been revised in the final Project design to avoid overlap with DWR easements. No Project construction or activities are proposed within DWR easements. The clarification of the location of DWR easements does not affect the analysis of environmental effects in the IS/MND.

**Response 2.3**
The comment shares concerns over staging area proximity to DWR easement and infrastructure. See response to comment 2.2. The final Project design does not include any activities within DWR easements.

**Response 2.4**
The comment shares concerns over proposed project activity near DWR infrastructure. See response to comment 2.2. The final Project design does not include any activities within DWR easements.

**Response 2.5**
The comment shares concerns over maintaining access to DWR easements and infrastructure throughout the duration of the proposed activities. Project staging areas, equipment, and activities have been identified and refined to not encroach on DWR easements and infrastructure. Access to DWR easements and infrastructure would be maintained throughout the duration of Project construction and operation activities. The clarification of the location of DWR easements does not affect the analysis of environmental effects in the IS/MND.

**Response 2.6**
The comment expresses concern regarding yard piping, landscaping, and other activities with DWR easements. See response to comment 2.2. The final Project design does not include infrastructure or landscaping within DWR easements.

**Response 2.6**
The comment shares concerns over the potential for construction equipment encroachment on DWR infrastructure. See response to comment 2.2. The final Project design does not include activities within DWR easements.

# 4 Draft IS/MND Revisions

## Introduction

This chapter presents revisions that have been made to the Draft IS/MND text. These revisions provide corrections, additions, or clarifications as requested by specific comments. The text revisions are organized by chapter. The underlined text represents language that has been added to the Draft IS/MND. Text removed from the Draft IS/MND is represented has been struck through.

## 1.5 Interagency Collaboration and Regulatory Review

**Table 1.5-1 Summary of Agency Approvals**

| Agency | Permit/Review |
|---|---|
| California Department of Fish and Wildlife | Review of MND For compliance with California Endangered Species Act |
| San Francisco Bay Regional Water Quality Control Board | Clean Water Action Section 402 Stormwater General Permit<br>Review of Clean Water Act Section 402(p) Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit |
| Bay Area Air Quality Management District | Permit for emergency standby generator rated 50 horse break power or greater |
| City of San Jose Fire Department | Review of Hazardous Materials Business Plan |
| State Water Resources Control Board, Division of Drinking Water | Water Supply Permit Amendment for a change in domestic water supply treatment |
| State Water Resources Control Board, Division of Financial Assistance | Possible Drinking Water State Revolving Fund Financing |

## 2.6 Valley Water BMPs

The text on page 2-17 is updated as follows to reference the current BMP Handbook and the measures in Table 2.6-1 are updated consistent with the IS/MND analysis as referenced in the response to comments:

> Best management practices (BMPs) are practices that prevent, avoid, or minimize potentially adverse effects associated with construction and other activities. Project

BMPs reflect the BMPs in the ~~2014~~ 2025 *Best Management Practices Handbook: Santa Clara Valley Water District Comprehensive List* and are included in Table 2.6-1.

**Table 2.6-1 Best Management Practices**

| BMP | Description |
|---|---|
| AQ-1<br>Use Dust Control Measures | The following Bay Area Air Quality Management District (BAAQMD) Dust Control Measures will be implemented:<br>• All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.<br>• All haul trucks transporting soil, sand, or other loose material off-site shall be<br>• covered.<br>• All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.<br>• Water used to wash the various exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, etc.) will not be allowed to enter waterways.<br>• All vehicle speeds on unpaved roads shall be limited to 15 mph.<br>• All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.<br>• Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure CCR Title 13, Section 2485), and this requirement shall be clearly communicated to construction workers (such as verbiage in contracts and clear signage at all access points).<br>• All construction equipment shall be maintained and properly tuned in accordance with manufacturers specifications, and all equipment shall be checked by a certified visible emissions evaluator.<br>• Correct tire inflation shall be maintained in accordance with manufacturers specifications on wheeled equipment and vehicles to prevent excessive rolling resistance.<br>• Post a publicly visible sign with a telephone number and contact person at the lead agency to address dust complaints; any complaints shall be responded to and take corrective action within 48 hours. In addition, a BAAQMD telephone number with any applicable regulations will be included. |
| ~~AQ-2~~<br>~~Avoid Stockpiling Odorous Materials~~ | ~~Materials with decaying organic material, or other potentially odorous materials, will be handled in a manner that avoids impacting residential areas and other sensitive receptors, including:~~<br>~~1. Avoid stockpiling potentially odorous materials within 1,000 feet of residential areas or other odor sensitive land uses; and~~<br>~~2. Odorous stockpiles will be disposed of at an appropriate landfill.~~ |
| BI-5<br>Avoid Impacts to Nesting Migratory Birds | Nesting birds are protected by state and federal laws. The District will protect nesting birds and their nests from abandonment, loss, damage, or destruction. Nesting bird surveys will be performed by a qualified biologist prior to any activity that could result in the abandonment, loss, damage, or destruction of birds, bird nests, or nesting migratory birds. Inactive bird nests |

| BMP | Description |
|---|---|
| | may be removed with the exception of raptor nests. Birds, nests with eggs, or nests with hatchlings will be left undisturbed |
| BI-6<br>Avoid Impacts to Nesting Migratory Birds from Pending Construction | Nesting exclusion devices may be installed to prevent potential establishment or occurrence of nests in areas where construction activities would occur. All nesting exclusion devices will be maintained throughout the nesting season or until completion of work in an area makes the devices unnecessary. All exclusion devices will be removed and disposed of when work in the area is complete. |
| ~~BI-8~~<br>~~Choose Local Ecotypes of Native Plants and Appropriate Erosion- Control Seed Mixes~~ | ~~Whenever native species are prescribed for installation, the following steps will be taken by a qualified biologist or vegetation specialist:~~<br>• ~~Evaluate whether the plant species currently grows wild in Santa Clara County.~~<br>• ~~If so, the qualified biologist or vegetation specialist will determine if any need to be local natives, i.e. grown from propagules collected in the same or adjacent watershed, and as close to the Project site as feasible.~~<br>• ~~Also, consult a qualified biologist or vegetation specialist to determine which seeding option is ecologically appropriate and effective, specifically the following:~~<br>• ~~For areas that are disturbed, an erosion control seed mix may be used consistent with the Valley Water Guidelines and Standards for Land Use Near Streams, Design Guide 5, Temporary Erosion Control Options.~~<br>• ~~In areas with remnant native plants, the qualified biologist or vegetation specialist may choose an abiotic application instead, such as an erosion control blanket or seedless hydro-mulch and tackifier to facilitate passive revegetation of local native species~~<br>• ~~Temporary earthen access roads may be seeded when site and horticultural conditions are suitable~~<br>• ~~If a gravel or wood mulch has been used to prevent soil compaction, this material may be left in place [if ecologically appropriate] instead of seeding.~~<br>• ~~Seed selection shall be ecologically appropriate as determined by a qualified biologist, per *Guidelines and Standards for Land Use Near Streams, Design Guide 2: Use of Local Native Species*.~~ |
| ~~BI-10~~<br>~~Avoid Animal Entry and Entrapment~~ | ~~All pipes, hoses, or similar structures less than 12 inches diameter will be closed or covered to prevent animal entry. All construction pipes, culverts, or similar structures greater than 2 inches diameter stored at a construction site overnight will be inspected thoroughly for wildlife by a qualified biologist or properly trained construction personnel before the pipe is buried, capped, used, or moved. If inspection indicates presence of sensitive or State or federally listed species inside stored materials or equipment, work on those materials will cease until a qualified biologist determines the appropriate course of action.~~<br>~~To prevent entrapment of animals, all excavations, steep-walled holes, or trenches more than 6 inches deep will be secured against animal entry at the close of each day. Any of the following measures may be employed, depending on the size of the hole and method feasibility:~~<br>• ~~Hole will be securely covered (no gaps) with plywood or similar materials at the close of each working day, or any time the opening will be left unattended for more than one hour.~~ |

| BMP | Description |
|---|---|
| | ~~• In the absence of covers, the excavation will be provided with escape ramps constructed of earth or untreated wood, sloped no steeper than 2:1, and located no farther than 15 feet apart.~~<br>~~• In situations where escape ramps are infeasible, the hole or trench will be surrounded by filter fabric fencing or a similar barrier with the bottom edge buried to prevent entry.~~ |
| ~~BI-11~~<br>~~Minimize Predator-Attraction~~ | ~~Remove trash daily from the worksite to avoid attracting potential predators to the site.~~ |
| CU-1<br>Accidental Discovery of Archaeological Artifacts, Tribal Cultural Resources, or Burial Remains | If historical or unique archaeological artifacts or tribal cultural resources are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Work at the location of the find will halt immediately within 100 feet of the find. A "no work" zone shall be established utilizing appropriate flagging to delineate the boundary of this zone. A Consulting Archaeologist will visit the discovery site as soon as practicable for identification and evaluation pursuant to PRC section 21083.2 and CCR section 15126.4. If the archaeologist determines that the artifact is not significant, construction may resume. If the archaeologist determines that the artifact is significant, the archaeologist will determine if the artifact can be avoided and, if so, will detail avoidance procedures. If the artifact cannot be avoided, the archaeologist will develop within 48 hours an Action Plan, which will include provisions to minimize impacts and, if required, a Data Recovery Plan for recovery of artifacts in accordance with PRC section 21083.2 and Section 15126.4 of the CEQA Guidelines. If a tribal cultural resource cannot be avoided, the Action Plan will include notification of the appropriate Native American tribe and consultation with the tribe regarding acceptable recovery options.<br>If burial finds are accidentally discovered during construction, work in affected areas will be restricted or stopped until proper protocols are met. Upon discovering any burial site as evidenced by human skeletal remains, the County Coroner will be immediately notified, and the field crew supervisor shall take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent. No further excavation or disturbance within 100 feet of the site or any nearby area reasonably suspected to overlie adjacent remains may be made except as authorized by the County Coroner, California Native American Heritage Commission, and/or the County Coordinator of Indian Affairs. |
| HM-7<br>Restrict Vehicle and Equipment Cleaning to Appropriate Locations | Vehicles and equipment may be washed only at approved areas. No washing of vehicles or equipment will occur at job sites. |
| HM-8<br>Ensure Proper Vehicle and Equipment Fueling and Maintenance | • No fueling or servicing will be done in a waterway or immediate flood plain unless equipment stationed in these locations is not readily relocated (i.e., pumps, generators).<br>• For stationary equipment that must be fueled or serviced on site, containment will be provided in such a manner that any accidental spill will not be able to come in direct contact with soil, surface water, or the storm drainage system.<br>• All fueling or servicing done at the site will provide containment to the degree that any spill will be unable to enter any waterway or damage riparian vegetation. |

| BMP | Description |
|---|---|
| | • All vehicles and equipment will be kept clean. Excessive build-up of oil and grease will be prevented.<br>• All equipment used in the bay or flood basin will be inspected for leaks each day prior to initiation of work. Maintenance, repairs, or other necessary actions will be taken to prevent or repair leaks, prior to use.<br>• If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location will be done in a waterway or flood plain. |
| HM-9<br>Ensure Proper Hazardous Materials Management | • Measures will be implemented to ensure that hazardous materials are properly handled and the quality of water resources is protected by all reasonable means.<br>• Prior to entering the work site, all field personnel will know how to respond when toxic materials are discovered.<br>• Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage.<br>• Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials will not contact soil and not be allowed to enter surface waters or the storm drainage system.<br>• All toxic materials, including waste disposal containers, will be covered when they are not in use and located as far away as possible from a direct connection to the storm drainage system or surface water.<br>• Quantities of toxic materials, such as equipment fuels and lubricants, will be stored with secondary containment that is capable of containing 110 percent of the primary container(s).<br>• The discharge of any hazardous or non-hazardous waste as defined in Division 2, Subdivision 1, Chapter 2 of the California Code of Regulations will be conducted in accordance with applicable State and federal regulations.<br>• In the event of any hazardous material emergencies or spills, personnel will call the Chemical Emergencies/Spills Hotline at 1-800-510-5151. |
| HM-10<br>Utilize Spill Prevention Measures | To prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water, the following measures will be implemented:<br>• Field personnel will be appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills.<br>• Equipment and materials for cleanup of spills will be available on site, and spills and leaks will be cleaned up immediately and disposed of according to applicable regulatory requirements.<br>• Field personnel will ensure that hazardous materials are properly handled and natural resources are protected by all reasonable means.<br>• Spill prevention kits will always be in close proximity when using hazardous materials (e.g., at crew trucks and other logical locations), and all field personnel will be advised of these locations.<br>• The work site will be routinely inspected to verify that spill prevention and response measures are properly implemented and maintained. |

| BMP | Description |
|---|---|
| HM-12<br>Incorporate Fire Prevention Measures | All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors.<br>• During the high fire danger period (April 1–December 1), work crews will have appropriate fire suppression equipment available at the work site.<br>• An extinguisher shall be available at the work site at all times when welding or other repair activities that can generate sparks (such as metal grinding) is occurring.<br>• Smoking shall be prohibited except in designated staging areas and at least 20 feet from any combustible chemicals or vegetation. |
| ~~HM-13~~<br>~~Avoid Impacts from Naturally Occurring Asbestos~~ | ~~The District will comply with and implement BAAQMD dust control measures and notification requirements when working in serpentine soils.~~ |
| WQ-4<br>Limit Impacts from Staging and Stockpiling Materials | • To protect on-site vegetation and water quality, staging areas should occur on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. Similarly, all equipment and materials (e.g., road rock and spoils) will be contained within the existing access roads or other pre-determined staging areas.<br>• Building materials and other project-related materials, including chemicals and sediment, will not be stockpiled or stored where they could spill into water bodies.<br>• No runoff from the staging areas shall be allowed to enter water ways without being subjected to adequate filtration (e.g., vegetated buffer, swale, hay wattles or bales, silt screens).<br>• The discharge of decant water to water ways from any on site temporary sediment stockpile or storage areas is prohibited.<br>• During the wet season, no stockpiled soils will remain exposed unless surrounded by properly installed and maintained silt fencing or other means of erosion control. During the dry season, exposed, dry stockpiles will be watered, enclosed, covered, or sprayed with non-toxic soil stabilizers. |
| WQ-5<br>Stabilize Construction Entrances and Exits | Measures will be implemented to minimize the tracking of soil onto streets near work site:<br>1. Methods used to prevent mud from being tracked out of work sites onto roadways will include installing a layer of geotextile mat followed by a 4-inch-thick layer of 1-to-3-inch diameter gravel on unsurfaced access roads.<br>2. Access will be provided as close to the work area as possible, using existing ramps where available and planning work site access so as to minimize disturbance to the water body bed and banks as well as the surrounding land uses. |
| WQ-9<br>Use Seeding for Erosion Control, Weed Suppression, and | Disturbed areas shall be seeded with native seed as soon as is appropriate after activities are complete. An erosion control seed mix will be applied to exposed soils down to the ordinary high water mark in streams.<br>1. The seed mix should consist of California native grasses, (for example Hordeum brachyantherum; Elymus glaucus; and annual Vulpia microstachyes) or annual, sterile hybrid seed mix (e.g., Regreen™, a wheat x wheatgrass hybrid). |

| BMP | Description |
|---|---|
| Site Improvement | 2. Temporary earthen access roads may be seeded when site and horticultural conditions are suitable, or have other appropriate erosion control measures in place. |
| WQ-11<br>Maintain Clean Conditions at Work Sites | • The work site, areas adjacent to the work site, and access roads will be maintained in an orderly condition, free and clear from debris and discarded materials on a daily basis. Personnel will not sweep, grade, or flush surplus materials, rubbish, debris, or dust into storm drains or waterways.<br>• For activities that last more than one day, materials or equipment left on the site overnight will be stored as inconspicuously as possible, and will be neatly arranged. Any materials and equipment left on the site overnight will be stored to avoid erosion, leaks, or other potential impacts to water quality<br>• Upon completion of work, all building materials, debris, unused materials, concrete forms, and other construction-related materials will be removed from the work site. |
| WQ-13 Protect Groundwater from Contaminates Via Wells or Exploratory Borings | Any substances or materials that may degrade groundwater quality will not be allowed to enter any well or boring. Lubricants used on drill bits, drill pipe, or tremie pipe will not be comprised of oily or greasy substances or other materials that may degrade groundwater quality.<br>Well openings or entrances will be sealed or secured in such a way as to prevent the introduction of contaminants. |
| ~~WQ-15~~<br>~~Prevent Water Pollution~~ | ~~Oily, greasy, or sediment laden substances or other material that originate from the project operations and may degrade the quality of surface water or adversely affect aquatic life, fish, or wildlife will not be allowed to enter, or be placed where they may later enter, any waterway.~~<br>~~The project will not increase the turbidity of any watercourse flowing past the construction site by taking all necessary precautions to limit the increase in turbidity as follows:~~<br>~~1. where natural turbidity is between 0 and 50 Nephelometric Turbidity Units (NTU), increases will not exceed 5 percent;~~<br>~~2. where natural turbidity is greater than 50 NTU, increases will not exceed 10 percent;~~<br>~~3. where the receiving water body is a dry creek bed or storm drain, waters in excess of 50 NTU will not be discharged from the project.~~<br>~~Water turbidity changes will be monitored. The discharge water measurements will be made at the point where the discharge water exits the water control system for tidal sites and 100 feet downstream of the discharge point for non-tidal sites. Natural watercourse turbidity measurements will be made in the receiving water 100 feet upstream of the discharge site. Natural watercourse turbidity measurements will be made prior to initiation of project discharges, preferably at least 2 days prior to commencement of operations.~~ |
| WQ-16<br>Prevent Storm Water Pollution | To prevent stormwater pollution, the following measures will be implemented:<br>1. Soils exposed due to project activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. Areas below the ordinary high-water mark of the flood basin or below the mean higher high water line of the bay are exempt from this BMP. |

| BMP | Description |
|---|---|
| | 2. The preference for erosion control fabrics will be to consist of natural fibers; however, steeper slopes and areas that are highly erodible may require more structured erosion control methods. No non-porous fabric will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff, but only if there are no indications that special status species would be impacted by the application.<br>3. Erosion control measures will be installed according to manufacturer specifications.<br>4. To prevent stormwater pollution, measures to be implemented as appropriate will include, but not be limited to, the following:<br>– Silt fences<br>– Straw bale barriers<br>– Brush or rock filters<br>– Storm drain Inlet protection<br>– Sediment traps or sediment basins<br>– Erosion control blankets and/or mats<br>– Soil stabilization (e.g., tackified straw with seed, jute, or geotextile blankets)<br>– Straw mulch<br>5. All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g. silt fences).<br>6. Surface barrier applications installed as a method of animal conflict management, such as chain link fencing, woven geotextiles, and other similar materials, will be installed no longer than 300 feet, with at least an equal amount of open area prior to another linear installation. |
| ~~WQ-17 Manage Sanitary and Septic Waste~~ | ~~Temporary sanitary facilities will be located in compliance with California Division of Occupational Safety and Health (Cal/OSHA) regulation 8 California Code of Regulations section 1526. All temporary sanitary facilities will be located where overflow or spillage will not enter a watercourse directly (overbank) or indirectly (through a storm drain).~~ |

### 4.2.4 Biological Resources

The text on Page 4-42 under Response e) is revised as follows to account for the potential removal of trees and clarify that the trees that would be removed do not meet the city definition of street trees, heritage trees, or ordinance size trees:

> No, the project would not have the impact described. The Project site includes trees. The City of San Jose requires permits to remove street trees, heritage trees, ordinance-size trees, or any tree located on multifamily, commercial industrial, or mixed use property in a common area (City of San Jose, n.d.-b). While project grading or road improvements may require removal of trees, ~~N~~no street trees, heritage trees, or ordinance size trees occur in the project site and the project is not located on a multifamily, commercial industrial or mixed use property or in a common area. ~~No trees would be removed for temporary staging~~

~~activities.~~ As such, no tree removal permits would be required and the project would not conflict with the City's tree removal requirements and **no impact** would occur.

### 4.2.18 Tribal Cultural Resources

The text under Environmental Setting on page 4-118 is revised for clarify as follows:

Effective July 2015, Assembly Bill (AB52) requires (1) a lead agency to provide notice to any California Native American tribes that have requested notice of projects proposed by the lead agency, and (2) if a tribe requests consultation within 30 days upon receipt of the notice, the lead agency to consult with the tribe. ~~As of this time, Valley Water has not received written requests from any California Native American Tribes to receive such notifications~~.

CEQA section 21074.2 requires the lead agency to consider the effects of a project on tribal cultural resources. As defined in section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on a national, State, or local register of historical resources.

Far Western Anthropological Research Group, Inc., submitted a Sacred Lands File search request to the Native American Heritage Commission (NAHC) on July 7, 2023. Far Western Anthropological Research Group, Inc., received a response from the NAHC on July 26, 2024, stating that a search of the Sacred Lands File provided negative results.

Two California Native American tribes, specifically Muwekma Ohlone Indian Tribe and Tamien Nation, had previously requested to be notified of Valley Water projects. Valley Water sent notification to these two tribes on August 25, 2023 in compliance with AB 52. The notification letters are provided in Appendix G. No responses were received from ~~any~~ the tribes. Therefore, no AB 52 consultation is required for the project.

# 5 Notices

This chapter presents copies of the Notice of Intent (NOI) that were sent to public agencies, organizations, applicable individuals, and shared in local newspapers. The NOI was translated into several languages in for a variety of audiences.

**Figure 5-1 Valley Water Notice of Intent**

Notice of Intent to Adopt a
**MITIGATED NEGATIVE DECLARATION**

Valley Water

**Topic:** Penitencia Water Treatment Plant (PWTP) Residuals Management Project

**What:** Notice of Intent to adopt a Mitigated Negative Declaration

**Why:** Pursuant to the California Environmental Quality Act, Santa Clara Valley Water District (Valley Water), as the lead agency for the proposed Penitencia Water Treatment Plant (PWTP) Residuals Management Project, has prepared a Draft Initial Study/Mitigated Negative Declaration (IS/MND) to evaluate environmental impacts of the Project.

In accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000 et seq.) and CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study of the Penitencia Water Treatment Plant (PWTP) Residuals Management Project was prepared to evaluate environmental impacts. Based on the Initial Study, it has been determined that a Mitigated Negative Declaration (MND) is the appropriate level of review. This is a Notice of Intent to adopt an MND for this project in accordance with CEQA Guidelines Section 15072.

**Project Location:** The Project is located within the Penitencia Water Treatment Plant, addressed as 3959 Whitman Way, San Jose, CA 95132.

**Project Description:** Penitencia Water Treatment Plant (PWTP) Residuals Management Project (Project) involves improvements to various components of the PWTP Residuals Management System. The existing PWTP operations are constrained due to inefficiencies of the Residuals Management System in meeting current regulatory standards. The project will address the following components of the PWTP Residuals Management System: washwater handling and treatment, sludge handling and dewatering, and sedimentation basin sludge withdrawal. The project would address age, capacity, efficiency, and reliability issues with the existing Residuals Management System. Additionally, the project would ensure that the PWTP efficiently and reliably provides potable water to retailers in Valley Water's service area and meets current regulatory standards. The project construction is proposed to begin in 2025 and be complete by 2030.

**Public Review:** Valley Water will release the Draft IS/MND on the project for public review beginning on Friday **September 27, 2024**, and ending on Monday **October 28, 2024**. The Draft IS/MND may be reviewed at ***valleywater.org/public-review-documents***.

The Draft IS/MND is also available for in-person review during normal business hours at:

- Valley Water, 5750 Almaden Expressway, San José, CA 95118
- City of San Jose, Berryessa Branch Library located at 3355 Noble Ave, San Jose, CA 95132.

The public comment period on the Draft MND will run for 30 days upon Valley Water's electronic posting of the document beginning Friday September 27, 2024. The public comment period closes at 5 p.m. on **Monday October 28, 2024**.

**Comments:** Written comments can be emailed to **PWTPcomments@valleywater.org**. Please include the name and mailing address of the commenter in the body of the email and add "Penitencia Water Treatment Plant (PWTP) Residuals Management Project" in the subject line.

Written comments on the Draft IS/MND should be submitted electronically via email or by hard copy via US mail by 5 p.m. not later than 5 pm on **Monday, October 28, 2024**.

Comments by US Mail should be sent to:

Santa Clara Valley Water District
C/O Michael F. Coleman, AICP
Environmental Planner
5750 Almaden Expressway, San Jose, CA 95118

For additional information, please contact Michael Coleman at (408) 630-3096 or via email at: mcoleman@valleywater.org.

**valleywater.org** Clean Water • Healthy Environment • Flood Protection

## Figure 5-2 Notice of Intent in The Mercury News

FRIDAY, SEPTEMBER 27, 2024 111 BAY AREA NEWS GROUP A9

Other Views

MIDDLE EAST CONFLICTS

# Hezbollah is more than Israel's problem

By Bret Stephens

In 2006, Hezbollah launched a guerrilla raid into Israel. It led to a 34-day war that devastated Lebanon, traumatized Israel, and concluded with a U.N. resolution that was supposed to disarm the terrorist militia and keep its forces far from the border.

The resolution did neither.

Instead, a combination of international wishful thinking and the willfulness of Hezbollah's patrons in Iran have brought us to where we are now — the cusp of a conflict that could dwarf the scale of fighting in the Gaza Strip. Can a full-blown war be avoided? Hard to say. Can the lessons of 2006 lead to a better outcome this time? That's the important question.

• First lesson: Tactical brilliance is not a substitute for sound strategy. In 2006, the Israeli air force, operating on excellent intelligence, was able to knock out many of Hezbollah's longer-range rockets — often hidden in homes — by the second night of the war. The strike surely helped spare scores, if not hundreds, of Israeli lives.

But Israel had little idea of how to fight the war after that, other than through a bombing campaign whose ferocity generated acute diplomatic pressure for the war to end, along with a belated Israeli ground incursion that got badly mauled by Hezbollah. Does Israel have a better plan today?

### The real enemy

• Second lesson: Hezbollah is not Israel's main enemy. Iran is. Or, to borrow a metaphor from former Israeli Prime Minister Naftali Bennett, Tehran, Iran's capital, is the head of the octopus, and Hezbollah — like Hamas in Gaza or the Houthis in Yemen — is merely one of its tentacles. By going to war with Hezbollah, Israel risks exhausting itself in a secondary fight.

HUSSEIN MALLA/ASSOCIATED PRESS

Hezbollah members carry the coffins of two of their comrades, who were killed when handheld devices exploded en masse, in the southern suburbs of Beirut on Sept. 19.

**'Tehran, Iran's capital, is the head of the octopus, and Hezbollah — like Hamas in Gaza or the Houthis in Yemen — is merely one of its tentacles.'**

That doesn't mean that Israel can afford to ignore Hezbollah; its arsenal of 120,000 to 200,000 missiles and rockets poses a dire and direct threat to the Israeli home front. But the only way in which Israel restores its deterrence is by imposing costs directly on Hezbollah's masters. Tehran, not Beirut, is the real center of gravity in this fight.

• Third lesson: Do not make an enemy of the Lebanese people.

Except in its Shiite strongholds, polling by the Arab Barometer shows, Hezbollah is unpopular among most Lebanese. With good reason: The group has hijacked their country, murdered their most beloved leaders, turned much of the country into a target and devoted its resources to building a vast military infrastructure even as the national economy has collapsed.

Israel can't hope to turn Lebanon into any kind of ally — that fantasy died with the Syrian-backed assassination of Bashir Gemayel, Lebanon's Israel-aligned president-elect, in 1982. But it should not repeat the 2006 mistake of trying to create deterrence through demonstrations of brute force. The kind of targeted strikes demonstrated by last week's pager attacks are vastly more effective in erasing Hezbollah's aura of invincibility.

• Fourth lesson: Keep the U.N. out of it. In theory, the Security Council's Resolution 1701, which ended the 2006 war, empowered a U.N. peacekeeping force to prevent Hezbollah from placing its forces close to the Israeli border. In reality, the U.N. peacekeepers did nothing of the sort, at a cost of billions to U.S. taxpayers.

If the United States or Europeans want to create a buffer area between Israel and Hezbollah, they should deploy their own troops under a NATO flag or perhaps invite Arab states to send forces. Otherwise, the re-establishment of the Israeli-controlled security zone in southern Lebanon that existed from 1985 to 2000 might, for all the long-term problems it continues to present, be the least-bad alternative.

### Help Israel win

• Fifth lesson: The proper role for the United States in the crisis is not to seek a diplomatic solution. It's to help Israel win.

Until Sept. 11, 2001, no terrorist group had murdered more Americans than Hezbollah. Israel's strike last week in Beirut, which killed Hezbollah commander Ibrahim Akil, avenged the 1983 attacks there on the U.S. Embassy and Marine barracks, in which 258 Americans perished. Hezbollah later went on to murder and starve untold numbers of Syrians by helping Bashar Assad in the bloody suppression of his own people.

Those crimes should neither be forgotten nor forgiven. Nor can it be in the interests of the West for a terrorist group with burgeoning ties to the Kremlin to maintain effective control of a Mediterranean state while it terrorizes its neighborhood. Beyond Israel's interests in secure borders against Tehran's Axis of Resistance, there is an American interest in checking the expansion of what I call the Axis of Repression, a broader group that includes Iran, China, Russia and North Korea.

• Which brings us to a sixth lesson: It's tempting to view Israel's battles as distant from America's central concerns. It's also foolish. We are in the opening stages of another contest between the free and unfree worlds. It's a conflict that reaches from Norway's border with Russia to the struggle of the Iranian people against their own government to the shoals of the South China Sea. It will probably last for decades.

In that fight, Israel is on our side, and Hezbollah is on the other. Whatever happens in the weeks ahead, we can't pretend to be neutral between them.

*Bret Stephens is a New York Times columnist.*

Notice of Intent to Adopt a
**MITIGATED NEGATIVE DECLARATION**
Valley Water

**Topic:** Penitencia Water Treatment Plant (PWTP) Residuals Management Project

**What:** Notice of Intent to adopt a Mitigated Negative Declaration

**Why:** Pursuant to the California Environmental Quality Act, Santa Clara Valley Water District (Valley Water), as the lead agency for the proposed Penitencia Water Treatment Plant (PWTP) Residuals Management Project, has prepared a Draft Initial Study/Mitigated Negative Declaration (IS/MND) to evaluate environmental impacts of the Project.

In accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000 et seq.) and CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study of the Penitencia Water Treatment Plant (PWTP) Residuals Management Project was prepared to evaluate environmental impacts. Based on the Initial Study, it has been determined that a Mitigated Negative Declaration (MND) is the appropriate level of review. This is a Notice of Intent to adopt an MND for this project in accordance with CEQA Guidelines Section 15072.

**Project Location:** The Project is located within the Penitencia Water Treatment Plant, addressed as 3959 Whitman Way, San Jose, CA 95132.

**Project Description:** Penitencia Water Treatment Plant (PWTP) Residuals Management Project (Project) involves improvements to various components of the PWTP Residuals Management System. The existing PWTP operations are constrained due to inefficiencies of the Residuals Management System in meeting current regulatory standards. The project will address the following components of the PWTP Residuals Management System: washwater handling and treatment, sludge handling and dewatering, and sedimentation basin sludge withdrawal. The project would address age, capacity, efficiency, and reliability issues with the existing Residuals Management System. Additionally, the project would ensure that the PWTP efficiently and reliably provides potable water to retailers in Valley Water's service area and meets current regulatory standards. The project construction is proposed to begin in 2025 and be complete by 2030.

**Public Review:** Valley Water will release the Draft IS/MND on the project for public review beginning on Friday **September 27, 2024**, and ending on Monday **October 28, 2024**. The Draft IS/MND may be reviewed at ***valleywater.org/public-review-documents***.

The Draft IS/MND is also available for in-person review during normal business hours at:

- Valley Water, 5750 Almaden Expressway, San José, CA 95118
- City of San Jose, Berryessa Branch Library located at 3355 Noble Ave, San Jose, CA 95132.

The public comment period on the Draft MND will run for 30 days upon Valley Water's electronic posting of the document beginning Friday September 27, 2024. The public comment period closes at 5 p.m. on **Monday October 28, 2024**.

**Comments:** Written comments can be emailed to **PWTPcomments@valleywater.org**. Please include the name and mailing address of the commenter in the body of the email and add "Penitencia Water Treatment Plant (PWTP) Residuals Management Project" in the subject line.

Written comments on the Draft IS/MND should be submitted electronically via email or by hard copy via US mail by 5 p.m. not later than 5 pm on **Monday, October 28, 2024**.

Comments by US Mail should be sent to:

Santa Clara Valley Water District
C/O Michael F. Coleman, AICP
Environmental Planner
5750 Almaden Expressway, San Jose, CA 95118

For additional information, please contact Michael Coleman at (408) 630-3096 or via email at: mcoleman@valleywater.org.

**valleywater.org** Clean Water • Healthy Environment • Flood Protection

**Figure 5-3 Valley Water Notice of Intent Displayed in Chinese News**

老中 2024年10月1日-10月14日 編輯:匯基 / 美編:玲玲 地方 3 www.newsforchinese.com

## 老中閒聊集

作者/劉暢

# 聯邦調查局的搜索

灣區奧克蘭（Oakland）市長盛桃（Sheng Thao）的住宅，今年6月20日突然被聯邦調查局（FBI）探員持搜索狀上門搜索，一時震驚灣區，政界民間，人們交相詢問，全美大城市的第一位苗族（Hmong）市長發生了甚麼事？

現在，三個多月過去了，盛桃市長照做，「笑罵由它笑罵，好官我自為之」：處理政務、舉行記者會、接受媒體採訪，仿佛甚麼事都沒有發生過。

不久前，在灣區第七頻道電視台的新聞節目中，看到主持人對盛桃的現場長時間訪談。只見她談笑自如、侃侃而談，毫無「待罪之身」之感。

是啊，盛桃究竟犯了甚麼天條？有勞聯邦調查局那麼多探員屈尊來到盛桃的家，裡裡外外仔細搜索一遍，還帶走很多箱「物證」。

其實，同樣的事情過去曾發生過。2002年5月10日凌晨一大早5點半，25名聯邦調查局探員手持搜索狀，突然搜索當時的舊金山估值官華德（Doris Ward）在舊金山市政府大樓的辦公室。他們在華德辦公室一直到中午才離開，也帶走很多箱「物證」。

當時華德確實面臨一些「麻煩」：一是舊金山一家英文報紙，之前不久派出記者，連續五天，在市政府大樓內外暗中「觀察」華德，瞭解華德在上班時間做了些甚麼事。該報後來刊登連載，報導華德一個星期在辦公時間的「行蹤」。我記得很清楚的是：報導說，華德在上班時間前往Neiman Marcus百貨商店買衣服。

系列報導見報後，這位60年代的舊金山著名民權領袖、舊金山有史來第一位擔任市議會議長的非洲裔，頓時顏面盡失。第二是一個美國大陪審團（U.S. Grand Jury），正在調查華德涉嫌把公款用於其競選連任。大陪審團並傳喚多位華德的助理，包括估值官辦公室二號人物、華德的副手等前往作證。

所以，對於華德辦公室被聯邦調查局搜索的原因，當時傳言甚多。問題是，華德從來沒有被檢方或聯邦調查局起訴過任何罪名。華德於2008年去世，享年86 歲。聯邦調查局20多年前對華德辦公室的大陣仗搜索，最後不了了之。

和華德打過多次交道，不能說瞭解她，只能說她是一位和藹可親的老太太，沒有當官的架子。

類似的事情2006年在灣區又發生了一次，這次是聖荷西市民大陪審團調查時任聖荷西市長岡薩雷斯（Ron Gonzales）。岡薩雷斯被指控與工會談判合約中有利益交換，一篇回憶當時情形的文章說：「事件在當時引發的震撼程度，比這次盛桃事件有過之無不及。」

不過，岡薩雷斯「笑到了最後」，儘管有市議員要他辭職，也有市議員要罷免他，但在法庭上，法官把檢方對岡薩雷斯的指控一一駁回。法官並指出，即使檢方指控內容屬實，也不構成犯法。後來岡薩雷斯順利完成其第二屆任期，毫髮無損，平安著陸。

聯邦調查局用公款搜索公僕，但納稅人不知道他們的這些行動究竟是在做甚麼，如多年前對舊金山估值官華德的搜索、最近對奧克蘭市長盛桃的搜索。我是一名納稅人，也希望聯邦調查局能告訴我們，你們的這些搜索行動，到底是在做甚麼呢？

# Cisco灣區多個辦事處 超840人被裁

根據上週提交給州府的新WARN，Cisco Systems在8月宣佈的大規模裁員重創灣區一些辦事處。

在首次透露裁員消息以及公佈103億元年利潤時，這家San Jose科技巨頭表示將裁員7%。根據9月13日WARN，裁員中的840多人在灣區。目前尚不清楚這些裁員是否會結束這一輪裁員。

根據WARN，一個San Jose辦事處的563名員工將丟掉工作，Milpitas有145人，San Francisco有134人。裁員名單包括17位副總裁和5位高級副總裁，還有一些主管、經理、分析師和工程師。

WARN稱裁員將於11月15日生效，員工已於9月16日收到通知。這意味著，在8月14日首次宣佈裁員後，他們等了整整一個月才知道誰被裁員。

在8月時，Cisco發言人Robyn Blum在一封電子郵件中寫道，裁員旨在幫助公司投資「關鍵增長機會，並提高我們業務的效率」。

Blum當時寫道：「Cisco在投資人工智能、雲和網路安全時，非常專注於增長、執行一致性和成本結構重置。」

灣區400多個發行點，免費索取老中報，最多灣區地方新聞、一報在手，掌握灣區

## 拟采取缓解负面影响声明的意向通知

Valley Water

**主题:** Penitencia水处理厂（PWTP）残留物管理项目

**内容:** 拟采取缓解负面影响声明的意向通知

**原因:** 根据《加州环境质量法案》，作为拟议的Penitencia水处理厂（PWTP）残留物管理项目的牵机构，Santa Clara Valley Water District（“Valley Water”）编制了一份《初步研究/缓解负面影响声明（IS/MND）草案》，以评估该项目对环境的影响。

根据《加州环境质量法案》（CEQA）（《加州公共资源法典》第21000条及后续条款）和《CEQA指南》（《加州法规法典》第14章第15000条及后续条款），Penitencia水处理厂（PWTP）残留物管理项目编写了初步研究报告，以评估其对环境的影响。根据初步研究，已确定了《缓解负面影响声明》（MND）为适当的审查级别。本文是根据《CEQA指南》第15072节的规定针对该项目采用MND的意向通知。

**项目位置:** 该项目位于Penitencia水处理厂内，地址为：3959 Whitman Way, San Jose, CA 95132。

**项目描述:** Penitencia水处理厂（PWTP）残留物管理项目（“项目”）涉及PWTP残余物管理系统各组件的改进。由于残留物管理系统不能有效地满足当前的监管标准，现有的PWTP运营受到限制。该项目将重点解决PWTP残留物管理系统中以下组成部分的问题：洗涤水处理、污泥处理和脱水以及沉淀池污泥排出。该项目会解决现有残留物管理系统的年限、容量、效率和可靠性问题。此外，该项目还将确保PWTP以高效且可靠的方式向Valley Water服务区域内的零售商提供饮用水，并符合当前的监管标准。该项目拟于2025年开始建设，并于2030年完工。

**公众审议:** Valley Water将发布该项目的IS/MND草案，以用于公众审议；公众审议开始时间为**2024年9月27日**（星期五），结束时间为**2024年10月28日**（星期一）。请访问以下链接查看IS/MND草案：***valleywater.org/public-review-documents***。市民亦可于正常办公时间内亲自前往下列地点查阅IS/MND草案：

- Valley Water, 5750 Almaden Expressway, San José, CA 95118
- San Jose市Berryessa图书馆分馆，地址：3355 Noble Ave, San Jose, CA 95132。

在Valley Water通过电子方式发布文件后，MND草案的公众意见征询期将从2024年9月27日（星期五）开始，并持续30天。公众意见征询期将于2024年10月28日（星期一）下午5点结束。

**评论意见:** 有关书面意见可通过邮件发送至：PWTPcomments@valleywater.org。请在电子邮件正文中注明发送评论意见者的姓名和邮寄地址，并在主题行中标明“Penitencia Water Treatment Plant (PWTP) Residuals Management Project”。

针对IS/MND草案的书面意见应通过电子邮件或美国邮政以纸质形式于**2024年10月28日**（星期一）下午5点前提交。

通过美国邮政寄送的评论意见应寄送至以下地址：

Santa Clara Valley Water District
C/O Michael F. Coleman, AICP
Environmental Planner
5750 Almaden Expressway, San Jose, CA 95118

如需了解更多信息，请联系Michael Coleman，电话：(408) 630-3096，电子邮件：mcoleman@valleywater.org。

valleywater.org Clean Water • Healthy Environment • Flood Protection

**Figure 5-4 Valley Water Notice of Intent Displayed in El Observador**



ESPAÑOL

Ceremonia de graduación en Southwestern College en Chula Vista el 24 de mayo de 2024.
Photo Credit: Adriana Heldiz / CalMatters

los requisitos, son rechazados, según la auditoría.

Si bien la mayoría de los estudiantes de colegios comunitarios que solicitan ingreso a una UC o Cal State son aceptados, las carreras populares, como informática, y las escuelas populares, como UCLA y Cal Poly San Luis Obispo, son mucho más selectivas, según la auditoría. Si son rechazados, se supone que estos estudiantes deben pasar por un proceso de "redireccionamiento", en el que son aceptados en otro campus. La auditoría estatal descubrió que la CSU redirigió a más de 25,000 solicitantes de colegios comunitarios a otros campus en los últimos años.

En 2010, los legisladores de California reformaron el proceso de transferencia creando un nuevo tipo de título universitario comunitario que también garantiza la admisión a un campus de Cal State. Conocido como el título de asociado para transferencia, se ha vuelto cada vez más popular y un beneficio clave para los estudiantes, según la auditoría.

Los legisladores intentaron —y fracasaron— que el sistema de la UC garantizara la admisión de estos estudiantes de colegios comunitarios. El año pasado, los legisladores lograron un gran avance al aprobar un proyecto de ley que requerirá que la UCLA priorice la admisión de ciertos estudiantes de colegios comunitarios a partir del año académico 2026-27. Más campus de la UC participarán en años posteriores.

El estado también ha presionado al sistema de colegios comunitarios para que estandarice la forma en que etiqueta los cursos para que a los estudiantes les resulte más fácil determinar qué necesitan transferir. Sin embargo, la implementación del nuevo sistema ha sido lenta y no estará completa hasta el 2027.

La última reforma importante entrará en vigor el año próximo. A partir del semestre de otoño, el sistema de colegios comunitarios ofrecerá un nuevo conjunto de requisitos previos comunes que tanto el sistema de la UC como el de Cal State han acordado aceptar.

Pero la auditoría concluyó que estas reformas por sí solas no son suficientes. Los auditores recomendaron que los campus de los colegios comunitarios encuentren formas de aumentar el número de consejeros que puedan apoyar a los estudiantes que se trasladan a otro país y que los tres sistemas de educación superior trabajen para ampliar los programas exitosos, como el Grado Asociado para Transferencias.

**Cuando la colaboración es "ineficaz"**

Cuando California diseñó su actual sistema de educación superior en 1960, exigió que tanto el sistema de Cal State como el de la UC hicieran espacio para las transferencias de estudiantes de colegios comunitarios. El sistema de la UC acepta admitir a un estudiante transferido por cada dos nuevos estudiantes de primer año que se inscriban, pero no cumplió esa meta el año pasado, dijo el portavoz de la UC Stett Holbrook. Parte del problema, dijo, es que la inscripción en los colegios comunitarios disminuyó.

El sistema de Cal State no tiene un objetivo específico, pero la auditoría indicó que la mayoría de los campus aún inscriben a un gran número de estudiantes transferidos. La mayor excepción es Cal Poly San Luis Obispo, donde solo el 18% de los estudiantes que ingresaron a la universidad lo hicieron a través del sistema de transferencias en los últimos años.

En 2017, el sistema de colegios comunitarios se fijó el objetivo de aumentar el número anual de estudiantes que se transfieren de aproximadamente 80,000 a poco más de 100,000 para 2022. El sistema nunca logró ese objetivo, y la pandemia es en parte culpable, afirma la auditoría.

Paul Feist, portavoz de la Oficina del Rector de los Colegios Comunitarios de California, dijo que el próximo objetivo depende de si los campus de Cal State y UC pueden aumentar su propia inscripción.

Un desafío del proceso de transferencia es que requiere que los sistemas de la universidad comunitaria, Cal State y UC trabajen juntos. Históricamente, eso no ha sido fácil.

Cuando la Legislatura estatal permitió que el sistema de colegios comunitarios comenzara a ofrecer sus propios títulos de licenciatura (una solución que evita por completo el proceso de transferencia), los profesores de los campus de Cal State contrastacaron, temiendo que los colegios comunitarios pudieran desviar estudiantes y obligar al sistema de Cal State a perder dinero.

Cada sistema tiene una estructura diferente: la UC es constitucionalmente independiente, lo que significa que la Legislatura tiene autoridad limitada sobre ella. El sistema de Cal State es centralizado, mientras que el sistema de colegios comunitarios es más similar al sistema K-12, donde los distritos universitarios regionales toman la mayoría de las decisiones.

No existe un comité de coordinación oficial entre los tres sistemas públicos de educación superior. Un comité de este tipo existía hace más de una década, pero el exgobernador Jerry Brown dejó de financiarlo "porque creía que había sido ineficaz", según la auditoría.

La auditoría no pidió un nuevo comité, pero sí pidió a los tres sistemas de educación superior que mejoraran la forma en que comparten datos e información.

Adam Echelman cubre los colegios comunitarios de California en sociedad con Open Campus, una sala de redacción sin fines de lucro enfocada en la educación superior.

Aviso de intención de adoptar
**UNA DECLARACIÓN NEGATIVA MITIGADA**

Valley Water

**Asunto:** Proyecto de Gestión de Residuos de la Planta de Tratamiento de Agua de Penitencia (PWTP)

**Qué es:** Aviso de intención de adoptar una declaración negativa mitigada

**Por qué:** De conformidad con la Ley de Calidad Ambiental de California (California Environmental Quality Act), Santa Clara Valley Water District (Valley Water), como agencia líder para el Proyecto de Gestión de Residuos de la Planta de Tratamiento de Agua de Penitencia (Penitencia Water Treatment Plant, PWTP) propuesto, preparó un borrador del Estudio inicial/Declaración negativa mitigada (Initial Study/Mitigated Negative Declaration, IS/MND) para evaluar los impactos ambientales del proyecto.

De conformidad con la Ley de Calidad Ambiental de California (California Environmental Quality Act, CEQA) (Código de Recursos Públicos de California, secciones 21000 y siguientes) y las Directrices de la CEQA (Título 14, Código de Regulaciones de California, secciones 15000 y siguientes), se preparó un Estudio inicial del Proyecto de Gestión de Residuos de la Planta de Tratamiento de Agua de Penitencia (PWTP) para evaluar los impactos ambientales. En función del Estudio inicial, se determinó que el nivel apropiado de revisión corresponde al de una Declaración negativa mitigada (MND). Este es un aviso de intención de adoptar una MND para este proyecto de conformidad con las Directrices de la sección 15072 de la CEQA.

**Ubicación del proyecto:** El Proyecto está ubicado dentro de la planta de tratamiento de agua de Penitencia, sita en 3959 Whitman Way, San Jose, CA 95132.

**Descripción del proyecto:** El Proyecto de Gestión de Residuos de la Planta de Tratamiento de Agua de Penitencia (PWTP) conlleva mejoras a diversos componentes del sistema de gestión de residuos de la PWTP. Las operaciones actuales de la PWTP se ven limitadas por las ineficiencias del sistema de gestión de residuos para cumplir con los estándares regulatorios actuales. El proyecto abordará los siguientes componentes del sistema de gestión de residuos de la PWTP: gestión y tratamiento de aguas de lavado, manejo y deshidratación de lodos, y retiro de lodos de la cuenca de sedimentación. Este proyecto abordaría los problemas de edad, capacidad, eficiencia y confiabilidad del sistema de gestión de residuos actual. Adicionalmente, el proyecto aseguraría que la PWTP entregue de manera eficiente y confiable agua potable a los minoristas en el área de servicio de Valley Water y cumpla con los estándares regulatorios actuales. Se propone que el proyecto se comience a construir en 2025 y se complete en 2030.

**Revisión pública:** Valley Water lanzará el borrador del IS/MND sobre el proyecto para su revisión pública, la cual comenzará el viernes **27 de septiembre de 2024** y finalizará el lunes **28 de octubre de 2024**. El borrador del IS/MND está disponible para su revisión en ***valleywater.org/public-review-documents***. El borrador del IS/MND también está disponible para su revisión en persona durante los horarios normales de atención al público en:

- Valley Water, 5750 Almaden Expressway, San Jose, CA 95118
- Ciudad de San Jose, biblioteca Berryessa Branch Library, ubicada en 3355 Noble Ave, San Jose, CA 95132.

El período para realizar comentarios públicos sobre el borrador del MND se extenderá durante 30 días desde que Valley Water publique electrónicamente el documento a partir del viernes 27 de septiembre de 2024. El período para realizar comentarios públicos terminará el lunes 28 de octubre de 2024 a las 5 p.m.

**Comentarios:** Puede enviar sus comentarios por escrito a **PWTPcomments@valleywater.org**. Incluya el nombre y la dirección postal de la persona que realiza el comentario en el cuerpo del correo electrónico y agregue "Penitencia Water Treatment Plant (PWTP) Residuals Management Project" en el asunto.

Los comentarios escritos sobre el borrador del IS/MND deben enviarse por correo electrónico o en copia impresa por correo postal de EE. UU. hasta el **lunes 28 de octubre de 2024** a las 5 p.m.

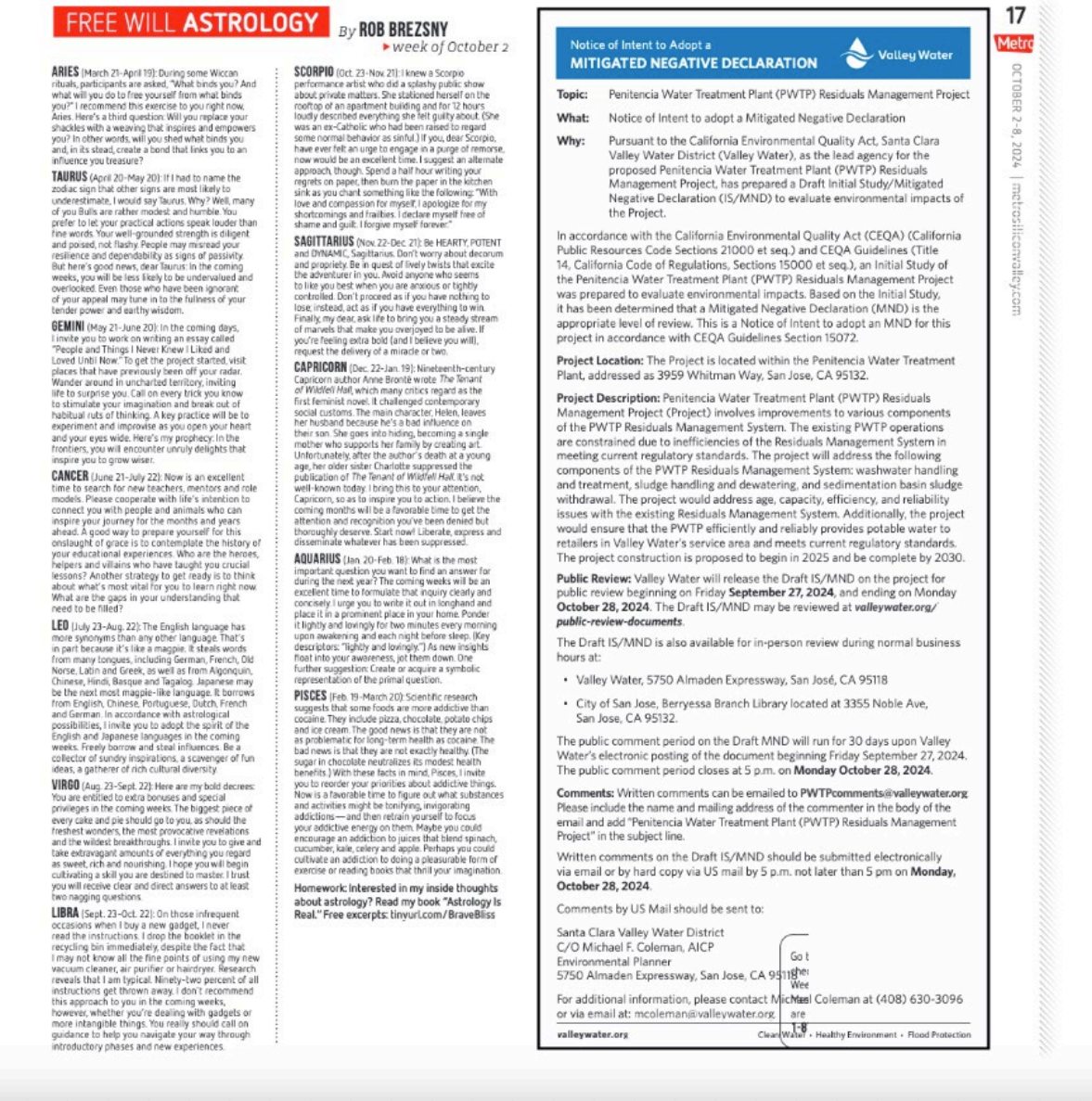
Los comentarios por correo postal deben enviarse a:

Santa Clara Valley Water District
C/O Michael F. Coleman, AICP
Environmental Planner
5750 Almaden Expressway, San Jose, CA 95118

Para obtener información adicional, comuníquese con Michael Coleman al (408) 630-3096 o envíe un correo electrónico a: mcoleman@valleywater.org.

**valleywater.org** Clean Water • Healthy Environment • Flood Protection

**Figure 5-5 Valley Water Notice of Intent Displayed in Metro Silicon Valley**



FREE WILL ASTROLOGY

By ROB BREZSNY

▸week of October 2

**ARIES** (March 21–April 19): During some Wiccan rituals, participants are asked, "What binds you? And what will you do to free yourself from what binds you?" I recommend this exercise to you right now, Aries. Here's a third question: Will you replace your shackles with a weaving that inspires and empowers you? In other words, will you shed what binds you and, in its stead, create a bond that links you to an influence you treasure?

**TAURUS** (April 20–May 20): If I had to name the zodiac sign that other signs are most likely to underestimate, I would say Taurus. Why? Well, many of you Bulls are rather modest and humble. You prefer to let your practical actions speak louder than fine words. Your well-grounded strength is diligent and poised, not flashy. People may mistread your resilience and dependability as signs of passivity. But here's good news, dear Taurus: In the coming weeks, you will be less likely to be undervalued and overlooked. Even those who have been ignorant of your appeal may tune in to the fullness of your tender power and earthy wisdom.

**GEMINI** (May 21–June 20): In the coming days, I invite you to work on writing an essay called "People and Things I Never Knew I Liked and Loved Until Now." To get the project started, visit places that have previously been off your radar. Wander around in uncharted territory, inviting life to surprise you. Call on every trick you know to stimulate your imagination and break out of habitual ruts of thinking. A key practice will be to experiment and improvise as you open your heart and your eyes wide. Here's my prophecy: In the frontiers, you will encounter unruly delights that inspire you to grow wiser.

**CANCER** (June 21–July 22): Now is an excellent time to search for new teachers, mentors and role models. Please cooperate with life's intention to connect you with people and animals who can inspire your journey for the months and years ahead. A good way to prepare yourself for this onslaught of grace is to contemplate the history of your educational experiences. Who are the heroes, helpers and villains who have taught you crucial lessons? Another strategy to get ready is to think about what's most vital for you to learn right now. What are the gaps in your understanding that need to be filled?

**LEO** (July 23–Aug. 22): The English language has more synonyms than any other language. That's in part because it's like a magpie. It steals words from many tongues, including German, French, Old Norse, Latin and Greek, as well as from Algonquin, Chinese, Hindi, Basque and Tagalog. Japanese may be the next most magpie-like language. It borrows from English, Chinese, Portuguese, Dutch, French and German. In accordance with astrological possibilities, I invite you to adopt the spirit of the English and Japanese languages in the coming weeks. Freely borrow and steal influences. Be a collector of sundry inspirations, a scavenger of fun ideas, a gatherer of rich cultural diversity.

**VIRGO** (Aug. 23–Sept. 22): Here are my bold decrees: You are entitled to extra bonuses and special privileges in the coming weeks. The biggest piece of every cake and pie should go to you, as should the freshest wonders, the most provocative revelations and the wildest breakthroughs. I invite you to give and take extravagant amounts of everything you regard as sweet, rich and nourishing. I hope you will begin cultivating a skill you are destined to master. I trust you will receive clear and direct answers to at least two nagging questions.

**LIBRA** (Sept. 23–Oct. 22): On those infrequent occasions when I buy a new gadget, I never read the instructions. I drop the booklet in the recycling bin immediately, despite the fact that I may not know all the fine points of using my new vacuum cleaner, air purifier or hairdryer. Research reveals that I am typical. Ninety-two percent of all instructions get thrown away. I don't recommend this approach to you in the coming weeks, however, whether you're dealing with gadgets or more intangible things. You really should call on guidance to help you navigate your way through introductory phases and new experiences.

**SCORPIO** (Oct. 23–Nov. 21): I knew a Scorpio performance artist who did a splashy public show about private matters. She stationed herself on the rooftop of an apartment building and for 12 hours loudly described everything she felt guilty about. (She was an ex-Catholic who had been raised to regard some normal behavior as sinful.) If you, dear Scorpio, have ever felt an urge to engage in a purge of remorse, now would be an excellent time. I suggest an alternate approach, though. Spend a half hour writing your regrets on paper, then burn the paper in the kitchen sink as you chant something like the following: "With love and compassion for myself, I apologize for my shortcomings and frailties. I declare myself free of shame and guilt. I forgive myself forever."

**SAGITTARIUS** (Nov. 22–Dec. 21): Be HEARTY, POTENT and DYNAMIC, Sagittarius. Don't worry about decorum and propriety. Be in quest of lively twists that excite the adventurer in you. Avoid anyone who seems to like you best when you are anxious or tightly controlled. Don't proceed as if you have nothing to lose; instead, act as if you have everything to win. Finally, my dear, ask life to bring you a steady stream of marvels that make you overjoyed to be alive. If you're feeling extra bold (and I believe you will), request the delivery of a miracle or two.

**CAPRICORN** (Dec. 22–Jan. 19): Nineteenth-century Capricorn author Anne Brontë wrote *The Tenant of Wildfell Hall*, which many critics regard as the first feminist novel. It challenged contemporary social customs. The main character, Helen, leaves her husband because he's a bad influence on their son. She goes into hiding, becoming a single mother who supports her family by creating art. Unfortunately, after the author's death at a young age, her older sister Charlotte suppressed the publication of *The Tenant of Wildfell Hall*. It's not well-known today. I bring this to your attention, Capricorn, so as to inspire you to action. I believe the coming months will be a favorable time to get the attention and recognition you've been denied but thoroughly deserve. Start now! Liberate, express and disseminate whatever has been suppressed.

**AQUARIUS** (Jan. 20–Feb. 18): What is the most important question you want to find an answer for during the next year? The coming weeks will be an excellent time to formulate that inquiry clearly and concisely. I urge you to write it out in longhand and place it in a prominent place in your home. Ponder it lightly and lovingly for two minutes every morning upon awakening and each night before sleep. (Key descriptors: "lightly and lovingly.") As new insights float into your awareness, jot them down. One further suggestion: Create or acquire a symbolic representation of the primal question.

**PISCES** (Feb. 19–March 20): Scientific research suggests that some foods are more addictive than cocaine. They include pizza, chocolate, potato chips and ice cream. The good news is that they are not as problematic for long-term health as cocaine. The bad news is that they are not exactly healthy. (The sugar in chocolate neutralizes its modest health benefits.) With these facts in mind, Pisces, I invite you to reorder your priorities about addictive things. Now is a favorable time to figure out what substances and activities might be tonifying, invigorating addictions—and then retrain yourself to focus your addictive energy on them. Maybe you could encourage an addiction to juices that blend spinach, cucumber, kale, celery and apple. Perhaps you could cultivate an addiction to doing a pleasurable form of exercise or reading books that thrill your imagination.

**Homework: Interested in my inside thoughts about astrology? Read my book "Astrology Is Real." Free excerpts: tinyurl.com/BraveBliss**

Notice of Intent to Adopt a
**MITIGATED NEGATIVE DECLARATION**

Valley Water

**Topic:** Penitencia Water Treatment Plant (PWTP) Residuals Management Project

**What:** Notice of Intent to adopt a Mitigated Negative Declaration

**Why:** Pursuant to the California Environmental Quality Act, Santa Clara Valley Water District (Valley Water), as the lead agency for the proposed Penitencia Water Treatment Plant (PWTP) Residuals Management Project, has prepared a Draft Initial Study/Mitigated Negative Declaration (IS/MND) to evaluate environmental impacts of the Project.

In accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000 et seq.) and CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study of the Penitencia Water Treatment Plant (PWTP) Residuals Management Project was prepared to evaluate environmental impacts. Based on the Initial Study, it has been determined that a Mitigated Negative Declaration (MND) is the appropriate level of review. This is a Notice of Intent to adopt an MND for this project in accordance with CEQA Guidelines Section 15072.

**Project Location:** The Project is located within the Penitencia Water Treatment Plant, addressed as 3959 Whitman Way, San Jose, CA 95132.

**Project Description:** Penitencia Water Treatment Plant (PWTP) Residuals Management Project (Project) involves improvements to various components of the PWTP Residuals Management System. The existing PWTP operations are constrained due to inefficiencies of the Residuals Management System in meeting current regulatory standards. The project will address the following components of the PWTP Residuals Management System: washwater handling and treatment, sludge handling and dewatering, and sedimentation basin sludge withdrawal. The project would address age, capacity, efficiency, and reliability issues with the existing Residuals Management System. Additionally, the project would ensure that the PWTP efficiently and reliably provides potable water to retailers in Valley Water's service area and meets current regulatory standards. The project construction is proposed to begin in 2025 and be complete by 2030.

**Public Review:** Valley Water will release the Draft IS/MND on the project for public review beginning on Friday **September 27, 2024**, and ending on Monday **October 28, 2024**. The Draft IS/MND may be reviewed at ***valleywater.org/public-review-documents***.

The Draft IS/MND is also available for in-person review during normal business hours at:

- Valley Water, 5750 Almaden Expressway, San José, CA 95118
- City of San Jose, Berryessa Branch Library located at 3355 Noble Ave, San Jose, CA 95132.

The public comment period on the Draft MND will run for 30 days upon Valley Water's electronic posting of the document beginning Friday September 27, 2024. The public comment period closes at 5 p.m. on **Monday October 28, 2024**.

**Comments:** Written comments can be emailed to **PWTPcomments@valleywater.org** Please include the name and mailing address of the commenter in the body of the email and add "Penitencia Water Treatment Plant (PWTP) Residuals Management Project" in the subject line.

Written comments on the Draft IS/MND should be submitted electronically via email or by hard copy via US mail by 5 p.m. not later than 5 pm on **Monday, October 28, 2024**.

Comments by US Mail should be sent to:

Santa Clara Valley Water District
C/O Michael F. Coleman, AICP
Environmental Planner
5750 Almaden Expressway, San Jose, CA 95118

For additional information, please contact Michael Coleman at (408) 630-3096 or via email at: mcoleman@valleywater.org

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17 Metro OCTOBER 2-8, 2024 | metrosiliconvalley.com

## Figure 5-6 Notice of Intent Displayed in Vietnam Daily Newspaper

Việt Nam Số 9679 * Thứ Sáu 27 tháng 9 năm 2024 A8

BENCHMARK
FINANCIAL SOLUTIONS

HỘI THẢO ĐỊNH KỲ
CHĂM SÓC SỨC KHỎE & BẢO ĐẢM THU NHẬP TRỌN ĐỜI

CHỦ NHẬT | NGÀY 13 THÁNG 10 NĂM 2024
Từ 02:00 PM đến 04:00 PM

Diễn giả : ĐOAN TRANG TRẦN
RETIREMENT PLAN SPECIALIST

- Làm cách nào để có thể về hưu mà không sợ hết tiền trong tài khoản hưu trí đã dành dụm cả đời?
- Sự ảnh hưởng của lạm phát và rủi ro của thị trường đến tiền hưu của quý vị
- Làm cách nào tiền của quý vị được tăng lợi nhuận tối đa với mức rủi ro bằng 0
- Làm cách nào để nhận được thêm hợp đồng chăm sóc sức khỏe dài hạn khi bị bệnh nặng HOẶC hợp đồng bảo hiểm IUL với đầy đủ quyền lợi khi còn sống, giá trị tiền mặt miễn thuế và quyền lợi tử mà vẫn dư tiền để nghỉ hưu
- Làm cách nào để tự tạo ra lương hưu trọn đời cho mình và người phối ngẫu, thu nhập của quý vị tăng gấp đôi nếu bị bệnh nặng cần người chăm sóc dài hạn. Quý vị an tâm hưởng trọn cuộc đời và sẽ không còn lo lắng sẽ bị hết tiền




- KHI QUÝ VỊ ĐẾN TUỔI 65 ĐƯỢC HƯỞNG CÁC QUYỀN LỢI MEDICARE
- QUYỀN LỢI CỦA MEDICARE LÀ GÌ VÀ LỆ PHÍ THẾ NÀO ?
- THUỐC VIẾT THEO TOA BÁC SĨ SẼ ĐƯỢC BAO TRẢ TOÀN BỘ Ở TẤT CẢ CHƯƠNG TRÌNH KHÔNG?
- QUÝ VỊ CÓ THỂ ĐỦ ĐIỀU KIỆN ĐỂ THAM GIA CHƯƠNG TRÌNH BẢO HIỂM SỨC KHỎE NÂNG CAO VỚI NHIỀU QUYỀN LỢI HƠN

THAM DỰ HỘI THẢO

CÁ NHÂN HAY NHỮNG CẶP VỢ CHỒNG TỪ TUỔI 40 TRỞ LÊN, SỞ HỮU TÀI KHOẢN BANK SAVINGS NGÂN HÀNG , TIỀN TIẾT KIỆM TRONG CDs HOẶC QUỸ HƯU TRÍ TRADITIONAL IRA,SEP IRA, ROTH IRA ,SIMPLE IRA, 401(K), 403(B) OR 457 ĐANG MUỐN TÌM KIẾM CÁC GIẢI PHÁP CÓ TIỀM NĂNG VÀ AN TOÀN

Để chứng tôi có thể sắp xếp chỗ ngồi cho quý vị và người thân chu đáo, quý vị vui lòng gọi số : (408) 896 2566

Đây là chương trình hội thảo mang tính chia sẻ hoàn toàn miễn phí. Không bị ràng buộc hay mua bán trong thời gian hội thảo




ĐỊA CHỈ HỘI THẢO
TÒA BÁO VIỆT NAM NHẬT BÁO VỈ DÂN
2010 SENTER RD, SAN JOSE, CA 95112

Thông Báo Ý Định Thông Qua
TUYÊN BỐ GIẢM NHẸ TIÊU CỰC
Valley Water

**Chủ đề:** Dự Án Quản Lý Chất Thải Tại Nhà Máy Xử Lý Nước Penitencia (PWTP)

**Nội dung:** Thông Báo Ý Định Thông Qua Tuyên Bố Giảm Nhẹ Tiêu Cực

**Lý do:** Theo Đạo Luật Chất Lượng Môi Trường California, Santa Clara Valley Water District (gọi tắt là Valley Water), với tư cách là cơ quan chủ trì Dự Án Quản Lý Chất Thải Tại Nhà Máy Xử Lý Nước Penitencia (PWTP) đề xuất, đã chuẩn bị Dự Thảo Nghiên Cứu Ban Đầu/Tuyên Bố Giảm Nhẹ Tiêu Cực (IS/MND) nhằm đánh giá tác động môi trường của Dự án này.

Theo Đạo Luật Chất Lượng Môi Trường California (CEQA) (Bộ Luật Tài Nguyên Công Cộng California, Mục 21000 trở đi) và Hướng dẫn CEQA (Tiêu đề 14, Bộ Luật Quy Định California, Mục 15000 trở đi), Nghiên Cứu Ban Đầu về Dự Án Quản Lý Chất Thải Tại Nhà Máy Xử Lý Nước Penitencia (PWTP) đã được soạn thảo để đánh giá tác động môi trường. Dựa trên Nghiên Cứu Ban Đầu, người ta đã xác định rằng Tuyên Bố Giảm Nhẹ Tiêu Cực (MND) là mức đánh giá phù hợp. Đây là Thông Báo Ý Định thông qua MND cho dự án này theo Mục 15072 của Hướng dẫn CEQA.

**Địa điểm dự án:** Dự án nằm trong Nhà Máy Xử lý Nước Penitencia, có địa chỉ tại 3959 Whitman Way, San Jose, CA 95132.

**Mô tả dự án:** Dự Án Quản Lý Chất Thải Tại Nhà Máy Xử Lý Nước Penitencia (PWTP) (gọi tắt là Dự án) liên quan đến việc cải thiện các hợp phần khác nhau trong Hệ Thống Quản Lý Chất Thải của PWTP. Các hoạt động hiện tại của PWTP bị hạn chế do Hệ Thống Quản Lý Chất Thải không đáp ứng được các tiêu chuẩn quy định hiện hành. Dự án sẽ giải quyết các hợp phần sau trong Hệ Thống Quản Lý Chất Thải của PWTP: thu gom và xử lý nước thải, thu gom và tách nước trong bùn, và rút bùn khỏi bể lắng. Dự án sẽ giải quyết các vấn đề về tuổi thọ, công suất, hiệu suất và độ tin cậy của Hệ Thống Quản Lý Chất Thải hiện tại. Ngoài ra, dự án sẽ đảm bảo rằng PWTP cung cấp nước uống một cách hiệu quả và đáng tin cậy cho các nhà bán lẻ trong khu vực dịch vụ của Valley Water, đồng thời đáp ứng các tiêu chuẩn quy định hiện hành. Việc xây dựng dự án được đề xuất bắt đầu vào năm 2025 và hoàn thành vào năm 2030.

**Đánh giá công khai:** Valley Water sẽ công bố Dự thảo IS/MND cho dự án này để cho công chúng đánh giá bắt đầu từ Thứ Sáu **ngày 27 tháng 9 năm 2024**, và kết thúc vào Thứ Hai **ngày 28 tháng 10 năm 2024**. Công chúng có thể đánh giá Dự thảo IS/MND tại ***valleywater.org/public-review-documents***. Dự thảo IS/MND cũng có thể được đánh giá trực tiếp trong giờ làm việc bình thường tại:

- Valley Water, 5750 Almaden Expressway, San José, CA 95118
- City of San Jose, Berryessa Branch Library tọa lạc tại 3355 Noble Ave, San Jose, CA 95132.

Thời gian lấy ý kiến công chúng về Dự thảo MND sẽ kéo dài trong 30 ngày kể từ khi Valley Water đăng tải tài liệu điện tử bắt đầu từ Thứ Sáu ngày 27 tháng 9 năm 2024. Thời gian lấy ý kiến công chúng kết thúc vào lúc 5 giờ chiều Thứ Hai ngày 28 tháng 10 năm 2024.

**Ý kiến:** Ý kiến bằng văn bản có thể được gửi qua email đến **PWTPcomments@valleywater.org**. Vui lòng ghi rõ tên và địa chỉ gửi thư của người đóng góp ý kiến trong nội dung email và thêm "Penitencia Water Treatment Plant (PWTP) Residuals Management Project" (Dự Án Quản Lý Chất Thải Tại Nhà Máy Xử Lý Nước Penitencia) vào dòng tiêu đề.

Các ý kiến bằng văn bản về Dự thảo IS/MND phải được gửi bằng phương thức điện tử qua email hoặc bằng bản cứng qua Bưu điện Hoa Kỳ trước 5 giờ chiều, chậm nhất là 5 giờ chiều **Thứ Hai, ngày 28 tháng 10 năm 2024.**

Ý kiến nhận xét gửi qua Bưu điện Hoa Kỳ phải được gửi tới:

Santa Clara Valley Water District
Chuyên thư cho Michael F. Coleman, AICP
Environmental Planner (Nhà Quy Hoạch Môi Trường)
5750 Almaden Expressway, San Jose, CA 95118

Để biết thêm thông tin, vui lòng liên hệ với Michael Coleman theo số (408) 630-3096 hoặc qua email theo địa chỉ: mcoleman@valleywater.org.

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