Public Review Draft

Initial Study/Mitigated Negative Declaration

for the

Mission Union School Water System Improvements Project

Prepared for:

Mission Union School District

Prepared by:

Denise Duffy & Associates, Inc.

May 2024

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1. Project Title and Location

Mission Union School Water System Improvements

Address

- 36825 Foothill Road, Soledad, CA

County of Monterey Assessor's Parcel Numbers:

- 165-031-008-000 (approximately six (6) acres)

2. Lead Agency, Contact and Preparer

Mission Union School District
Sandra Shreve, Superintendent/Principal
36825 Foothill Road
Soledad, CA 93960
(831) 678-3524
sshreve@missionusd.org

3. Project Sponsor's Name and Address

Same as above.

4. General Plan Designation

County of Monterey, Central Salinas Valley

- Public/Quasi-Public

5. Zoning Designation

County of Monterey, Central Salinas Valley

- LDR/2.5

6. Brief Description of Project

The primary source for the project description provided below is the Engineering Report for Mission Union Elementary School, prepared by Weber, Hayes & Associates, dated September 20, 2022. This document is included in **Appendix A** to this document. [1]

[1] Please note that the proposed water system improvement design has undergone revisions since this Engineering Report was completed. This document analyzes the final version of the project, which includes some updated design details that are not included in the 2022 Engineering Report.

6.1 INTRODUCTION

This Initial Study has been prepared to evaluate the potential environmental effects associated with the Mission Union School Water System Improvements Project ("project" or "proposed project"), located in unincorporated Monterey County, outside the City of Soledad. This document has been prepared in accordance with the California Environmental Quality Act ("CEQA"), Public Resources Code §21000 et. seq., and the State CEQA Guidelines, California Code of Regulations ("CCR") §15000 et. seq.

An Initial Study is an informational document prepared by a Lead Agency to determine if a project may have a significant effect on the environment (CEQA Guidelines §15063, subd. (a)). If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report ("EIR") must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the Lead Agency determines that revisions in the project plans or proposals made by or agreed to by the applicant to mitigate the potentially significant effects to a less than significant level, a Mitigated Negative Declaration ("IS/MND") may be prepared instead of an EIR (CEQA Guidelines §15070, subd. (b)). Per CEQA Guidelines for an IS/MND, a Lead Agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/MND conforms to the content requirements under CEQA Guidelines §15071.

Mission Union School District is acting as the Lead Agency pursuant to CEQA Guidelines §15050(a). As the Lead Agency, Mission Union School District prepared this IS/MND pursuant to CEQA Guidelines §15063, §15070, and §15152. This IS/MND will be circulated for agency and public review during a 30-day public review period pursuant to CEQA Guidelines §15073. Comments received by Mission Union School District on this IS/MND will be reviewed and considered as part of the deliberative process in accordance with CEQA Guidelines §15074.

The following section is consistent with the requirements of CEQA Guidelines §15124 to the extent that it is applicable to the project. This section contains a detailed description of the project location, historical background and context, project components and relevant project characteristics, project goals and objectives, and applicable regulatory requirements.

6.2 PROJECT LOCATION

The proposed project, described below, is located southwest of the City of Soledad at 36825 Foothill Road. The proposed project components, described below in **Section 6.5**, are entirely within the existing 5.71-acre Mission Union Elementary School campus. The proposed project is located within unincorporated Monterey County (see **Figure 1. Regional Project Map**). The proposed project would be located on the following assessor's parcel (see also **Figure 2. APN Map**):

- 165-031-008-000

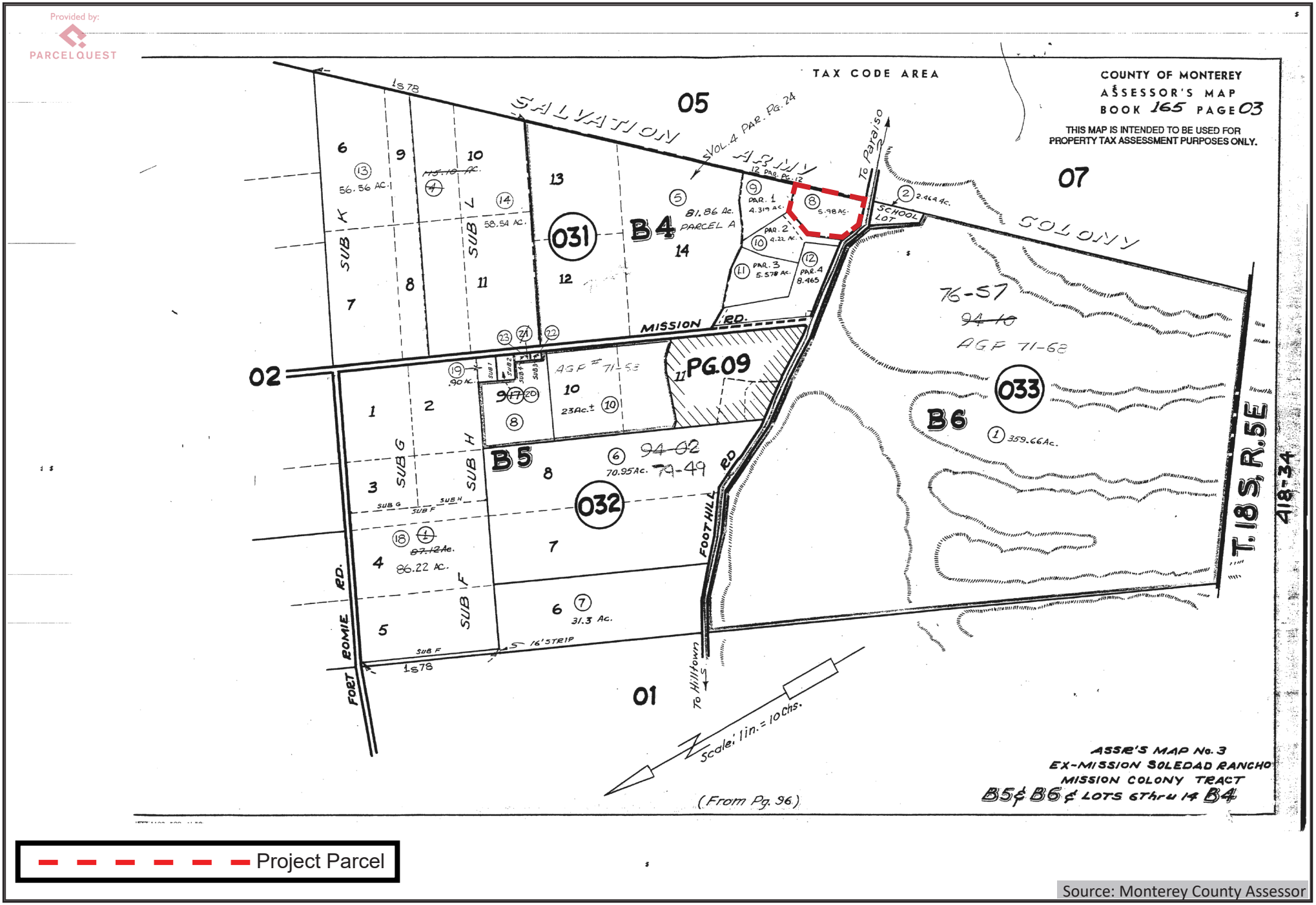
Regional access to the project site is provided from U.S. Route 101, Arroyo Seco Road, and Foothill Road. The proposed project is surrounded primarily by agricultural and low density residential uses (see **Figure 3. Vicinity Map**). The project site currently consists of Mission Union Elementary School, which consists of a paved parking area, structures, and grassy areas (see **Figure 4. Site Photos**).

Source: WHA, September 2022

Regional Project Map

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure
1



Source: Monterey County Assessor

APN Map

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure 2

Vicinity Map

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure 3

Photo #1: East facing view of project site from Foothill Road.

Photo #2: East facing view of project site from Mission School.

Photo #3: South facing view of project site from Mission School.

Photo #4: West facing view of project site from Mission School.

Site Photos

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure
4a

Photo #5: East facing view of staging area from project site.

Photo #6: North facing view of staging area from project site.

Photo #7: North facing view of staging area from Foothill Road

Photo #8: South facing view of staging area from project site.

Site Photos

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure
4b

6.3 EXISTING GENERAL PLAN LAND USE DESIGNATION

The project area is governed by the Salinas Valley Area Plan component of the 2010 Monterey County General Plan. The Plan Designation of the site is Public/Quasi-Public and the zoning designation is low-density residential (LDR/2.5). See **Figure 5. Land Use Map**.

6.4 PROJECT BACKGROUND

Mission Union Elementary School (Mission School) is a small rural K-8 public school with a current enrollment of approximately 124 students. It is located in Monterey County approximately five miles southwest of Soledad, California and is surrounded by rural residential and agricultural land uses. Mission School is the sole school in the Mission Union School District. The Mission School consists of two single-story buildings, a student drop-off/parking area, blacktop, grassy areas, a play structure, a well, and a non-potable water fire suppression storage tank. Mission School has its own water system (No. 2702317) which has had documented issues with elevated nitrate concentrations since October 2017. In November 2018, the Monterey County Health Department issued a regulatory Compliance Order (No. 18-003) requiring that the issues related to elevated nitrate concentrations be resolved. 12 point of use (POU) reverse osmosis (RO) nitrate filters were installed throughout the school. Regular sampling of the water determined that the POU RO filters effectively removed nitrates from the water. However, Mission School is seeking a sustainable long-term solution to the nitrate issue in compliance with State Water Board regulations. Based on these challenges, Mission School received a Technical Assistance (TA) Grant to help bring their water system into regulatory compliance. As part of this grant process, an Engineering Report (ER) for Potable Water System Improvements at the Mission Union Elementary School District was prepared by Weber, Hayes & Associates (WHA), September 2022. The TA Grant is from the California State Water Resources Control Board (SWRCB) assigned to and administered by the Rural Community Assistance Corporation (RCAC). The WHA ER evaluated various alternatives to resolve the problem of elevated levels of nitrate (at concentrations exceeding the drinking water Maximum Contaminant Level (MCL) in Mission School's water supply well as further detailed below.

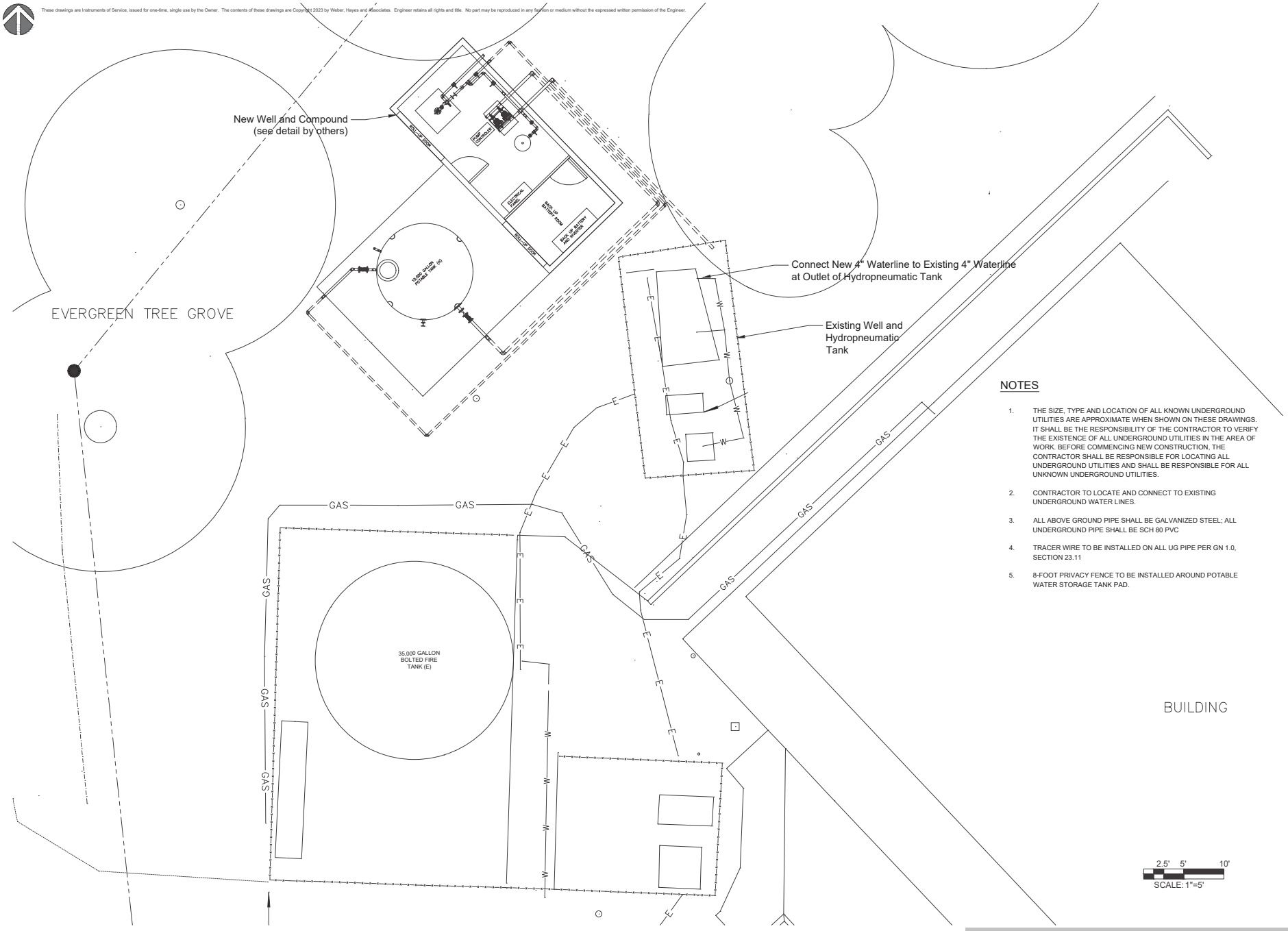
6.4.1 Existing System

Mission School utilizes groundwater as its drinking water source from a single groundwater well. The well is regularly pumped at a rate of 225-gallons per minute (GPM). The maximum capacity of the groundwater source is not known at this time. Water is distributed to the two existing Mission School buildings, a fire prevention tank, and to an irrigation system to water landscaping around the school buildings. Groundwater is not treated at the wellhead, so Mission School has installed 12 POU RO filters to remove nitrate concentrations from potable water, as described above. Mission School lacks a potable water storage tank and backup power supply, which leads to water supply interruptions during power outages. Mission School maintains a 35,000 gallon fire prevention water storage tank. This water is not considered potable as it is not currently connected to the water distribution system and therefore water sits in the tank in a stagnant state for long periods of time. Total enrollment at Mission School is approximately 124 students, and Mission School has 16 staff members. The total population served by the existing Mission School Water System is approximately 140 people. The service area boundaries are shown on **Figure 6. Site Plan.**

Land Use Map

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure
5



Source: Weber, Hayes & Associates, January 2024

Site Plan

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure 6

Historically, Mission School did not actively measure water use. On July 27, 2022, WHA installed a water meter at the well head to begin monitoring water use. While the data has not been collected over a long enough period to definitely estimate water usage, WHA used the gathered data, as well as water use at similar educational facilities, to approximate Mission School's estimated water use from the existing system.[2] WHA determined that the Average Daily Demand (ADD) at Mission School ranges from 5 to 14 gallons per day per person. To provide a conservative water use estimate, an ADD of 20 gallons per day per person is assumed. Based on the estimated Average Daily Demand (ADD) at Mission School of 20 gallons for the total population of 140 people (inclusive of students and faculty), the ADD is estimated for the entire site at 2,800 gallons per day. To determine the Maximum Daily Demand (MDD), the individual ADD of 20 gallons per day is multiplied by a peaking factor of 2.25, which generates an MDD of 6,300 gallons per day usage (WHA, 2024).[3]

As discussed above, Monterey County issued Mission School regulatory Compliance Order (No. 18-003) in November 2018 due to ongoing nitrate concentrations above the MCL. The proposed project is intended to a provide long-term solution to the nitrate issues documented in this Compliance Order.

Also, see **Appendix A**, Figures 3 and 4 for existing system configuration.

6.5 PROJECT DESCRIPTION

6.5.1 Project Objectives

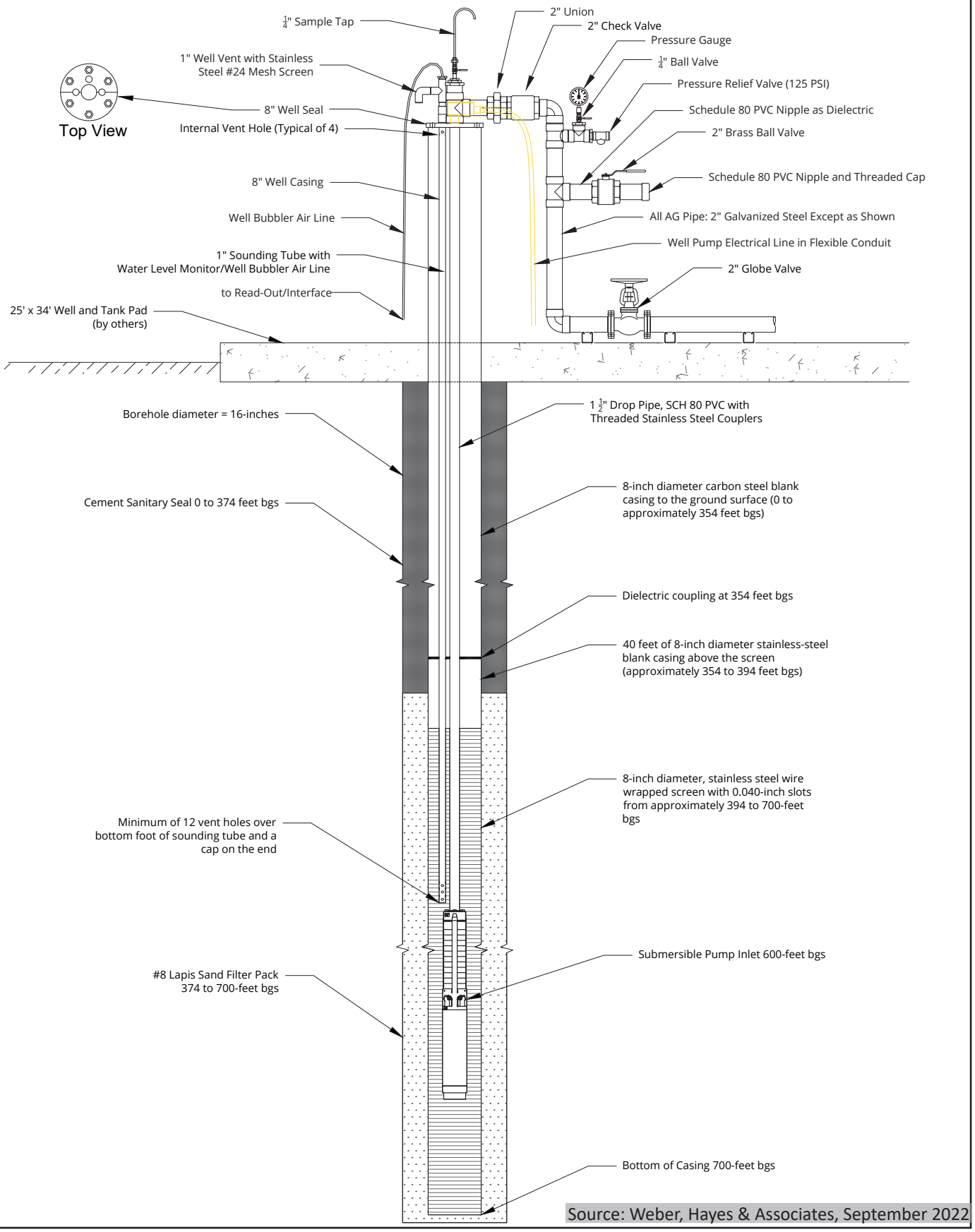
The primary project goal is to provide Mission School students and faculty with safe and reliable drinking water. To best meet the primary goal, the project's key objectives are:

- Supply safe and reliable drinking water;
- Comply with regulatory requirements;
- Meet the water system's O&M needs;
- Be financially viable;
- Satisfy public concerns; and
- Meet environmental requirements.

6.5.2 Project Components

The proposed project consists of installing a new well with a deeper well screen interval to reach deeper groundwater that is not affected by nitrate contamination. The proposed project also includes a new potable water storage tank and water booster pump system. These components are explained in more detail below.

[2] WHA determined that the Average Daily Demand (ADD) at Mission School ranges from 5 to 14 gallons per day per person. To provide a conservative water use estimate, an ADD of 20 gallons per day per person is assumed.
[3] The peaking factor of 2.25 is used due to the absence of monthly water use data in conformance with the requirements of Section 64554 of Title 22, CCR waterworks standards.



Source: Weber, Hayes & Associates, September 2022

Well Diagram

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure
7

Water Supply Well

This well is anticipated to reach groundwater between 394 and 700 feet below ground surface, which should not contain elevated nitrate concentrations (see **Appendix A**). The new well would be constructed with stainless steel wire wrapped screen from approximately 394 to 700-feet below ground surface (bgs). The location of the proposed well is shown in **Figure 6**; a diagram of the proposed well is provided as **Figure 7**.

The new well would require issuance of a water control zone variance from the County's Health Department or the County's approval of a written agreement between the owner of the property to the north of the new well and Mission School due to the new well's proposed location within 50 feet of the property line. The documentation would be required to demonstrate that a 50-foot well site control zone can be established to protect the well from vandalism, tampering, or other threats. The County's approval of the water control zone variance will be subject to final review and approval by the California Division of Drinking Water.

Water Pumps and Storage Tank

A submersible well pump will pump water from the well into the top of the new 10,000-gallon bolted steel water storage tank. An air gap will be created by placing the tank overflow below the inlet connection. Water will flow from the bottom of the storage tank to a duplex pressure pump, which will deliver water to the existing water distribution system. The location of the proposed pressure pumps and storage tank is shown in **Figure 6**; an enlarged diagram of the water storage tank is provided as **Figure 8**.

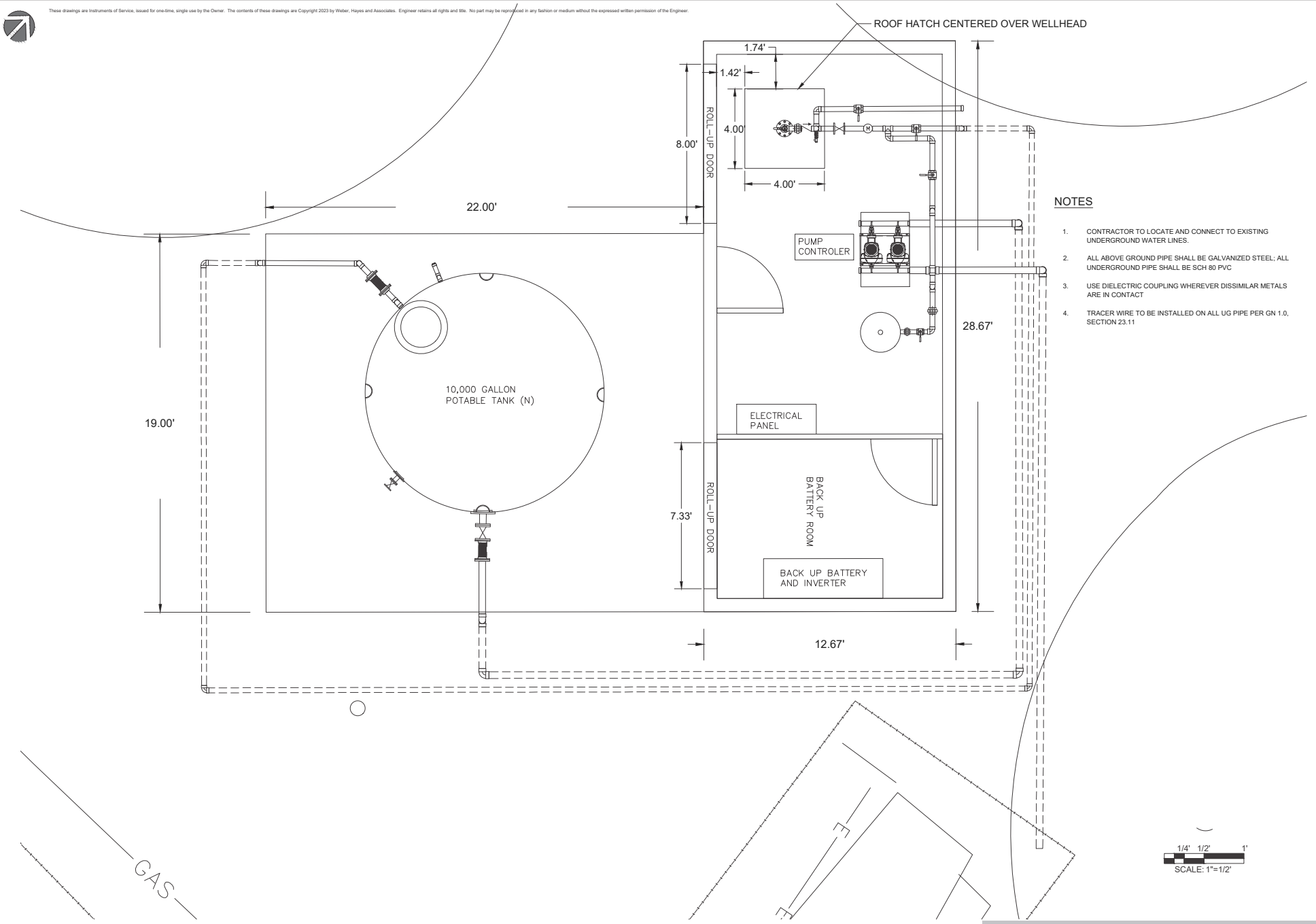
Water Lines

A dedicated water line will run from the well outlet to the new bolted steel storage tank adjacent to the well. Water will flow from the storage tank to a duplex pressure pump, which will deliver water to the existing water distribution system. The existing water distribution system supplies domestic water to the School, fills the existing fire water tank through an air gap, and provides irrigation water through a backflow preventer. This simple configuration matches the existing water supply while providing stored domestic water to meet the MDD.

6.5.3 Project Construction

Site Preparation

The proposed project would cover approximately 781 sf of total area and would be located within previously disturbed areas. In addition, approximately 12,500 sf of temporary staging areas would also be located on the Mission School Campus. Site preparation for the proposed project would consist of proper destruction of the existing well, which may include downhole blasting of the well screen, as well as removal of the existing wellhead, 500-gallon hydropneumatics tank, pump, pressure tank, and above ground piping. A shipping container would be removed from the area as part of site preparation.



Source: Weber, Hayes & Associates, January 2024

Water Storage Tank Diagram

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure
8

Construction

The proposed project would cover approximately 781 sf of total area and would be located within previously disturbed areas. The proposed project would construct a new well compound nearby the well removed as part of the demolition phase. The well compound structure would house the wellhead, appurtenances, well pump, booster pump, pressure tank, and connective piping. A propane powered backup generator would also be installed to allow well operation in the event of a power outage.

Construction equipment is anticipated to include a truck mounted drill rig for construction of the new well, a forklift used to deliver materials to the site, and an excavator for excavation, compaction and shallow trenching within the 781 sf building area. An estimated 250 cubic feet (cf) of soil cuttings from the construction of the new well would be stockpiled and hauled off site, as well as any additional soils resulting from excavation for structural foundation. The total amount of cut would not exceed 1,000 cf of soil.

Schedule

Construction is anticipated to occur over the course of approximately two (2) months. Construction is expected to begin in 2024. The anticipated schedule of these construction activities is as follows:

1. Site Preparation & Demolition: This phase will last approximately two (2) weeks.
2. Construction: This phase will last approximately three (3) weeks.

Construction Circulation and Access

During construction, the project site would be accessed by Foothill Road. It is currently unknown how many vehicle trips would be generated by the construction of the proposed project. The proposed project's staging areas would be located on the Mission Union School campus, to the west of the proposed well and also in vacant areas along the site's frontage on Foothill Road. No off-site staging of construction equipment would be required.

6.5.4 Project Operation

The proposed project would result in new aboveground components consisting of a 10,000 gallon storage tank mounted on a concrete pad and a new well/pump building. The well/pump building will house a wellhead, pressure pump, pressure tank, various appurtenances, a Supervisory Control and Data Acquisition (SCADA) system, control panels, and electrical panels. A propane powered generator would also be used during operation in the event of a power outage. Mission School's water system operator currently visits the project site at least once per month to provide operations and maintenance services, including water sampling and ongoing monitoring and maintenance. The water system operator would continue to visit the project site at the same frequency following completion of the proposed project. It is not expected the proposed project will require additional regular maintenance compared to existing conditions once operational and it is not anticipated that Mission School will need to hire additional employees to maintain the proposed project.

7. Surrounding Land Uses and Setting

The proposed project is located in a rural area west of the City of Soledad. Surrounding land uses primarily consist of agricultural and low-density residential uses as identified below:

North: Low-density Residential, Agricultural

South: Agricultural
East: Low-density Residential, Agricultural
West: Agricultural

8. Other Public Agencies Whose Approval is Required

State

- State Water Resources Control Board, Division of Financial Assistance - State Revolving Fund Financing Approval
- Division of State Architect – Approval of project plans
- Division of Drinking Water – Final Approval of Water Control Zone Variance

Regional/Local

- County of Monterey – Encroachment Permit
- County of Monterey – Grading Permit
- Monterey County Health Department - Well Permit
- Monterey County Health Department - Water Control Zone Variance[4]
- Monterey County Health Department - Water System Permit Amendment

[4] Required in the event that a written agreement cannot be reached with the adjacent property owner to the north of the proposed well. This written agreement would require approval by the Monterey County Health Department.

9. CEQA Checklist

1. AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	■	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	■	☐

SETTING:

The proposed project is located within the Greater Salinas Valley in unincorporated Monterey County. The City of Soledad is located approximately five miles northeast of the proposed project. There are no State-designated scenic highways located within the vicinity of the proposed project, the nearest State-designated scenic highway is State Route 1 which is a designated scenic highway and is located approximately 23 miles southwest of the proposed project (Caltrans, 2023). In addition, State Route 25 is listed as an eligible scenic highway, and is located approximately 16 miles northeast of the proposed project. There are no County-designated scenic highways within the vicinity of the proposed project area.

The project site consists of Mission Union Elementary School, which currently consists of a paved parking area, structures, and grassy areas. The land uses surrounding the proposed project area are primarily low-density residential and agricultural. The aesthetic quality of the site has previously been altered by the current uses described above. Vehicle traffic on Foothill Road is the primary source of public viewership for the proposed project. See **Figure 5. Site Photos**. The topography of the proposed project site and surrounding area is flat.

Construction of the proposed project will include trenching. Construction of the proposed project would not require any nighttime construction, and, therefore, construction activities would not result in any new nighttime lighting or glare. Construction is anticipated to last approximately two (2) months.

Once operational, the well/pump building and storage tank would be above ground and visible on the project site; the other components of the proposed project would not be visible.

IMPACT DISCUSSION:

a. The project site is located entirely within the existing Mission School campus, which is developed with educational facility uses (consisting of fields, structures, paved areas, etc.), a well, and a fire suppression water storage tank. The pump station, well, and potable water tank would be visible on the site following construction of the proposed project. All other project components would be underground and would not be visible after construction is complete. The wellhead and pump station would be housed in a building located close to the existing well, which would reduce visual impacts. Views from and over the project site are limited due to topography and vegetation, and the site does not offer views of scenic vistas. The project would not impact scenic vistas and is not located within a scenic corridor. Construction of the project may be temporarily visible from a small number of private residences and vehicles traveling on Foothill Road. Impacts to private views in a project's immediate vicinity are not considered under CEQA. The proposed project would have a ***less than significant impact*** on scenic vistas.

b. There are no scenic resources within the immediate vicinity of the project. Construction and operation of the project would result in a ***less than significant impact*** to scenic resources.

c. The existing visual character of the project site is comprised of educational uses, including grassy fields, paved areas, and two structures. The site's overall visual quality is considered low due to the surrounding agricultural and low-density residential uses. The residential and agricultural land uses within the vicinity of the project site do not enhance the area's aesthetic value. Construction impacts would include the presence of construction vehicles, equipment and materials, stockpiles, and exposed soils. These impacts would be temporary in nature. The site would be restored to its pre-construction condition following construction, with the exception of the structure housing the well and pump station and the potable water storage tank. These new aboveground features would consist of neutral colors in keeping with the overall visual characteristics of the site and would be sited to minimize visual impacts to the extent feasible. For these reasons, the proposed project would result in ***a less than significant impact*** on the existing visual character or quality of public views of the site and its surroundings.

d. The proposed project does not propose any new sources of light or glare. The new well, pump station, and potable water storage tank will be designed with non-reflective materials and would not include nighttime lighting. Other components of the proposed project would be located underground. Construction will not occur at night; therefore, no safety lighting will be needed. The proposed project would have a ***less than significant impact*** resulting from light and glare.

2. AGRICULTURE AND FOREST RESOURCES

Lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use In determining whether impacts to agricultural resources are significant environmental effects. Lead agencies may refer to

information compiled by the California Department of Forestry and Fire Protection in determining whether impacts to forest resources, including timberland, are significant environmental effects. These resources include 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:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

SETTING:

The proposed project is located in an area surrounded with active agriculture. The proposed project would be located entirely within the boundaries of the existing Mission School. No agricultural activities occur on the project site. The project site is designated as urban and built-up land on the California Department of Conservation's Important Farmland GIS Viewer (California Department of Conservation, 2023). The proposed project area is not under a Williamson Act contract, nor is it zoned for agricultural use.

Areas surrounding the project site in all directions are currently utilized for agriculture, along with low-density residential uses. Prime farmland is located west and north of the project site. Neither construction nor operation of the proposed project would encroach into agricultural land.

According to California Public Resources Code (PRC) Section 12220(g), forest land is defined as land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that

allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Timberland is defined as land, other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection, as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. The project site does not support any forest land or timberland.

IMPACT DISCUSSION:

a. The project site is designated as "Urban and Built-Up," on the Department of Conservation's Important Farmlands GIS Viewer (California Department of Conservation, 2023). Construction and operation of the proposed project would occur entirely within the boundaries of the Mission School. Land designated as "Unique Farmland" is located to the west and north of the proposed project, however, these areas would not be impacted by the proposed project. The proposed project would have ***no impact*** resulting from the conversion of prime farmland, unique farmland, or farmland of statewide importance.

b. The project site is not located on or near land enrolled under the Williamson Act. The proposed project would have ***no impact*** resulting from a conflict with existing zoning for agricultural use, or a Williamson Act contract.

c. The project site does not contain any forest land as defined in Public Resources Code Section 12220(g), timberland as defined by Public Resources Code Section 4526, or property zoned for Timberland Production as defined by Government Code Section 51104(g). The proposed project would have ***no impact*** resulting from a conflict in zoning for these land uses.

d. As mentioned above, there is no forest land within the project vicinity. The proposed project would result in ***no impact*** from the conversion of forest land to a non-forest use.

e. The proposed project would not involve changes in the existing environment which could result in conversion of farmland or agricultural land due to their location or nature. Construction impacts adjacent to agricultural resources would occur within existing disturbed areas and would be temporary in nature. The proposed project is a water system improvement project and would not convert any land for other use. For these reasons, this is considered a ***less than significant impact***.

3. AIR QUALITY

The proposed project is within the jurisdiction of the Monterey Bay Air Resources District (MBARD). MBARD is responsible for air monitoring, permitting, enforcement, long-range air quality planning, regulatory development, education and public information activities in Monterey County.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

SETTING:

Air Quality modeling was performed for the proposed project using the California Emissions Estimator Model (CalEEMod) based on data provided by the project engineer. The results of the CalEEMod simulation are contained in **Appendix B** of this document.

The project site is located in the North Central Coast Air Basin (NCCAB), which covers Monterey, Santa Cruz, and San Benito counties. The NCCAB is bordered by the Pacific Ocean to the west, the San Francisco Bay Area Air Basin (SFBAAB) to the north, the San Joaquin Valley Air Basin to the east, and the South Central Coast Air Basin to the south. Onshore sea breezes dominate regional wind patterns, bringing fog and cool air into the coastal valleys during the summer months. In the fall, winds generally slow or reverse direction toward the sea; in the winter, the Pacific high-pressure system moves south and has less influence on the NCCAB. In general, mild annual temperatures dominate in the maritime and coastal areas, and the interior and valley areas experience warmer summers and cooler winters. The NCCAB is situated downwind of the SFBAAB, and the transport of ozone precursor emissions from the SFBAAB plays a dominant role in ozone concentrations measured in San Benito and Santa Cruz counties.

Air pollutant emissions in the NCCAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles. The EPA administers National Ambient Air Quality Standards (“NAAQS”) under the Federal Clean Air Act. The EPA sets the NAAQS and

determines if areas meet those standards. Violations of ambient air quality standards are based on air pollutant monitoring data and evaluated for each air pollutant. Areas that do not violate ambient air quality standards are considered to have attained the standard.

Air quality in the NCCAB is regulated by MBARD, as noted above. MBARD monitors air pollutant levels to ensure that air quality standards are met and, if not met, develop strategies to meet the standards. Depending on whether or not the standards are met or exceeded, MBARD is classified as being in "attainment" or as "non-attainment." See **Table 1. Monterey Bay Air Resources District Attainment Status** below.

Table 1.
Monterey Bay Air Resources District Attainment Status

Pollutant	State Designation	National Designation
Ozone (O_3)	Attainment[1]	Attainment
Inhalable Particulates (PM_{10})	Nonattainment	Attainment
Fine Particulates ($PM_{2.5}$)	Attainment	Attainment
Carbon Monoxide (CO)	Monterey County – Attainment San Benito County – Unclassified Santa Cruz County – Unclassified	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Attainment

1. Effective July 26, 2007, the CARB designated the NCCAB a nonattainment area for the State ozone standard, which was revised in 2006 to include an 8-hour standard of 0.070 ppm.
Source: CARB 2020

Plans to attain these standards already accommodate the future growth projections available at the time these plans were prepared. Any development project capable of generating air pollutant emissions exceeding regionally established criteria is considered significant for purposes of CEQA analysis, whether or not such emissions have been accounted for in regional air planning. Any project that would directly cause or substantially contribute to a localized violation of an air quality standard would generate substantial air pollution impacts. The same is true for a project that generates a substantial increase in health risks from toxic air contaminants or introduces future occupants to a site exposed to substantial health risks associated with such contaminants.

Sensitive receptors are more susceptible to the effects of air pollution than the general population. Land uses that are considered sensitive receptors include residences, schools, and health care facilities. On-site sensitive receptors consist of students at the Mission School. Off-site sensitive receptors in the vicinity of the project site consist of nearby residences.

IMPACT DISCUSSION:

a) CEQA Guidelines §15125(b) requires an evaluation of project consistency with applicable regional plans, including the AQMP. As stated above, MBARD has developed and implemented several plans to address exceedance of State air quality standards, including the 2012-2015 AQMP. MBARD is required to update their AQMP once every three years; the most recent update was the 2012-2015 AQMP (MBARD, 2017) which was approved in March of 2017. This plan addresses attainment of the State ozone standard and federal air quality standard. The AQMP accommodates growth by projecting growth in emissions based on population forecasts prepared by the Association of Monterey Bay Area Governments (AMBAG) and other indicators. The proposed project would not result in any increase in employment, nor would the proposed project result in

increased population growth. The proposed project would be consistent with the MBARD 2012-2015 AQMP. For these reasons, implementation of the proposed project is not anticipated to result in a substantial increase in either direct or indirect emissions that would conflict with or obstruct implementation of the AQMP. This impact is considered ***less-than-significant***.

b) The MBARD 2016 CEQA Air Quality Guidelines ("Guidelines") contains thresholds of significance for evaluating potential air quality effects of projects subject to the requirements of CEQA. According to MBARD, a project will not have a significant air quality effect on the environment, if the following criteria are met:

Construction of the project will:

- Emit (from all sources, including exhaust and fugitive dust) less than;
  - 137 pounds per day of oxides of nitrogen (NO_x);
  - 137 pounds per day of reactive organic gases (ROG);
  - 82 pounds per day of respirable particulate matter (PM_{10});
  - 55 pounds per day of fine particulate matter ($PM_{2.5}$); and,
  - 550 pounds per day carbon monoxide (CO).

Operation of the project will:

- Emit (from all project sources, mobile, area, and stationary) less than;
  - 137 pounds per day of oxides of nitrogen (NO_x)
  - 137 pounds per day of reactive organic gases (ROG)
  - 82 pounds per day of PM_{10}
  - 55 pounds per day of $PM_{2.5}$
  - 550 pounds per day carbon monoxide (CO)
- Not cause or contribute to a violation of any California or National Ambient Air Quality Standard;
- Not result in a cumulatively considerable net increase of any criteria pollutant for with the project region is non-attainment;
- Not exceed the health risk public notification thresholds adopted by the MBARD;
- Not create objectionable odors affecting a substantial number of people; and,
- Be consistent with the adopted federal and state Air Quality Plans (MBARD, 2016).

Construction Emissions

The MBARD Guidelines for evaluating impacts during construction state that if a project generates less than 82 lb./day of PM_{10} emissions, the project is considered to have less than significant impacts (MBARD, 2016). The Guidelines also state that a project will result in less than significant impacts if daily ground-disturbing activities entail less than 8.1 acres of minimal earthmoving, or less than 2.2 acres of grading and excavation per day. Construction projects below these acreage thresholds would be below the applicable MBARD 82 lb./day threshold of significance and would constitute a less than significant effect for the purposes of CEQA (MBARD, 2016). The proposed project would require 1,250 CY of cut to be exported from the site, and grading of 6.5 acres. The proposed project would not generate more than 2.2 acres of grading and excavation per day or 8.1 acres of minimal earthmoving per day, as the 6.5-acres to be graded over three (3) working days would result in an average of approximately 2.2-acres graded per day. As a result, the proposed project would result in a less than significant construction-related air quality effect.

Construction of the proposed project would result in temporary increases in emissions of inhalable particulates ($PM_{2.5}$ and PM_{10}), VOC, CO, and NO_x associated with construction-related activities. **Table 2. Construction Air Quality Emissions** below, provides detailed information on these construction emissions (see also **Appendix B**). Construction-related fugitive dust emissions associated with the proposed project would be generated from site grading and construction. In addition to construction-related fugitive dust, exhaust emissions associated with construction vehicles and equipment would also be generated. The proposed project includes the following standard best management practices to reduce construction air quality emissions:

- Limiting vehicle speeds on unpaved roads and services to five (5) mph.
- Daily sweeping of paved surfaces.
- Use of high efficiency lighting.
- Daily watering of unpaved surfaces.

Table 2. Construction Air Quality Emissions

	Emissions in Pounds/Day				
	NO_x	$PM_{2.5}$	PM_{10}	ROG	CO
Significance Threshold (MBARD)	137*	55	82	137*	550
Emissions generated by the Project	9.95	3.71	32.7	0.74	8.23
Exceed Threshold?	No	No	No	No	No

Emissions Source: **Appendix B**
Significance Threshold Source: MBARD, 2016
* Applies to non-typical construction equipment (i.e., well drilling) MBARD has identified that construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors and front-end loaders that temporarily emit precursors of ozone (i.e., VOC or NO_x), are accommodated in the emission inventories of State- and federally-required air plans. Temporary emissions associated with the operation of construction equipment have been accommodated in State- and federally-required air plans.

As described above in **Table 2**, the proposed project would not exceed MBARD's daily thresholds for criteria pollutant emissions during construction. The proposed project would result in a ***less than significant impact*** related to construction air quality emissions.

Operational Emissions

Operation of the proposed project would not result in a small increase in air pollution emissions related to operation of the proposed well, as well as from vehicle trips to the site for maintenance activities. All components of the proposed project have been designed in accordance with applicable regulatory requirements limiting air quality emissions. As shown below in **Table 3**, all operational emissions of the proposed project would be below applicable MBARD thresholds of significance.

Table 3. Operational Air Quality Emissions

	Emissions in Pounds/Day				
	NO_x	$PM_{2.5}$	PM_{10}	ROG	CO
Significance Threshold (MBARD)	137	55	82	137	550
Emissions generated by the Project	0.01	0.06	0.57	0.03	0.05
Exceed Threshold?	No	No	No	No	No

Emissions Source: **Appendix B**
Significance Threshold Source: MBARD, 2016

As described above in **Table 3**, the proposed project would not exceed MBARD's daily thresholds for criteria pollutant emissions during construction. The proposed project would result in a ***less than significant impact*** related to construction air quality emissions.

c. The following discussion analyzes the potential for construction and operation of the proposed project to result in exposure of sensitive receptors to substantial pollutant concentrations.

Construction

A "sensitive receptor" is generally defined as any residence including private homes, condominiums, apartments, or living quarters; education resources such as preschools and kindergarten through grade twelve ("k-12") schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. The proposed project is located in the existing Mission School campus and residential uses are located as close as 450 feet to the project site . Therefore, impacts to sensitive receptors could occur, but would be minimized with implementation of the following standard construction best management practices ("BMPs"):

- Water all active construction areas as required with non-potable sources to the extent feasible; frequency should be based on the type of operation, soil, and wind exposure and minimized to prevent wasteful use of water and non-stormwater runoff.
- Prohibit grading activities during periods of high wind (over 15 mph).
- Hand sweep daily within paved areas.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Enclose, cover, or water daily exposed stockpiles (dirt, sand, aggregate, etc.).
- Replant vegetation in disturbed areas as quickly as possible.
- Provide stabilized construction entrances/exits to limit sediment tracking from the site.

In addition, as identified above, the proposed project would not exceed applicable MBARD thresholds of significance during construction. Therefore, with implementation of the above BMPs, construction of the proposed project would result in a ***less than significant impact*** related to exposure of sensitive receptors to substantial pollutant concentrations.

Operational

Operation of the proposed project is not anticipated to result in increased exposure of sensitive receptors to air pollutant concentrations. As described above, all operational pollutant emissions would be well below MBARD thresholds of significance during operation. Operation of the proposed project would result in a ***less than significant impact*** related to exposure of sensitive receptors to substantial pollutant concentrations.

d. There may be intermittent odors from construction associated with diesel exhaust that could be noticeable at times to residences in close proximity. However, given the limited construction duration, potential intermittent odors are not anticipated to result in odor complaints and would not affect a substantial number of people. Operation of the project would not result in other emissions that would adversely affect a substantial number of people. A ***less than significant impact*** would result from other emissions, including odors.

4. BIOLOGICAL RESOURCES

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

SETTING:

This section assesses the project's potential impacts to biological resources. Potential effects to biological resources associated with project were assessed based on an evaluation of historic and current conditions in the context of the project.

Regulatory Setting

State

California Fish and Game Code

Birds. Section 3503 of the Fish and Game Code states that it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Section 3503.5 prohibits the killing, possession, or destruction of any birds in the orders Falconiformes or Strigiformes (birds-of-prey). Section 3511 prohibits take or possession of fully protected birds. Section 3513 prohibits the take or possession of any migratory nongame birds designated under the federal Migratory Bird Treaty Act. Section 3800 prohibits take of nongame birds.

Species of Special Concern. The California Department of Fish and Wildlife (CDFW) maintains a list of wildlife "species of special concern." Although these species have no legal status, the CDFW recommends considering these species during the analysis of project impacts to protect declining populations and avoid the need to list them as endangered in the future.

Local

Central Salinas Valley Area Plan

Section 3 of the Salinas Valley Area Plan states within areas designated as "sensitive" or "highly sensitive" on the Scenic Highway Corridors and Visual Sensitivity Map, landscaping or new development may be permitted of the development is located and designated in such a manner that public views are not disrupted".

Environmental Setting

The proposed project is located within the Greater Salinas Valley in unincorporated Monterey County. The survey area encompassed the entire Mission School campus (**Figure 9**). The impact area for the proposed project is located within the western portion of the Mission School campus (**Figure 9**). The project site consists of developed and ruderal/disturbed habitats.

Survey Methodology

DD&A Assistant Environmental Scientist, Kimiya Ghadiri, conducted surveys of the project site on September 6, 2023. The survey area consisted of the entire Mission School campus (**Figure 9**). Survey methods included walking the survey with aerial imagery and Global Positioning System (GPS) equipment to identify general habitat types, plant species to intraspecific taxon necessary to eliminate them as being special-status species, and potential habitat for special-status plant species. Ms. Ghadiri also conducted reconnaissance-level wildlife habitat surveys to identify any special-status wildlife species or suitable habitat for such species within the site.

The project site was surveyed for botanical resources following the applicable guidelines outlined in the U.S. Fish and Wildlife Service (USFWS) Guidelines for Conducting and Reporting Botanical Inventories for Federally listed, Proposed and Candidate Plants (USFWS, 2000), the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW, 2018), and the California Native Plant Society (CNPS) Botanical Survey Guidelines (CNPS, 2001). The survey

also included an assessment of potentially jurisdictional wetlands and waters within the project site in accordance with the requirements set forth in The Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual (Wetland Training Institute, 1995) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (U.S. Army Corps of Engineers [ACOE], 2008). General and sensitive habitat types were mapped during the survey effort using a combination of GPS and hand drawing on aerial maps, which were later digitized using ArcGIS software.

DD&A used data collected during the surveys to assess the environmental conditions of the project site and its surroundings, evaluate environmental constraints at the site and within the local vicinity, and provide a basis for recommendations to minimize and avoid impacts to biological resources.

Special-Status Species

Special-status species are those plants and animals that have been formally listed or proposed for listing as endangered or threatened, or are candidates for such listing, under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA). Listed species are afforded legal protection under the ESA and CESA. Species that meet the definition of rare or endangered under the CEQA Guidelines Section 15380 are also considered special-status species. Animals on the CDFW's list of "species of special concern" (most of which are species whose breeding populations in California may face extirpation if current population trends continue) meet this definition and are typically provided management consideration through the CEQA process, although they are not legally protected under the ESA or CESA. To note, CDFW includes some animal species that are not assigned any of the other status designations in the California Natural Diversity Database (CNDDB) "Special Animals" list; however, these species have no legal or protection status and are not analyzed in this IS/MND.

Plants listed as rare under the California Native Plant Protection Act (CNPPA) or included in CNPS California Rare Plant Ranks (CRPR; formerly known as CNPS Lists) 1A, 1B, 2A, and 2B are also treated as special-status species as they meet the definitions of Sections 2062 and 2067 of the CESA and in accordance with CEQA Guidelines Section 15380.[5] In general, the CDFW requires that plant species on CRPR 1A (Plants presumed extirpated in California and Either Rare or Extinct Elsewhere), CRPR 1B (Plants rare, threatened, or endangered in California and elsewhere), CRPR 2A (Plants presumed extirpated in California, but more common elsewhere); and CRPR 2B (Plants rare, threatened, or endangered in California, but more common elsewhere) of the CNPS *Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2020) be fully considered during the preparation of environmental documents under CEQA. CNPS CRPR 4 species (plants of limited distribution) may, but generally do not, meet the definitions of Sections 2062 and 2067 of CESA, and are not typically considered in environmental documents relating to CEQA. While other species (i.e., CRPR 3 or 4 species) are sometimes found in database searches or within the literature, these do not meet the definitions of Section 2062 and Section 2067 of CESA and are not analyzed in this IS/MND.

Raptors (e.g., eagles, hawks, and owls) and their nests are protected in California under Fish and Game Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except otherwise provided by this code or any regulation adopted pursuant thereto." In addition, protected species under Fish and Game Code Section 3511 (birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians) are also considered special-status animal

[5] CNPS initially created five (5) CRPR to categorize degrees of concern; however, to better define and categorize rarity in California's flora, the CNPS Rare Plant Program and Rare Plant Program Committee have developed the new CRPR 2A and CRPR 2B.

species. Species with no formal special-status designation but thought by experts to be rare or in serious decline may also be considered special-status animal species in some cases, depending on project-specific analysis and relevant, localized conservation needs or precedence.

DD&A obtained current agency status information from the USFWS and CDFW for species that are listed, proposed for listing, or are candidates for listing as Threatened or Endangered under ESA or CESA, or are CDFW species of special concern (USFWS, 2023 and CDFW, 2023). DD&A reviewed CNDDB reports for special-status species occurrences in the U.S. Geological Survey (USGS) quadrangle containing the project site (Soledad) and the eight (8) surrounding quadrangles (Bickmore Canyon, Gonzales, Greenfield, Mount Johnson, North Chalone Peak, Palo Escrito Peak, Paraiso Springs, and Sycamore Flat). Special-status plant and wildlife species known to occur or with the potential to occur within the project vicinity, along with their legal status, habitat requirements, and likelihood to occur within the project site, are included in **Appendix C, Special-Status Species Table.**

Sensitive Habitats

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species, areas of high biological diversity, areas supporting rare or special-status wildlife habitat, wildlife corridors, and unusual or regionally restricted habitat types. Vegetation communities considered sensitive include those listed on CDFW's California Natural Communities List (i.e., those habitats that are rare or endangered within the borders of California) (CDFW, 2023), those that are occupied by species listed under the ESA or are critical habitat in accordance with ESA, and those that are defined as Environmentally Sensitive Habitat Areas (ESHA) under the Coastal Act. Specific habitats may also be identified as sensitive in city or county general plans or ordinances. Sensitive habitats are regulated under federal regulations (such as the Clean Water Act [CWA] and Executive Order [EO] 11990 – Protection of Wetlands), state regulations (such as CEQA and the CDFW Streambed Alteration Program), or local ordinances or policies (such as city or county tree ordinances and general plan policies).

Existing Conditions

Vegetation Types

One (1) habitat type, ruderal/disturbed, occurs within the survey area and project site (**Figure 9**). In addition, a portion of the project site is developed. A summary of vegetation types within the project site (inclusive of staging areas) is provided in **Table 4**. The following sections provide an overview of the vegetation type and developed areas.

Table 4. Summary of Vegetation Types

Vegetation Type	Area	
	Survey Area	Project Site
Ruderal / Disturbed	5.71 acres	0.17 acres
Developed	2.29 acres	0.14 acre

Habitat Type Map

Mission Union Elementary School Water System Improvements Project
Initial Study

Figure
9

Ruderal/Disturbed

Ruderal areas are those areas which have been disturbed by human activities and are dominated by nonnative annual grasses and other "weedy" species. Most of the undeveloped portions of the survey area consist of ruderal habitat dominated by landscape plants and non-native weedy plant species, such as hottentot fig (*Carpobrotus sp*.), cheeseweed (*Malva parviflora*), mustard (*Brassica sp.*), slender wild oat (*Avena barbata*), sow thistle (*Sonchus oleraceus*), and dandelion (*Hypochaeris radicata*). Additionally, coast live oak (*Quercus agrofolia*), Monterey pine (*Pinus radiata*), blue gum eucalyptus (*Eucalyptus globulus*), and various species of fruit trees are part of the landscaping in the ruderal portions of the survey area. Approximately 5.71 acres of ruderal/disturbed areas are present within the survey area; however, only 0.17 acres would be impacted by the project (**Table 4, Figure 9**), associated mostly with staging on the west side of the Mission School property.

Ruderal areas have low biological value because they are generally dominated by non-native plant species and consist of relatively low-quality habitat from a wildlife perspective. Common wildlife species which do well in urbanized and disturbed areas that may occur within the ruderal habitat include American crow (*Corvus brachyrhynchos*), Steller's jay (*Cyanocitta stelleri*), striped skunk (*Mephitis mephitis*), scrub jay (*Aphelocoma californica*), European starling (*Sturnus vulgaris*), and western fence lizard (*Sceloporus occidentalis*). Nesting raptors and other avian species such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), California scrub jay (*Aphelocoma californica*), dark-eyed junco (*Junco hyemalis*), mourning dove (*Zenaida macroura*), and sparrows (*Zonotrichia* sp.), have a potential to nest within the trees and vegetation present within the survey area.

Developed

Developed areas within the survey area include roadways, buildings, a parking lot, and a well site. Vegetation within these areas consist only of ornamental plants, turf, and sparse weedy non-native species. As such, developed areas are considered to have no biological value. Approximately 2.29 acres of developed areas are present within the survey area; however, only approximately 0.14 acres will be impacted by the project (inclusive of staging areas). No suitable habitat for special-status species is present within developed areas.

Sensitive Habitats

No sensitive habitats were identified within the survey area.

Special-Status Wildlife Species

Published occurrence data within the project area and surrounding U.S. Geological Survey quadrangles were evaluated to compile a table of special status species known to occur in the vicinity of the project site. Each of these species was evaluated for their likelihood to occur within and immediately adjacent to the site. The special-status species that are known to or have been determined to have a moderate or high potential to occur within or immediately adjacent to the project site are discussed below. All other species are assumed unlikely to occur or have a low potential to occur within the project site based on the species-specific reasons presented in **Appendix C**, are therefore unlikely to be impacted by the project, and are not discussed further.

Protected Avian Species

Raptors and other nesting birds are protected under the California Fish and Game Code. While the life histories of these species vary, overlapping nesting and foraging similarities allow for their concurrent discussion. Most raptors are breeding residents throughout most of the wooded portions of the state. Stands of live oak, riparian deciduous, or other forest habitats, as well as open grasslands, are used most frequently for nesting. Smaller avian species may also nest in scrub habitats and urban areas. Breeding occurs February through September, with peak activity May through July. Various avian species and raptors, such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), California scrub jay (*Aphelocoma californica*), dark-eyed junco (*Junco hyemalis*), mourning dove (*Zenaida macroura*), and sparrows (*Zonotrichia* sp.), have a potential to nest within the trees and vegetation present within the survey area. While trees and vegetation are present adjacent and near the project impact area, no trees are proposed to be removed as a result of the project.

Special-Status Plant Species

No special-status plant species were identified within the project site during the September 2023 survey or have the potential to occur within the survey area (**Appendix C**).

IMPACT DISCUSSION:

a. Nesting raptors and other protected avian species have the potential to occur within the project site. If present within the project site, construction of the project could result in direct and/or indirect impacts to these species. Construction of the project could result in direct and/or indirect impacts to raptors and other nesting avian species (e.g., wildlife harassment or mortality and nest abandonment) associated with construction activities (e.g., noise, dust, vegetation removal, erosion and sedimentation, and hazardous material spills). No impacts would occur during operation of the proposed project. This is considered a ***less than significant impact with mitigation incorporated***, see Mitigation Measure BIO-1 below.

b. The project site does not contain riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service; therefore, ***no impact*** would result to these natural communities from implementation of the proposed project.

c. There are no state or federally protected wetlands on or directly adjacent to the project site; therefore, ***no impact*** to wetlands would result from implementation of the project.

d. The majority of the project site and the surrounding areas are developed and disturbed and provide little habitat for wildlife species. As a result, the development of the project, would not 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. This represents a ***less than significant impact*** and no mitigation is required.

e. The project does not conflict with the natural resource/biological guidelines described in the Central Salinas Valley Area Plan and it will not result in the removal of trees, therefore, ***no impacts*** to local policies or ordinances are anticipated as a result of the project.

f. There are no adopted HCPs, NCCPs, or other approved local, regional or state habitat conservation plans located within the project area, therefore, ***no impacts*** are anticipated as a result of the project.

Mitigation Measures incorporated into the project:

BIO-1 To avoid and reduce impacts to nesting raptors and other nesting avian species, construction activities can be timed to avoid the nesting season period. Specifically, construction activities can be scheduled after September 1 and before January 31 to avoid impacts to these species. Alternatively, if avoidance of the nesting period is not feasible, a qualified biologist shall be retained to conduct pre-construction surveys for nesting raptors and other protected avian species within 250 feet of proposed construction activities if construction occurs between February 1 and August 31. Pre-construction surveys will be conducted no more than 14 days prior to the start of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). Because some bird species nest early in spring and others nest later in summer, some breed multiple times in a season, surveys for nesting birds may be required to continue during construction to address new arrivals. The necessity and timing of these continued surveys will be determined by the qualified biologist based on review of the final construction plans.

If raptors or other protected avian species nests are identified during the pre-construction surveys, the qualified biologist will notify the project applicant and an appropriate no-disturbance buffer will be imposed within which no construction activities or disturbance should take place as determined by the qualified biologist to ensure avoidance of impacts to the individuals. The buffer will remain in place until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

5. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	■	☐	☐

SETTING:

Achasta Archaeological Services, Inc. prepared a Preliminary Archaeological Assessment for the proposed project (Achasta, 2023) (**Appendix D**). However, since the contents of Achasta's report are potentially confidential, a copy of this report is not included in this Initial Study. Qualified personnel may request a copy of this study from Mission Union School District. Achasta's study was conducted to comply with requirements under CEQA guidelines (Public Resources Code 21000 et seq.). The purpose of this study was to document cultural resource identification efforts for the proposed project. The study included archival and background research, a search of records at the California Historical Resources Information System's Northwest Information Center (NWIC), Native American stakeholder outreach; and a pedestrian survey of the proposed project area.

A search of records at the NWIC indicated that no previous cultural resource studies have been conducted within the project area. The project site was studied as part of a County-wide cultural resources study that focused on built environment resources located in unincorporated areas of Monterey County between Salinas and Soledad. This study was not specific to the project site or the immediate vicinity. According to the record search, there are no previously identified cultural resources within the project area and no cultural resources within a 1/4-mile radius of the project area.

Achasta conducted a Phase I pedestrian survey of the project site, limited to the portion of the site proposed for development of the proposed project. Achasta examined the exposed ground surfaces within the project area for the presence of precontact and historic site indicators. Achasta did not observe any site indicators of precontact cultural activity, such as bone, midden soils, shell fragments, stone tools or flaked stone materials, charcoal, or fire-affected rocks. Achasta also did not observe any indicators of Mission Period or American Period historical activity, such as adobe brick fragments, roof or floor tile fragments, glass, ceramic, metal hardware, or other building debris, farming or ranching equipment, or structural remnants. Achasta's investigation indicates that a historical resource or potentially significant cultural materials are not located in the project area.

The Native American Heritage Commission (NAHC) provided the results of a Sacred Lands File search and list of Tribal stakeholders on April 5, 2023. According to the NAHC, the Sacred Lands File search is negative. NAHC provided a Native American stakeholder list that included groups or individuals who may have knowledge of cultural resources in the area. Letters containing a brief project description and maps of the proposed Project Area were sent via certified mail on August 31, 2023. The results of the Native American outreach and consultation for tribal cultural resources as required under Assembly Bill (AB) 52 is discussed in **Section 18. Tribal Resources**.

Precontact Period

The project area is located within the contemporary and ancestral boundaries of multiple Tribes, including the Esselen, Salinan, Chalon-Costanoan Tribal polities. Prior to the Spanish missionary's arrival to what is now known as Monterey County in 1770, the Esselen, Salinan, and Chalon-Costanoan societies in the Salinas Valley subsisted as hunter-gatherers. They crafted mortars and pestles, and hand stones and milling slabs from local granite, mudstone, and sandstone to process plants and animals for foods, medicines, and pigments. Wild tobacco was also managed and utilized. Based on 18th century observations, the Esselen, Salinan, and Chalon-Costanoan societies were semisedentary with a partial dependence on acorn crops beginning in the Late Period, circa 750 years before present (YBP). This is evidenced by bedrock mortar sites throughout California. Habitation sites are regularly found along streams and confluences, and in the vicinity of natural springs and seeps; however, the original location of these

drainages may have been altered due to natural or human impacts to landscapes. Habitation, gathering, and processing sites are typically located along historic and contemporary river and creek drainages, marshlands, and vernal ponds throughout Monterey County's interior woodland and grassland areas.

Historic Period

In 1770, the Spaniards, led by Captain Don Gaspar de Portolá and Franciscan Father Junípero Serra, established the first colonial settlement in the Central Coast region with the founding of the presidio and Mission San Carlos Borromeo de Monterey. In 1791, Father Fermin Lasuen founded Mission Nuestra Señora de la Soledad at the Esselen ancestral village of Chuttugelis. The subsequent founding of the colonial pueblo government in 1794 resulted in a steady increase in European and western populations, and a significant decrease in Indigenous populations. The subject parcel lies within the historic boundaries of Mission Nuestra de la Soledad land tracts. Mission Soledad, the thirteenth mission in the Alta California mission chain, was founded in 1971 by Franciscan Father Fermin Lasuen. The Mission Soledad lands that were improved and managed by the missionized Esselen and Chalon-Costanoan were vast and included croplands, a vineyard, orchard, and three cattle and sheep ranches.

Significant changes for the missions, including the opportunity to engage in international trade, began when Mexico achieved independence from Spain in 1822. Spanish land control practices were replaced with private land grants given or sold to prominent Californio families after the secularization of the California missions. In 1839-40, William E. P. Hartnell served as Visitador General for the secularized mission lands and conducted an inventory of Mission Soledad for Mexican Governor Juan Bautista Alvarado. Hartnell reported seventy-eight Tribal citizens continued to reside at the mission and neighboring ranchos in 1839. Although it was presumed the Esselen and Chalon-Costanoan Tribes would receive allotments of the mission lands during Governor Jose Figueroa's 1833-1834 secularization decrees, the lands were instead temporarily transferred to Administrators and eventually the civilian population.

In 1848 after the end of the Mexican-American War, the United States annexed nearly all of the territory of the present states of New Mexico, Utah, Nevada, Arizona, California, Texas, and western Colorado. Although the Californio's had intended to grant Indigenous families mission lands during the Mexican period of secularization, those grants and gestures were not recognized by the American government. The Land Act of 1851 resulted in the incorporation of the U.S. Land Commission and the review of land grants given during the Mexican period. During this process, the United States Congress authorized Special Agents McKee, Barbour and Wozencraft to meet and treat with the California Tribes. Eighteen treaties were negotiated between the California Tribes and the special agents. The treaties were established to accomplish two basic goals: 1) to cede the majority of Aboriginal lands of California to the United States Government; and 2) to reserve 8.5 million acres of land in the interior of the state to be used by the California Tribes as reservation lands. Today, the eighteen treaties remain unratified.

In 1897, the Salvation Army purchased a 520-acre portion of the former Mission Soledad for the development of Fort Romie. Fort Romie was a planned colony designed to provide housing and occupational training to improve the standard of living for poor families in need. The Fort Romie colony was the first of three Salvation Army colonies attempted in the United States and received broad public support and funding for initial infrastructure needs. Fort Romie infrastructure also included a schoolhouse to serve the colony's children. The original Mission School was established in 1897, approximately ¼-mile west of the subject parcel and present school site. A second schoolhouse was constructed in 1932, west of the current school site. In 1974, the school relocated east of Foothill road to the present Mission School site and subject parcel. The student populations served by the Mission Union School District have historically been derived from families tied to agriculture and agricultural industries.

IMPACT DISCUSSION:

a. CEQA Guidelines §15064.5 describes a historical resources as: 1) any resource that is listed in, or determine to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources; 2) a resource included in a local register of historical resources; and, 3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant based on substantial evidence in light of the whole record. The fact that a resource is not listed in or determined to be eligible for listing does not preclude a lead agency from determining that the resource may be a historical resource (CEQA Guidelines §15064.5(4)). A substantial change includes the physical demolition, destruction, relocation, or alteration of a resource or its immediate surroundings such that the significance would be materially impaired (CEQA Guidelines §15064.5(b)).

The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5. The project area does not contain any historic resources listed in the California Inventory of Historical Resources, California Historical Landmarks, or the National Register of Historic Places. There are no structures or other items of historic significance within the project area. Therefore, the proposed project will have ***no impact*** on historical resources as defined in CEQA Section 15064.5.

b. Public Resources Code §21083.2 requires that lead agencies evaluate potential impacts to archaeological resources. Specifically, lead agencies must determine whether a project may have a significant effect or cause a substantial adverse change in the significance of an archaeological resource. The findings of the Phase I cultural report did not document any confirmed evidence of an archaeological resource. The proposed project would not significantly impact a known archaeological resource. Although not anticipated, there is the potential for inadvertent discovery of archaeological resources during construction, which may result in potential inadvertent damage or disturbance to a resource. This is considered ***a less than significant impact with mitigation incorporated***, see Mitigation Measures CR-1 and CR-2 below.

c. Human graves are often associated with prehistoric occupation sites. Section 7050.5 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial and Section 5097.99 of the Public Resources Code defines the obtaining or possession of Native American remains or grave goods to be a felony.

Although not anticipated, there is the potential for inadvertent discovery of human remains and potential inadvertent damage or disturbance during construction. This is a ***less than significant impact with mitigation incorporated***, see Mitigation Measure CR-3 below.

Mitigation Measure(s) incorporated into the project:

CR-1 Prior to the initiation of any ground-disturbing activities, a cultural resource sensitivity training led by a qualified archaeologist shall be conducted for all construction personnel. The training shall include the regulatory contexts guiding the proposed project and governing the protection of cultural resources, guidance for identifying cultural resources, protocols to follow in case of inadvertent discoveries, and contact information for key Project personnel, the lead agency, and the Monterey County Sheriff-Coroner. Documentation that this training occurred shall be provided to the lead agency.

CR-2 If archaeological resources are unexpectedly discovered during construction, work shall be halted within 150 feet of the find until it can be evaluated by a qualified professional archaeologist. If the resource is considered significant and/or unique, ground disturbance shall be halted until an archaeological consultant has been retained, and a comprehensive Archaeological Research Design and Treatment Plan is developed by the archaeological consultant and approved by the Lead Agency and Project proponent.

CR-3 If human remains are unexpectedly discovered during construction, work shall be halted within 150 feet of the find. The County Coroner shall be notified in accordance with provisions of Public Resources Code 5097.98-99 in the event human remains are found and the Native American Heritage Commission shall be notified in accordance with the provisions of Public Resources Code section 5097 if the remains are determined to be of Native American origin. The Commission will designate a Most Likely Descendant who will be authorized to provide recommendations for management of the Native American human remains. (California Public Resources Code Section 5097.98; and Health and Safety Code Section 7050.5)

6. ENERGY

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

SETTING:

Beginning in 2018, Monterey County-based customers, including Mission School, began to receive their electricity from Central Coast Community Energy (3CE) (previously known as Monterey Bay Community Power). 3CE is a community choice energy agency that has committed to providing its customers with 100% carbon-free energy by the year 2030 (3CE, 2023). Community choice energy agencies allow local governments to procure power on behalf of their residents, businesses, and municipal accounts from an alternative supplier while still receiving transmission and distribution service from their existing utility provider. This is typically an attractive option for communities that want more local control over their electricity sources, more clean energy than their default utility offers, and/or lower electricity prices. Per Public Utilities Code Section 366.2, customers have the right to opt-out of the community choice energy program and continue to receive service from Pacific Gas & Electric (PG&E), the incumbent utility provider.

IMPACT DISCUSSION:

a. Electricity for the project site will be provided by 3CE via infrastructure owned and operated by PG&E. The project's construction and operational energy usage are included in **Appendix B**, based on GHG and modeling using CalEEMod, version 2020.4.0. Electricity consumption rates are compared to existing consumption in the 3CE/PG&E service areas. Project modeling provides an estimate of construction and operational emissions and energy consumption. The project will not consume large amounts of energy outside the functions commonly found within water systems. The anticipated construction schedule assumes that the project would be built out over a maximum of two (2) months. The construction phase would require energy for the preparation of the site (e.g., excavation, and grading), and the actual construction of the facilities. Petroleum based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks. The overall construction of the proposed project is designed to be energy-efficient in order to avoid excess fuel and rental equipment costs. During operation, the project would consume energy in the form of electricity primarily for pumping water. However, energy use from operation of the proposed well would be offset due to the removal of the existing on-site well. Based on the discussion above, the project would result in a ***less than significant impact*** during the construction and operational phases related to energy use.

b. The proposed project would comply with existing state energy standards and would not conflict with or obstruct a state or local plan for renewable energy or energy-efficiency. The proposed project would be designed to comply with the California Green Building Code, Title 24 energy efficiency requirements, and current California Building Energy Standards requirements. The proposed project would result in a ***less than significant impact*** resulting from conflict or obstruction with a state or local plan for renewable energy or energy efficiency.

7. GEOLOGY AND SOILS

Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	■	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
iii. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
iv. Landslides?	☐	☐	■	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the most recent 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?	☐	☐	■	☐

SETTING:

This section is based, in part, on the results of a site-specific geological investigation for the proposed project, prepared by Pacific Crest Engineering (see **Appendix E**).

Regional Geologic Setting

The proposed project is located within the lower Salinas Valley, on the eastern flank of the Sierra De Salinas range, in the central portion of the Coast Ranges physiographic province of California. This portion of the Coast Ranges is formed by a series of rugged, linear ridges and valleys following the pronounced northwest to southeast structural grain of central California geology. The Sierra De Salinas is mostly underlain by a large, elongate prism of granitic and metamorphic basement rocks, known collectively as the Salinian Block. These rocks are separated from contrasting basement rock types to the northeast and southwest by the San Andreas and San Gregorio-Nacimiento strike-slip fault systems, respectively. Overlying the granitic basement rocks is a sequence of dominantly marine sedimentary rocks of Paleocene to Pliocene age and non-marine sediments of Pliocene to Pleistocene age.

Throughout the Cenozoic Era, this portion of California has been dominated by tectonic forces associated with lateral or "transform" motion between the North American and Pacific lithospheric plates, producing long, northwest-trending faults such as the San Andreas and San Gregorio, with horizontal displacements measured in tens to hundreds of miles. Accompanying the northwest direction of the horizontal (strike-slip) movement of the plates have been episodes of compressive stress, reflected by repeated episodes of uplift, deformation, erosion and subsequent redeposition of sedimentary rocks. Ongoing tectonic activity is most evident in the formation of a series of uplifted marine and fluvial terraces in this region. The Loma Prieta earthquake of 1989 is the most recent reminder of the geologic unrest in the region.

The Quaternary history of the lower Salinas Valley has been dominated by fluvial, marine and eolian deposition because the central Monterey Bay region has been relatively stable, while the northern Monterey Bay region has been tectonically uplifted. The earth materials in the vicinity of the study area are mostly fluvial and alluvial fan sediments shed off of the Sierra De Salinas to the east and graded to one or more Sangamon high stands of sea level (see **Appendix E**).

Regional Seismic Setting

California's broad system of strike-slip faulting has had a long and complex history. Some of these faults present a seismic hazard to the proposed development. The most important of these are the Rinconada, San Andreas, Monterey Bay-Tularcitos, and San Gregorio faults (**Appendix E,** Figures 2, 3 and Plate 2). Descriptions of these faults are provided in **Appendix E**. These faults are either active or considered potentially active. Locations of epicenters associated with the faults are shown in **Appendix E**, Figure 3.

Site Geologic Setting

The Geologic Site Map And Cross Section (Plate 1) graphically depict relevant geologic information for the subject property. See also the Local Geologic Index Map (Plate 2) for information of a more general nature (see **Appendix E**).

Topography

The site occupies a very gently sloping lot on the school grounds that descends to the east (see **Appendix E**, Figure 1 and Plate 1). From a regional perspective, the property is located atop an old abandoned alluvial fan (**Appendix E,** Plate 2).

Earth Materials

Rosenberg (see **Appendix E,** Plate 2) has mapped the site as lying upon an undifferentiated Holocene alluvial fan, up against an older alluvial fan labeled as “alluvial fan deposits of Chualar”. Based upon the data procured from the small diameter borings advanced by Pacific Crest in April 2023, the site is underlain by more than 50 feet of interbedded and interfingering, flat-lying sand, silt and gravel, all belonging to the Holocene alluvial fan formation.

Pacific Crest determined that Site Class D was the appropriate site classification to use in developing the seismic shaking site coefficients and seismic ground motion values, based on the procedures outlined in publication AWWA D100-21 in conjunction with the applicable sections of publication ASCE 7-16. See the Geotechnical Investigation report included in **Appendix E** for more details.

Drainage and Groundwater

The site lies on a relatively flat area. There are existing storm drainage cleanouts to handle on-site stormwater runoff. No groundwater was encountered up to 51 ½ feet below the ground surface for this project during test borings.

The deep groundwater conditions encountered reflect a brief snapshot in time. It must be anticipated that perched and regional groundwater conditions may vary in the future from those encountered in April 2023 and could fluctuate with variations in rainfall, runoff, irrigation and other conditional changes. However, it is considered unlikely for the water table to rise to the extent that it would completely saturate the upper 50 feet of sediments and contribute to an elevated liquefaction hazard.

Geologic Hazards

The following discussion describes the likelihood of recognized seismic hazards to impact the project site.

Surface Fault Ground Rupture Hazard

Pacific Crest considered the possibility of surface fault ground rupture related to active faulting (**Appendix E**). The nearest mapped active or potentially active fault trace (of the Reliz Fault) is located 1.25 miles to the west of the site (see Plate 2). No geomorphic evidence of active faulting, such as tonal lineaments, vegetative lineaments, linear swales, etc., was observed. Pacific Crest concluded that the potential surface fault ground rupture hazard to occur within the design life of the water tanks is low.

Seismic Shaking Hazard

Seismic shaking at the site will be intense during the next major earthquake along local fault systems, particularly the Reliz fault southwest of the site, in the Salinas Valley at the base of the Santa Lucia Range front. It is important that recommendations regarding seismic shaking be used in the design for the proposed development. Pacific Crest developed seismic site coefficients and seismic ground motion parameters for the project using the procedures outlined in publication AWWA D100-21 in conjunction with applicable sections of ASCE 7-16 (see **Appendix E**).

Liquefaction and Lateral Spreading

The site is depicted as being within a low liquefaction hazard zone on the Monterey County GIS Hazard Maps and Map Showing Liquefaction Susceptibility of Monterey County (County, 2021). The density of the soils encountered in the small-diameter borings and the lack of any groundwater within the upper 50 feet of soil appears to corroborate this designation. Pacific Crest determined that the potential for liquefaction to occur during the design life of the water tanks is low.

Liquefaction induced lateral spreading occurs when a liquefied soil mass fails toward an open slope face or fails on an inclined topographic slope. Since the site has a low potential for liquefaction, the potential for lateral spreading is also considered low.

Seismically Induced Settlement

Seismically induced settlement occurs when intergranular void spaces compress during a loading event. Pacific Crest evaluated the impacts of this for the upper 50 feet of soil column under seismic “dynamic” loading to assess this hazard.

Landsliding

The site is located on a gently inclined fan surface and there is no evidence of landslides cutting the Holocene age fan surface anywhere near the site. The inclination of the fan surface is too low to accommodate any form of landsliding. Pacific Crest concluded that the potential for landsliding to occur within the future design life of the proposed project is low.

IMPACT DISCUSSION:

a.i. Although the project site is in a region with several active faults, it is not mapped within an Alquist-Priolo Earthquake Fault Zone. The nearest fault is the Reliz Fault, located 1.25 miles to the west of the site. There is no evidence of faulting on or near the site (**Appendix E**). In addition, the proposed project would be subject to standard construction standards and seismic requirements, as well as the recommendations summarized in **Appendix E**. This is considered a ***less than significant impact***.

a.ii. Seismic ground shaking is influenced by the proximity of the site to an earthquake fault, the intensity of the seismic event, and the underlying soil composition. As described above, the project site is located within 1.25 miles of the Reliz Fault. Seismic ground shaking is the primary geologic hazard with the potential to impact the proposed project. **Appendix E** identifies seismic design parameters for construction of the proposed project based on site-specific data. The effect of seismic ground shaking would be minimized through the implementation of the seismic requirements and applicable standards for earthquake-resistant construction as described in **Appendix E**; therefore, potential impacts would be ***less than significant***.

a.iii. Liquefaction tends to occur in loose, saturated and fine-grained cohesionless sands, coarse silts or clays with a low plasticity. In order for liquefaction to occur there must be the proper soil type, soil saturation, and cyclic accelerations of sufficient magnitude to progressively increase the water pressures within the soil mass. Non-cohesive soil shear strength is developed by the point-to-point contact of the soil grains. As the water pressures increase in the void spaces surrounding the soil grains the soil particles become supported more by the water than the point-to-point contact. When the water pressures increase sufficiently, the soil grains begin to lose contact with each other resulting in the loss of shear strength and continuous deformation of the soil where the soil appears to liquefy.

As described in **Appendix E**, the project site is considered to have a low potential for liquefaction. Liquefaction induced lateral spreading occurs when a liquefied soil mass fails toward an open slope face or fails on an inclined topographic slope. Due to the relatively flat project site and low liquefaction potential, the risk of lateral spreading is also considered to be low. The proposed project would result in a ***less than significant impact*** resulting from its potential to cause substantial adverse effects involving seismic-related ground failure, including liquefaction.

a.iv. The project site and immediate vicinity are relatively flat to gently sloping. The potential for landsliding to occur and adversely affect the proposed development is considered negligible. This is considered a ***less than significant impact***.

b. According to the United States Department of Agriculture's Soil Survey, the soils at the project site are described as Arroyo Seco gravelly sandy loam, 2 to 5 percent slopes (USDA, 2023). Arroyo Seco gravelly sandy loam soils occur at elevations ranging from 100 to 3,000-ft msl on alluvial fan landforms and are comprised of sandy and gravelly alluvium derived from igneous rock. Based

upon the data procured from the small diameter borings advanced by Pacific Crest in April 2023, the site is underlain by more than 50 feet of interbedded and interfingering, flat-lying sand, silt and gravel, all belonging to the Holocene alluvial fan formation. The proposed project would require minimal grading and earthwork. However, construction activities may result in wind driven and, to a lesser degree, water driven soil erosion. Best management practices ("BMPs") would be implemented by the construction contractor during construction to reduce soil erosion. Applicable measures may include the following:

- Stockpiling and disposing of demolition debris, concrete, and soil.
- Protecting existing storm drain inlets and stabilizing disturbed areas.
- Hydroseeding/re-vegetating disturbed areas.
- Minimizing areas of impervious surfaces.
- Implementing runoff controls (e.g., percolation basins and drainage facilities).
- Properly managing construction materials.
- Managing waste, aggressively controlling litter, and implementing sediment controls.
- Limiting grading to the minimum area necessary for construction and operation of the proposed project.

For these reasons, this constitutes a ***less than significant impact***.

c. See impact discussions for a.i-a.iv above. Any impact resulting from unstable soil would be temporary, as construction is anticipated to last two (2) months. Risks to life and property would not occur during operation of the project, because the project would not create habitable structure that would be affected by ground shaking, liquefaction, lateral spreading, or other geologic hazards. The project contractor would fully comply with all state, federal, and other laws, rules, regulations to ensure worker safety during construction. This represents a ***less than significant impact***.

d. The soils at the project site are coarsely grained and have a low plasticity. These soils are considered to have a low potential for expansion (**Appendix E**). Additionally, construction of the project would be required to comply with the most recent regulatory requirements, which would ensure the protection of structures and occupants from geo-seismic hazards, such as expansive soils; therefore, impacts would be ***less than significant***.

e. The project is a water system improvements project and does not propose any septic tanks or alternative wastewater disposal systems. ***No impact*** would occur.

f. **Appendix E** identifies the project site as being underlain by an undifferentiated Holocene alluvial fan, up against an older alluvial fan labeled as "alluvial fan deposits of Chualar." The Holocene alluvial fan is considered a modern substrate generally considered to have a very low potential to contain unique geologic or paleontological resources. As such, the proposed project would not result in the risk of encountering underlying formations that have a potential for paleontological resources. Therefore, potential impacts to a unique paleontological resource or site, or unique geologic feature would be ***less than significant***.

8. GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

SETTING:

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

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills.

The proposed project is located in the NCCAB, where air quality is regulated by MBARD. Neither the state, MBARD, nor Monterey County have adopted GHG emissions thresholds or a GHG emissions reduction plan that would apply to the proposed project. However, it is important to note that other air districts within the State of California have adopted recommended CEQA significance thresholds for GHG emissions. For instance, on March 28, 2012, the San Luis Obispo Air Pollution Control District (SLOAPCD, 2012) approved thresholds of significance for the evaluation of project-related increases of GHG emissions. The SLOAPCD's significance thresholds include both qualitative and quantitative threshold options, which include a qualitative threshold that is consistent with the AB 32 scoping plan measures and goals and a quantitative bright-line threshold of 1,150 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year. The GHG significance thresholds are based on AB 32 GHG emission reduction goals, which take into consideration the emission reduction strategies outlined in the California Air Resources Board's Scoping Plan. Development projects located within these jurisdictions that would exceed these thresholds would be considered to have a potentially significant impact on the environment which could conflict with applicable GHG-reduction plans, policies, and regulations. Projects with GHG emissions that do not exceed the applicable threshold would be considered to have a less-than-significant impact on the environment and would not be anticipated to conflict with AB 32 GHG emission reduction goals. Given that the MBARD has not yet adopted recommended GHG significance thresholds, the above thresholds are relied upon for evaluation of projects.

State Requirements

Assembly Bill 32

In response to an increase in man-made GHG concentrations over the past 150 years, California has implemented AB 32, the "California Global Warming Solutions Act of 2006." AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels) and the adoption of regulations to require reporting and verification of statewide GHG emissions.

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill ("SB") 32 into law. SB 32 extends GHG reduction goals beyond the initial target year of 2020 in AB 32, directing the CARB to ensure that GHGs are reduced to 40% below the 1990 level by 2030.

Assembly Bill 1279

AB 1279 was signed by the governor on September 16, 2022. In order to further reduce GHG concentrations, AB 1279 requires the state to achieve net zero greenhouse gas emissions (GHG) as soon as possible, but no later than 2045, as well as reduce statewide GHG emissions by 85% below the 1990 levels. AB 1279 directs the CARB to work with relevant state agencies to achieve these goals.

Climate Change Scoping Plan

CARB's 2022 Climate Change Scoping Plan reflects the statewide GHG emissions reductions of 85 percent below 1990 emissions levels by 2045, as directed by AB 1279. A significant part of achieving the AB 1279 goals include strategies to reduce fossil fuel combustion by using clean technologies and fuels, further reduce short-lived climate pollutants, support sustainable development, increase actions on natural and working lands to reduce emissions and sequester carbon, and capture and store carbon.

Executive Order B-55-18

Executive Order ("EO") B-55-18 was issued in September 2018, establishing a new statewide goal to achieve "carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter."

Local Requirements

The 2045 Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS) prepared by AMBAG is a local plan that includes goals and policies related to the reduction of GHG emissions (AMBAG, 2022). The MTP is a long-range planning document that defines how the region plans to invest in the transportation system over the next 25 years based on regional goals, multi-modal transportation needs for people and goods, and estimates of available funding. The MTP includes the SCS as required by SB 375[6]. The SCS sets forth a forecasted development pattern for the region, which, when integrated

[6] SB 375 directs CARB to set regional targets for reducing greenhouse gas emissions. The law establishes a "bottom up" approach to ensure that cities and counties are involved in the development of regional plans to achieve those targets. SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce GHG emissions from motor vehicle trips.

with the transportation network and other transportation measures and policies, will reduce GHG emissions from passenger vehicles and light trucks to achieve the GHG reduction targets set by the California Air Resources Board. The future land use and transportation scenario presented in the SCS must accommodate forecast population, employment, and housing sufficient to meet the needs of all economic segment of population, including the State-mandated Regional Housing Needs Assessment (RHNA), while considering State housing goals.

IMPACT DISCUSSION:

a. Implementation, construction, and operation of the project will not exceed established thresholds for air quality emissions, as discussed above. Limited vehicular trips to the site will be required intermittently for maintenance. Project construction would generate an estimated one-time emission of 15.7 MT of CO_2e. Operation of the project would generate approximately 2.96 MT of CO_2e emissions annually. The annual construction and operational emissions would both be below the threshold of 1,150 MT of CO_2e per year. For this reason, this is considered a ***less than significant impact***.

b. As stated above, the proposed project is located in the NCCAB, where air quality is regulated by MBARD. Neither the State nor MBARD have adopted a GHG emissions reduction plan that would apply to the proposed project. The County of Monterey has not adopted a Climate Action Plan or equivalent document to regulate GHG emissions. The proposed project would therefore not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, as no such plans would apply to the proposed project. This represents a ***less than significant impact.***

9. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	■

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

SETTING:

The Hazardous Waste and Substances Site (Cortese) List is a planning tool used by the state, local agencies, and developers to comply with CEQA requirements related to the disclosure of information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires the California EPA (CalEPA) to develop at least annually an updated Cortese List. Various state and local government agencies are required to track and document hazardous material release information for the Cortese List. The proposed project area is not within 0.25 miles of a hazardous materials site on the Cortese Site.

The California Department of Toxic Substance Control (DTSC) EnviroStor database tracks DTSC cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known contamination, such as federal superfund sites, state response sites, voluntary cleanup sites, school cleanup sites, school investigation sites, and military evaluation sites.

The SWRCB GeoTracker database contains records for sites that impact, or have the potential to impact, water in California, such as Leaking Underground Storage Tank (LUST) sites, Department of Defense sites, and Cleanup Program Sites (SWRCB. 2023). There are no LUST sites within 0.25 miles of the project site.

The project site is located primarily within the existing Mission School campus and is not within the vicinity of hazardous waste facilities. No hazardous materials are anticipated to be stored on-site during construction other than typical construction equipment fluids, including gasoline, diesel, and lubricants for maintaining equipment.

There are no airports or private airstrips within two miles of the project site.

IMPACT DISCUSSION:

a. No hazardous materials are anticipated to be stored on-site during construction other than typical construction equipment fluids, including gasoline, diesel, and lubricants for maintaining equipment. These materials would be handled and stored in compliance with all local, State, and Federal regulations pertaining to hazardous materials. Operation of the proposed project would not utilize or require the transport of hazardous materials. This is considered a ***less than significant impact***.

b. There are typically two types of hazardous materials releases that could occur during construction: (1) the accidental release of hazardous materials that are routinely used during construction activities; and (2) the potential for construction activities to encounter and excavate contaminated soil or groundwater that are already present at the construction site and thus release it to expose new receptors to the hazard.

   Hazardous materials that could be used during construction activities include typical construction equipment fluids. Storage and use of hazardous materials at the construction site could potentially result in the accidental release of small quantities of hazardous materials, which could pose a risk to construction workers and the environment, such as degradation of soil and/or surface water quality. However, as discussed in **Section 10. Hydrology and Water Quality**, the construction contractor would be required to comply with BMPs and County Municipal Code requirements to reduce impacts related to erosion and surface runoff. Through compliance with applicable BMPs and County Municipal Code requirements related to hazardous materials storage and storm water permitting regulations, the impacts from potential releases of hazardous materials or petroleum products during construction would be less than significant.

   The greatest potential for encountering contaminated soil and groundwater during construction would be in areas where past or current land uses have resulted in soil contamination. However, the project site is not located within 0.25 miles of any LUST sites or properties listed on the Cortese list. As a result, the probability of encountering contaminated soil is considered low.

   Hazardous materials use is not anticipated during operation of the proposed project. Any chemicals, solvents, or cleaners associated with project operation would be stored in accordance with all manufacturer specifications and guidelines and would not be accessible to the public. This represents a ***less than significant impact*.**

c. The proposed project is located entirely on the existing Mission Elementary School campus and is therefore located within a quarter mile of an existing school. Operation of the proposed project would not require the handling or emissions of hazardous materials. However, construction activities would require temporary handling of potentially hazardous materials. However, as described under impact a), all hazardous materials would be transported, used, and disposed of in accordance with all manufacturers' recommendations. In addition, areas under construction would be off limits to students and faculty throughout construction. This represents a ***less than significant impact***.

d. The project site is not on or within the vicinity of a hazardous site as designated by Government Code Section 65962.5 (i.e., Cortese List). Therefore, ***no impact*** would result.

e. There are no private airstrips or public airports within two miles of the project area. The closest airport is Mesa Del Rey Airport, located approximately 17 miles east of the site. The proposed project would not affect operations of this or any other public airports. ***No impact*** would occur.

f. The proposed project consists of a new well, pump station, and water storage tank, and does not include any characteristics or features that would interfere with an adopted emergency response plan or emergency evacuation plan. All components of the proposed project would be located on the existing Mission School campus. For these reasons, this is considered a ***less than significant impact***.

g. The project site is located within an area that is primarily used for agriculture and low-density residential uses. While there is potential for wildland fires in such a land use type, the project would not increase the risk of wildfires to residents because construction of the project would not involve any equipment or activities that present a severe fire risk. The pump station and well would be housed in a secure structure and would not increase wildfire risk. The water storage tank would not include any mechanical or electronic equipment that could increase wildfire risk. In addition, Mission School has an existing fire suppression tank on site to respond to any fires that occur on the site. Implementation of the proposed project would not further expose people or structures to wildland fires, this is considered a ***less than significant impact***. See also **Section 20. Wildfire**.

10. HYDROLOGY AND WATER QUALITY

Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	■	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in 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;	☐	☐	■	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

SETTING:

The project is located within the Salinas Valley Groundwater Basin (3-004.04), which is designated as a medium priority basin and is not designated as being critically overdrafted. Subbasin extents are defined by the California Department of Water Resources (DWR) and are documented in Bulletin 118. Groundwater accounts for approximately 100 percent of the basin's water supply. The project site is located within the Forebay Aquifer of the Salinas Valley Groundwater Basin, which is managed jointly by the Salinas Valley Groundwater Sustainability Agency (SVGSA) and the Arroyo Seco Groundwater Sustainability Agency (ASGSA). ASGSA manages the Arroyo Seco Cone Management Area (ASCMA) of the Forebay Aquifer and the SVGSA manages the remainder. The proposed project is within the portion of the Forebay Aquifer managed by SVGSA.

SVGSA is a Joint Powers Authority (JPA) with membership comprising the County of Monterey, Monterey County Water Resources Agency (MCWRA), City of Salinas, City of Soledad, City of Gonzales, City of King, Castroville Community Services District, and Monterey One Water (M1W). SVGSA manages existing and supplemental water supplies in order to prevent further increase in, and to accomplish continuing reduction of, long-term overdraft and to provide and ensure sufficient water supplies for present and anticipated needs within its boundaries. The SVGSA exercises full or partial management control of six of the nine subbasins that make up the Salinas Valley Groundwater Basin. This section relies on information from the SVGSA Forebay Aquifer Subbasin Groundwater Sustainability Plan (GSP) (SVGSA, 2022).

In 2015, the State legislature approved the groundwater management law known as the Sustainable Groundwater Management Act ("SGMA"). The purpose of SGMA is to protect groundwater resources over the long-term. SGMA requires local agencies to form groundwater sustainability agencies ("GSAs") for the high and medium priority basins. GSAs develop and implement groundwater sustainability plans ("GSPs") to avoid undesirable results and mitigate overdraft within 20 years (California Department of Water Resources. 2021). The Department of Water Resources ("DWR") implements regulatory oversight of the GSAs.

The proposed project would require excavation, which could result in erosion of onsite soils and potential sedimentation during heavy wind or rain events. The project would be required to comply with all local, state, and federal requirements. In addition, the BMPs included in **Section 7. Geology and Soils**, would be implemented by the construction contractor to control the discharge of pollutants, including sediment from erosion into local surface water drainages.

According to the Federal Emergency Management Agency ("FEMA"), the proposed project site is located within Zone X (unshaded), which is considered to be outside the 500-year flood zone and protected by levee from the 100-year flood zone (FEMA, 2009). In addition, the project area is not within a tsunami inundation area (California Department of Conservation, 2023).

IMPACT DISCUSSION:

a. The proposed project would require on-site excavation, which could result in the erosion of onsite soils and sedimentation during heavy wind or rain events. However, as discussed in **Section 7. Geology and Soils** above, the contractor would implement BMPs to reduce erosion. Additionally, the project would comply with the adopted standards contained within the County's Municipal Code, Chapter 16.12 (Erosion Control),[7] including but not limited to vegetation restoration, preparation of an erosion control plan, and runoff control. With implementation of BMPs and incorporation of the design provisions and permit review and approval procedures identified in the County's Municipal Code, the project would not violate water quality standards and waste discharge requirements; therefore, impacts would be ***less than significant*.**

b. The proposed project involves demolition and removal of an existing well and construction of a new well to provide potable water to the Mission Union School and would not impede sustainable groundwater management in the basin. While the proposed project would draw on groundwater to serve Mission Union School, this would be offset by the removal of the existing well. The proposed project has been sized appropriately so that it would provide enough water to serve existing connections at the Mission Union School. The well would be a replacement to existing supply well with provision of adequate storage to address existing Mission School population needs. The proposed project would not add new water connections at adjacent offsite locations that could deplete groundwater from the Salinas Valley Groundwater Basin or substantially decrease groundwater supplies.

   The project site is located within the Forebay Aquifer of the Salinas Valley Groundwater Basin as noted above. The SVBGSA adopted the Groundwater Sustainability Plan (GSP) for the Forebay Aquifer in January 2022. According to the GSP, the groundwater levels in the Forebay Aquifer remain relatively stable. The proposed project would replace an existing well and would not represent an increase in use compared to existing and historical conditions. Therefore, the proposed project would not substantially decrease water supplies.

   The proposed project would occupy an area approximately 1,000 sf in size. The proposed project does not include concrete paving that would interfere with groundwater recharge. The proposed project would be installed in roughly the same location as the existing well. As a result, the proposed project would not substantially interfere with groundwater recharge.

[7] https://library.municode.com/ca/monterey_county/codes/code_of_ordinances?nodeId=TIT16EN_CH16.12ERCO

For these reasons, the project would not lead to a substantial depletion of groundwater supplies, and impacts would be ***less than significant***.

c.i-iv. The project includes the removal of an existing well and the construction of a new water supply well, a new potable water storage tank, and water pump in order to serve the existing Mission Union School. Construction activities for well removal and installation of the project components would include 781 sf of impervious surfaces; however, the proposed project would be located in the same location as the existing well. Construction would be required to comply with BMPs and County Municipal Code requirements which would reduce impacts related to erosion and surface runoff. After construction, the remainder of the project area would be restored to its original condition. In addition, the proposed project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. BMPs would be implemented during construction activities to minimize runoff and erosion. Finally, the project would not impede or redirect flood flows, since the project consists of the replacement of an existing well in a flat area. For these reasons***, less than significant impacts*** would result from construction and operation of the project.

d. Tsunamis or "tidal waves" are seismic waves created when displacement of a large volume of seawater occurs as a result of movement on seafloor faults. The project site is located outside a tsunami hazard zone. The project site is not located within any flood zones. Therefore, the project would have ***no impact*** related to the risk release of pollutants due to project inundation due to these areas.

e. The proposed project is located in the Forebay Aquifer of the Salinas Valley Groundwater Basin; the Forebay Aquifer is not an adjudicated sub-basin and the portion of the Forebay Aquifer underlying the proposed project site is under the jurisdiction of the SVBGSA. The proposed project involves replacement of an existing well and does not represent an intensification of existing water use that would be incompatible with the Groundwater Sustainability Plan for the Forebay Aquifer. Therefore, the project would have ***less than significant impacts*** regarding conflicting with or obstructing applicable water quality control plans or sustainable groundwater management plans.

11. LAND USE AND PLANNING

Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?	☐	☐	■	☐

SETTING:

The proposed project is located within unincorporated Monterey County, southwest of the City of Soledad, as depicted on **Figures 1-3.** The proposed project is located entirely within the Mission Union Elementary School campus (APN 165-031-008-000). The project area is governed by the Salinas Valley Area Plan component of the 2010 Monterey County General Plan. The Plan Designation of the site is Public/Quasi-Public and the zoning designation is low-density residential (LDR/2.5). See **Figure 5. Land Use Map**.

IMPACT DISCUSSION:

a. The project consists of a new well, pump station, storage tanks, and water distribution pipelines to serve Mission Union Elementary School. The entirety of the proposed project would occur within the existing school campus and the proposed project will not physically divide the community in any way. No changes in land use are planned and the community would not be divided by the actions of the proposed project. Therefore, the proposed project would not physically divide an established community and ***no impact*** would result.

b. The project would not conflict with any policy adopted for the purposes of avoiding and/or mitigating an adverse environmental effect. The proposed project would remove the existing well and replace with a new well, pump station, and water storage tank in the same location. This replacement of an existing well would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. As a result, potential impacts would be minimized. Where appropriate, this IS/MND has identified mitigation measures to further ensure that impacts would be less than significant. The replacement of the existing well is consistent with the land use designations on the site and within the project area. This is considered a ***less than significant impact***.

12. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	■

SETTING:

Historic mineral production in Monterey County included sand and gravel mining for construction materials, mining for industrial materials (diatomite, clay, quartz, and dimension stone) and metallic minerals (chromite, placer gold, manganese, mercury, platinum, and silver). The Monterey County 2010 General

Plan identifies areas of mineral resource significance in the vicinity of the Cities of Marina, Sand City and Seaside. All other areas of the County, including the project site, either do not contain aggregate resources or have not been classified.

IMPACT DISCUSSION:

a-b. No known mineral resources in Monterey County are located within the proposed project area. The proposed project would have ***no impact*** on mineral resources.

13. NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels 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?	☐	☐	■	☐

SETTING:

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is defined as unwanted sound. Environmental noise is frequently measured in decibels (dB). The A-weighted decibel (dBA) is used to reflect the human ear's sensitivity to sounds of different frequencies. On this scale, the sound level of normal talking is about 60 to 65 dBA. Because people are more sensitive to nighttime noise, sleep disturbance usually occurs at 40 to 45 dBA.

The most commonly used measurement scale used to account for a person's increased sensitivity to nighttime noise is the Community Noise Equivalent Level (CNEL). The CNEL is a noise scale used to describe the overall noise environment of a given area from a variety of sources. The CNEL applies a weighting factor to evening and nighttime values.

Generally, noise levels diminish as distance from the noise source increases. Some land uses are more sensitive to noise than others. Noise sensitive land uses are generally defined as residences, transient lodging, schools, hospitals, nursing homes, churches, meeting halls, and office buildings. Noise sensitive

receptors in the vicinity of the project site consist of existing residences to the north and northwest, as close as 250 feet from the project site.

In the context of this document, “noise” is defined as unwanted sound. The primary source of existing noise in the proposed project area is traffic on adjacent roadways, primarily Foothill Road, as well as noise from students at Mission School and nearby agricultural operations.

The Safety Element of the Monterey County 2010 General Plan includes policies related to noise hazards. These include *Policy S-7.2*, which states that new development “shall incorporate design elements necessary to minimize noise impacts on surrounding land uses and to reduce noise in indoor spaces to an acceptable level.” The Monterey County 2010 General Plan also includes noise thresholds for low-density residential land uses, agricultural land uses, and educational land uses, as presented below:

- Under 70 dB CNEL is considered normally acceptable for educational uses, under 75 dB CNEL is considered normally acceptable for agricultural uses, and under 60 dB CNEL is considered normally acceptable for low density residential uses.
- Between 60 and 70 dB CNEL is considered conditionally acceptable for educational uses, between 70 and 80 dB CNEL is considered conditionally acceptable for agricultural uses, and between 55 and 70 dB CNEL is considered conditionally acceptable for low density residential uses.
- Between 70 and 80 dB CNEL is considered normally unacceptable for educational uses between over 80 dB CNEL is considered normally unacceptable for agricultural uses, and between 70 and 75 dB CNEL is considered normally unacceptable for low density residential uses.
- Over 80 db CNEL is considered clearly unacceptable for educational uses and over 75 db CNEL is considered clearly unacceptable for low density residential uses.

IMPACT DISCUSSION:

a. Sensitive receptors in the area include nearby residences as well as students at the Mission School. Project construction would generate a temporary increase in noise associated with the use of construction equipment. Noise generated by construction can vary greatly depending on the specific equipment selected by the construction contractor. The contractor will be using standard equipment associated with well demolition and construction including excavators, loaders, dump trucks, hauling vehicles, truck mounted drill rig, forklift, and graders. Using guidance provided by the Federal Highway Administration, it is estimated that noise will reach a maximum of 85 decibels at a distance of 50 feet from construction.

Noise impacts to nearby sensitive receptors during construction would be temporary. Construction is anticipated to last two (2) months. Construction would occur during daytime hours and no nighttime construction is proposed. Construction would occur within 20 feet of existing educational land uses at the Mission School. Construction is anticipated to be scheduled during the summer months to avoid impacts to educational land uses, as classes at the Mission School would not be in session. The nearest residential receptors are located approximately 500 feet to the east and would not be subject to excessive construction noise. In addition, all construction noise would be temporary, lasting two months, and would not result in a permanent noise increase at the site. Therefore, temporary noise increases due to construction would not be substantial, and noise impacts at this for the project would be ***less than significant***.

The proposed project would generate noise during project operation, mostly associated with the pump station and well. However, these project components are proposed to be housed in a new

structure that would minimize noise at nearby sensitive receptors. The storage tank would not include mechanical equipment that would generate substantial noise. The project would result in a ***less than significant impact*** because it will not create a permanent increase in ambient noise levels.

b. The project is not subject to substantial groundborne vibration, nor would it generate any permanent source of groundborne vibration at nearby sensitive receptors. Construction activities may generate groundborne vibration, however, these activities would be temporary, and the vibration effects of typical construction equipment is not expected to affect nearby sensitive residential receptors. This constitutes a ***less than significant impact***.

c. There are no private airstrips or public airports within two miles of the project area. The closest airport is Mesa Del Rey Airport, located approximately 17 miles east of the site. The proposed project would not be subject to excessive noise from airport operation. Therefore, ***no impact*** would occur.

14. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	■

SETTING:

The current population of the County is estimated at 434,061 persons. In 2020, AMBAG published a new regional growth forecast that projects a 2025 population of 452,761 residents and a 2035 population of 476,028 residents for Monterey County. Mission School is located in unincorporated Monterey County and mainly serves the rural population located southwest of the City of Soledad.

The proposed project is comprised of a new well, pump station, storage tank, and pipeline. The proposed project is intended to be a long-term solution to elevated nitrate concentrations and would not include any new water system connections. The proposed project would occur entirely within the boundaries of the Mission School campus. The project would not displace any existing housing.

IMPACT DISCUSSION:

a. The proposed project consists of the replacement of an existing water supply well and does not include new water connections that would induce population growth. The proposed project would be utilized solely for the existing Mission School. Therefore, the project would serve an existing community and would not induce substantial population growth in the area. This is a ***less than significant impact***.

b. The proposed project consists of the replacement of an existing water supply well that solely serves the Mission School. The proposed project would be located entirely within the existing Mission School campus. The project would not displace substantial numbers of existing people, housing, or necessitate the construction of replacement housing elsewhere. Therefore, ***no impact*** would result**.**

15. PUBLIC SERVICES

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

SETTING:

Fire protection services for the project area are provided by the City of Soledad in association with CAL FIRE. The City of Soledad Fire Department is responsible for fire response in an approximately 97-square mile area consisting of the City of Soledad and the Mission-Soledad Fire Protection District (City of Soledad, 2023). The City of Soledad Fire Department operates out of Fire Station 37 located at 525 Monterey Street, Soledad, CA 93960.

Police protection services are provided by the Monterey County Sheriff's Department. Police response to the project site is provided out of the Monterey County Sheriff's Department's South County Station, located at 250 Franciscan Way, King City, CA 93930.

IMPACT DISCUSSION:

a.i, ii. Because the project is a water supply project, it will have no post-construction impact on the City of Soledad Fire Department or the Monterey County Sheriff's Department. These agencies already provide emergency response services to the project site and the proposed project would not result in increased demand on these response services once operational. Although unlikely, these departments could be required to respond to potential construction-related emergencies. Construction is expected to be completed within two (2) months and will not significantly impact fire protection or police protection services or require the construction of new or remodeled facilities. This represents a ***less than significant impact***.

a.iii, iv, v. The water supply project would have no physical impact on schools, parks, or other public facilities and would not require the construction of new or remodeled facilities. ***No impact*** would result from implementation of the proposed project.

16. RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	■

SETTING:

The proposed project is a water system project and does not include any new or altered recreational facilities. Recreational facilities are present on the project site associated with school use, consisting of paved basketball courts and a climbing structure. These facilities would not be affected by the proposed project.

IMPACT DISCUSSION:

a, b. The proposed project is a water system project and would not increase the use of surrounding recreational facilities. The proposed project would therefore not contribute to the physical deterioration of park facilities or necessitate the construction of new recreational facilities. ***No impact*** to recreational facilities would result from implementation of the project.

17. TRANSPORTATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	■

SETTING:

The proposed project is located southwest of the City of Soledad at 36825 Foothill Road. Regional access to the project site is provided from Foothill Road, Arroyo Seco Road, and U.S. Route 101.

The project is located entirely within the existing school site and would not require any road closures or traffic control measures.

The proposed project would generate minimal trips for maintenance after construction has been completed. The total vehicle trips per day during construction is not known at this time but is expected to be minimal given the short duration (two months) and small scale (removal of existing well head and construction of a 781 sf well enclosure, pump station and water storage tanks) of the proposed project.

IMPACT DISCUSSION:

a. The County of Monterey General Plan's Circulation Element contains goals and policies addressing the circulation system, including transit, bicycle, and pedestrian facilities. The proposed project would generate only minimal and infrequent vehicle trips once operational, associated with maintenance for the new well. The project would result in a temporary increase in traffic during construction. Construction-related vehicle trips would include workers traveling to and from the

project construction site and other trucks associated with equipment and material deliveries. The total vehicle trips per day during construction is not known at this time but is expected to be minimal. Construction of the proposed project would occur entirely within the existing Mission Union School campus and would not require any road closures or off-site traffic controls. Compared to the existing level of traffic traveling on Foothill Road, the temporary construction related traffic would be minimal. In addition, construction of the proposed project is anticipated to be scheduled when school is not in session, which would further limit the effect of construction related traffic. There are no dedicated bicycle or pedestrian facilities along Foothill Road in the vicinity of the proposed project; therefore, construction of the proposed project would not impact bicycle and pedestrian facilities. Construction is a short-term, temporary activity and construction trips would account for a relatively small portion of existing traffic on area roadways and would not conflict with the County of Monterey General Plan's Circulation Element or any other program, plan, ordinance or policy addressing the circulation system. Therefore, traffic flow impacts during construction would be ***less than significant***.

b. An assessment of VMT requires estimating or measuring the full length of trips people take by purpose as work trips, deliveries, shopping, etc. The Governor's Office of Planning and Researched prepared a Technical Advisory on Evaluating Transportation Impacts (OPR 2018) to provide guidance on conducting analyses consistent with SB 743 and the revised CEQA Guidelines. The County has not formally adopted VMT methodologies and procedures; therefore, the proposed project would use thresholds identified in OPR's VMT Technical Advisory. The VMT Technical Advisory contains a list of discretionary development project types that are not subject to VMT analysis. Specifically, OPR identified a screening threshold stating that small discretionary development projects that would generate fewer than 110 daily trips are not subject to VMT analysis. The proposed project falls within this category. The proposed project would not generate only minimal and infrequent trips once operational, associated with periodic maintenance of the project components. While the project would result in vehicle trips associated with construction, these trips would cease after the conclusion of the two-month construction period and do not represent a permanent increase in VMT or daily vehicle trips. The proposed project would generate fewer than 110 trips per day, therefore the project has a ***less than significant impact*** on the transportation system.

c. The project would not substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses. The proposed project would generate only infrequent minimal maintenance trips once operational. The proposed project would occur entirely within the Mission School's campus and would not impact travel on public roadways. The project does not include the construction of hazardous design features and would not result in incompatible uses with the surrounding developed area. This constitutes a ***less than significant impact***.

d. The proposed project would occur entirely within the existing Mission School campus and would not require roadway closures that would result in adequate emergency access. The proposed project consists of the replacement of an existing well and would not impact emergency access. Therefore, ***no impact*** would result.

18. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 or 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, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	■	☐	☐

SETTING:

To recognize California Native American tribal sovereignty and the unique relationship of California local governments and public agencies with California Native American tribal governments, and to respect the interests and roles of project proponents, the State Legislature enacted AB 52 (Gatto. 2014) Native Americans: California Environmental Quality Act. California AB 52, in effect since July 2015, provides CEQA protections for tribal cultural resources. All lead agencies approving projects under CEQA are required, if formally requested by a culturally affiliated California Native American Tribe, to consult with such tribe regarding the potential impact of a project on tribal cultural resources before releasing an environmental document. Prior to the enactment of AB 52, the State of California found that current laws provided limited protection for sites, features, places, objects, and landscapes with cultural value to California Native American Tribes. Under California Public Resources Code §21074, tribal cultural resources include site features, places, cultural landscapes, sacred places, or objects that are of cultural value to a tribe and that are eligible for or listed on the California Register of Historical Resources ("CRHR") or a local historic register, or that the lead agency has determined to be of significant tribal cultural value.

The NAHC maintains a list of tribes that are traditionally and culturally affiliated with the geographic area. The NAHC provided a list of Native American contacts for the proposed project. The Mission Union School District sent letters on August 31st, 2023 to the local Native American contacts identified by the NAHC. A sample letter is provided in **Appendix F**. Mission Union School District did not receive any responses to

the outreach letters within the 30-day consultation window. However, on October 23, 2023, Mission Union School District received a request from Patti Dunton of the Salinian Tribe, requesting a copy of the Phase I Archaeological Report prepared for the proposed project. The District provided the contact with a copy of the report per their request. As of the time of publication of this IS/MND, no further requests have been received from tribal groups.

IMPACT DISCUSSION:

a.i, ii There are no historical structures on the site. Records indicate that the project site, located entirely within the existing Mission School campus, is not listed on the California Register of Historic Places or on Monterey County's 2020 local register. Achasta performed an archival records search and a field survey of the project area. The studies indicate the area of proposed development is not within an archaeological site eligible to be designated as a historical resource applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. Should archaeological resources be unexpectedly discovered during construction, work shall be halted until it can be evaluated by a qualified professional archaeologist and determined to be significant, and appropriate mitigation measures formulated and implemented, as identified in Mitigation Measures CR-1 and CR-2**.** In the event that human remains are discovered, including those potentially belonging to Native Americans, work shall be halted within 150 feet of the find and the NAHC shall be notified. In this event, further recommendations would also be provided by the Most Likely Descendent identified by the NAHC. The project would have a less-than-significant impact on tribal cultural resources.

Please see **Section 5. Cultural Resources** of this IS/MND and **Appendix D** for additional discussion.

Mitigation Measure(s) incorporated into the project:

CR-1 The full text of this mitigation is included in **Section 5. Cultural Resources**.

CR-2 The full text of this mitigation is included in **Section 5. Cultural Resources**.

CR-3 The full text of this mitigation is included in **Section 5. Cultural Resources**.

19. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

SETTING:

Mission Union School is currently connected to an on-site well and is not connected to infrastructure operated and maintained by a larger water utility provider. The existing well serves only the existing school. Well permits in Monterey County are required from the Monterey County Health Department (MCHD) whenever a new well is proposed for construction or an existing well is proposed for demolition. The project will demolish and remove the existing on-site well and replace it with a new well, pump, and water storage tank. The proposed project would provide potable water to the Mission Union School; the proposed project does not include additional water connections.

Mission Union School is currently connected to an existing septic system and is not connected to infrastructure operated and maintained by a larger wastewater treatment provider.

3CE provides electric service to the proposed project site through electrical equipment operated and maintained by PG&E. The proposed well would require electricity to operate the well and pump.

Waste Management provides solid waste collection service to the Mission Union School. Construction of the proposed project would generate materials that would need to be disposed of at the Jolon Road Landfill located south of King City. Operation of the proposed project would not increase generation of solid waste compared to existing conditions.

IMPACT DISCUSSION:

a. The proposed project consists of the replacement of an existing well to provide a long-term reliable water supply for Mission Union School. The proposed project would not generate any additional wastewater or exceed or impact wastewater treatment requirements of the applicable Regional Water Quality Control Board. The proposed project would not require additional construction or relocation of storm water drainage, electric power, natural gas, or telecommunications facilities which would cause significant environmental effects. The potential adverse environmental effects associated with the replacement of the existing water infrastructure are fully evaluated throughout the topical sections of this IS/MND. With implementation of mitigation measures as identified in this IS/MND (Mitigation Measure BIO-1), construction of new water service facilities would result in a ***less than significant impact***.

b. The proposed project consists of the replacement of an existing well to provide for long-term reliable water supply for Mission Union School. The existing well accesses groundwater at a depth of approximately 219 to 229-feet; this water was tested and found to have elevated nitrate concentrations typically ranging from 4.7 to 6.4 mg/L, with measured exceedances of the nitrate MCL of 10 mg/l occurring during measurements taken on 10/6/2017 (14 mg/l), 10/11/2018 (13 mg/l), and 7/11/2019 (12.2 mg/l) (see **Appendix A**). The proposed well would draw from the same groundwater basin as the existing well but would be deeper to access groundwater at a depth of approximately 394 to 414-feet, where nitrate contamination levels are significantly lower than closer to the surface of the groundwater basin (ranging from 1.4 to 1.5 mg/L). This deeper groundwater is anticipated to be below the nitrate MCL of 10 mg/l based on these test results. The proposed project replaces an existing well and would not represent an increase in groundwater pumping compared to existing conditions. Groundwater accessed by the proposed project would be drawn from the Forebay Aquifer of the Salinas Valley Groundwater Basin, which is designated as a medium priority basin and is not designated as being critically overdrafted. Therefore, the proposed project would have a ***less than significant impact*** with respect to impacting available water supplies during normal, dry and multiple dry years.

c. Mission Union School is served by an existing septic system and is not connected to wastewater conveyance infrastructure owned and/or operated by a wastewater treatment provider. The proposed project consists of the replacement of an existing well to provide for long-term reliable water supply for Mission Union School. The proposed project would not impact operation of the existing septic system and would not require new wastewater service or expansion of existing wastewater service. There would be ***no impact*** in connection with the project.

d. The proposed project would generate solid waste during construction. Construction waste would be disposed of at the Jolon Road Landfill in King City. The proposed project would generate an estimated 250 cubic feet of soil cuttings and up to 750 cubic feet of soil from foundation excavation that would be stockpiled and hauled off site. The Jolon Road Landfill has a maximum permitted capacity of 10,000 cubic yards for mixed-municipal waste, including construction waste (CalRecycle, 2023). The proposed project would generate a maximum of 37 cubic yards (assuming the maximum 1,000 cubic feet of soil export) of construction waste. The Jolon Road Landfill would have adequate capacity to dispose of the proposed project's construction waste. The proposed project would not generate solid waste once operational. Therefore, the proposed project would have a ***less than significant impact*** related to generating solid waste in excess of state to local standards.

e. Waste disposal to landfills would be minimized, and all waste would be properly disposed of in a safe, appropriate, and lawful manner in compliance with all applicable regulations of local, state (California Integrated Waste Management Act of 1989 & California Green Building Standards), and federal regulations related to solid waste. Since the project will require compliance with all county, state, and federal regulations and conditions, there will be no violation of the regulations concerning solid waste disposal as conditions for approval. This constitutes a ***less than significant impact***.

20. WILDFIRE

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	■	☐

SETTING:

Fire Hazard Severity Zones ("FHSZ") are defined by the California Department of Forestry and Fire Protection ("CALFIRE") based on the presence of fire-prone vegetation, climate, topography, assets at risk (e.g., high population centers), and a fire protection agency's ability to provide service to the area (CALFIRE, 2023). FHSZs are designated as "Very High," "High," or "Moderate." The proposed project is located in a local fire responsibility area that is protected by the City of Soledad Fire Department. However, the land on the opposite side of Foothill Road near the project site is in a High FHSZ under the jurisdiction of CALFIRE. The proposed project would be located within the existing Mission Union School campus. Mission Union School maintains a 35,000-gallon water storage tank for fire suppression.

IMPACT DISCUSSION:

a. The proposed project would be located entirely within the Mission Union School campus and does not include any characteristics or features that would interfere with an adopted emergency

response plan or emergency evacuation plan. The proposed project would not result in the closure of any roads. This represents a ***less than significant impact***.

b. The proposed project would be located entirely within the Mission Union School campus and is currently used for educational activities. The site is relatively flat and Mission Union School maintains a water storage tank on site for fire suppression. The proposed project is located in an area with grasses and other sparse vegetation that could be susceptible to wildfire. However, the electrical components of the proposed project would be housed within a structure to prevent fire as a result of electrical malfunction. The project site is adjacent to designated moderate and high-severity FHSZ areas to the west of Foothill Road. However, the proposed project would not increase the risk of fire on the site due to slope, prevailing winds, or exacerbation of wildfire risks. This represents a ***less than significant impact***.

c. The proposed project would be located entirely within the Mission Union School campus and is currently used for educational activities. Surrounding uses consist of agricultural and low density residential land uses. Mission Union School maintains a water storage tank for fire suppression. Construction and operation of the proposed project would not interfere with use of the water tank for fire suppression, and no additional fire suppression would be required as a result of the proposed project. The project does not include infrastructure facilities that would exacerbate fire risk, therefore ***no impact*** would result.

d. As mentioned in the previous discussions above, the project is not located within State Responsibility Area ("SRA") Fire Hazard Zone. However, the land on the opposite side of Foothill Road near the project site is in a High FHSZ under the jurisdiction of CALFIRE. The topography of the proposed project site and surrounding area is flat; therefore, the risk of exposure of people to hazards from downstream flooding or landslides as a result of post-fire conditions is low. In addition, the proposed project does not include any habitable structures. This represents a ***less than significant impact***.

21. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. 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?	☐	■	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
2. 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.)	☐	☐	■	☐
3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	☐

IMPACT DISCUSSION:

1. The proposed project would occur entirely on a portion of the Mission Union School campus that consists of ruderal/disturbed and developed habitat types and does not contain suitable habitat for fish and wildlife species. Mitigation measures are recommended to address potential direct and indirect impacts to nesting raptors that may be present on or adjacent to the project site. Based on this analysis, the project would not 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 or substantially reduce the number or restrict the range of a rare or endangered plant or animal. The proposed project would be constructed within the existing Mission Union School campus, which does not contain important examples of the major periods of California history or prehistory. Additionally, mitigation measures to protect cultural resources require work to stop and finds evaluated should unanticipated archaeological resources be discovered during construction. Therefore, the project would not eliminate important examples of the major periods of California history or prehistory with implementation of mitigation measures identified in this document. This is a ***less than significant impact with mitigation incorporated.***

2. Section 15355 of the CEQA Guidelines defines "cumulative impacts" as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental effects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. It is important to address whether the proposed project would result in an impact that would be found to be cumulatively considerable. Cumulative impacts could occur due to indirect growth-inducing impacts, which includes consideration of whether the project would remove an obstacle to additional growth and development. The proposed project consists of the replacement of an existing well that would serve only the existing Mission Union School; the proposed project would not add any additional service connections compared to existing conditions. The proposed project would not include housing or development in areas that could induce growth and would also not

remove any barriers that could result in population growth. As described throughout this document, the proposed project would result in less-than-significant impacts to aesthetics, agricultural resources, air quality, biological resources, cultural resources, energy, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology/water quality, land use and planning, noise, population and housing, public services, utilities/service systems, and wildfire. The majority of project impacts are temporary impacts associated with the construction period. The project would not have significant adverse environmental operational impacts or induce new development in the area that could combine with other projects' effects to create cumulatively significant impacts. Project operational activities would not significantly alter the existing environment, particularly as the new well and storage tank would be located in an already disturbed area. There are no known projects in the immediate project vicinity of a similar nature proposed or reasonably foreseeable for development. When considered cumulatively along with past, current, and probable future projects that may occur in the area, the project's contribution is considered negligible and would not be cumulatively considerable. This is a ***less than significant impact.***

3. The project would not result in environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly. The construction of the proposed project would occur within already developed areas within the existing Mission Union School campus. Project operational activities would not significantly alter the environmental baseline condition. Construction of the proposed project would result in temporary minor incremental increases in air quality emissions and vehicle trips in the project vicinity, however, these were found to be minor, temporary and localized. The project would result in less-than-significant impacts to air quality, greenhouse gas emissions, and hazards and hazardous materials. The primary source of criteria air pollutant and GHG emissions would stem from the use of equipment during construction activities. Additionally, the project would not create any significant air emissions or impacts from construction-related noise due to the short-term and localized nature of the project. This is a ***less than significant impact.***

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11. Summary of Potentially Significant Impacts

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

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12. Determination

On the basis of the Initial Study, the staff of the Mission Union School District:

_____ Finds that the proposed project is a Class ___ **CATEGORICAL EXEMPTION** and no further environmental review is required.

_____ Finds that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

X Finds that although the proposed 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.

_____ Finds that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

_____ Finds that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to acceptable standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on the attached sheets. An **ENVIRONMENTAL IMPACT REPORT (EIR)/SUBSEQUENT EIR/SUPPLEMENTAL EIR/ADDENDUM** is required, but it must analyze only the effects that remain to be addressed.

_____ Finds that although the proposed project could have a significant effect on the environment, because all significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to acceptable 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 proposed project, nothing further is required.

Sandra Shreve

Sandra Shreve

Superintendent

May 20, 2024

Date

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Appendix A

Engineering Report

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WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
(831) 722-3580 www.weber-hayes.com

Engineering Report

Mission Union School

Soledad, California

September 20, 2022

Prepared for:

Mission Union Elementary School District

via Technical Assistance from

California State Water Resources Control Board; administered by

Rural Community Assistance Corporation

WHA Project 2T151

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Appendices

Executive Summary

This is the *Engineering Report* (ER) for Potable Water System Improvements at the Mission Union Elementary School District (the School), located at 36825 Foothill Road, Soledad, California (Figure 1). The ER evaluates various alternatives to resolve the problem of elevated levels of nitrate (at concentrations exceeding the drinking water Maximum Contaminant Level) in the School's water supply well.

Weber, Hayes & Associates prepared the ER on behalf of the School under a Technical Assistance (TA) Grant from the California State Water Resources Control Board (State Water Board) assigned to and administered by the Rural Community Assistance Corporation (RCAC).

The intent of this *Engineering Report* (ER) is to:

- Describe the School's existing water system and the problems it is facing
- Identify and evaluate alternatives to provide the School's students and staff with safe and reliable drinking water (i.e., resolve the elevated nitrate concentration issue)
- Choose the best alternative to provide the School's students and staff with safe and reliable drinking water

The best alternative was chosen based on the following:

- Ability to supply safe and reliable drinking water and to comply with regulatory requirements
- Meet the water system's Operation and Maintenance (O&M) needs
- Be financially viable
- Satisfy public concerns
- Satisfy Regulatory concerns
- Meet environmental requirements

> The most cost-effective long-term solution is installing a new, deeper well that is anticipated not to contain elevated nitrate concentrations.

Background Project Information

The Mission Union School (the School) is in located at 36825 Foothill Road in Soledad, CA. Soledad is located in the Salinas Valley, a southeast-northwest trending valley in the Coast Ranges Geomorphic Province of California (see Figures 1 and 2).

The School has its own Water System (No. 2702317). The School's Water System has had an issue with elevated nitrate concentrations since October 2017. On November 16, 2018, Monterey County Health Department issued a regulatory Compliance Order (No. 18-003) to the School for a Nitrate Maximum Contaminant Level (MCL) Violation - which legally required that the nitrate issue be resolved (Appendix A). Since then, twelve point of use (POU) reverse osmosis (RO) nitrate filters were installed throughout the School. Post RO water samples are tested for nitrate each month. While the RO filters have effectively removed nitrates from the POU sampling locations, the State Water Board requires a more comprehensive and long-term solution. Such a solution could potentially include: (1) consolidation with a nearby public water system (see Figure 2 for nearby water systems); (2) a nitrate treatment system at the wellhead (i.e., treating all water coming from the well); or a (3) water source free of elevated nitrate concentrations (i.e., a new water supply well).

Based on financial challenges, the School received Technical Assistance grant funding to help evaluate the best alternatives to bring their water system into regulatory compliance.

The Local Primacy Agency with jurisdiction over the School is the Monterey County Health Department, Drinking Water Protection Services, Environmental Health Bureau (Monterey County).

This Engineering Report (ER) further identifies the School's water system problems, then evaluates various alternative solutions to bring the School into regulatory compliance.

1. Existing Facilities

a. Description of Water System

The School utilizes groundwater as its drinking water source. The capacity of this source is not fully known, because the School does not regularly monitor depth to groundwater and has only been monitoring water usage since July 27, 2022. However, the well is regularly pumped at approximately 225-gallons per minute (GPM), without dewatering the well casing (per the School's current water system operator, Dougherty Pump & Well).

Groundwater well specifications:

- Installed in 1976 with 8-inch diameter stainless steel screen and low carbon steel casing to a depth of 414-feet (per the BEEST Report)
- Screened (0.040-inch "40-slot" stainless steel; wire-wrapped construction): 219 to 229' (upper screen) & 394 to 414' (lower screen)
- The sanitary seal extends to 50-feet below ground surface (bgs). The filter pack is #8 Lapis Sand.
- 5 HP Electric Submersible Well Pump per the BEEST report (pump intake at 345-feet)

The groundwater is not treated.

The groundwater is pumped from the well via a submersible pump to a hydro-pneumatic tank. The hydro-pneumatic tank helps pressurize and stabilize the water flow to the School's water distribution system.

The School does not currently have a potable water storage tank or a backup power supply. This is not an ideal setup, because if the well's submersible pump ever loses power – then the School runs out of water. In the event of failure, submersible pumps can take a significant amount of time to procure and install, leaving the School with no water.

The School has a 35,000-gallon (35k) fire prevention water storage tank. While the water in this tank comes from the same well, it is not considered potable water - because the water sits in this tank stagnant for extended periods of time. This water is only used for fire prevention. Another engineering firm calculated fire flow capacity as part of the 35k fire prevention water storage tank design process. Fire flow capacity calculations are outside the scope of this project. We believe the 35k fire prevention water storage tank meets current requirements.

Water is distributed through underground piping to the two existing School building and within the buildings by internal plumbing. The School has twelve Point of Use (POU) Reverse Osmosis (RO) filters used to remove nitrate concentrations from drinking water dispenser points throughout the School.

b. Schematic and Map of the Water System

See Figure 3 (existing) and Figure 4 (proposed) for a Schematic and Map of the Water System

2. Analysis of Water System's Current Water Demand

The School did not have a water system flow meter installed, so their actual water demand has not been adequately quantified. We installed a water meter at the well head as part of this project on July 27, 2022. While we wait to accrue sufficient flow meter measurements to determine the School's water usage more accurately, we have approximated the School's water usage as shown below.

Based on three other elementary schools that we perform water system management for, the Average Daily Demand ranges from 5 to 14 gallons per day per person. To be conservative, we estimate that the Average Daily Demand (ADD) at the Mission Union

School is 20 gallons per day per person. The current population of students and faculty at the School is approximately 140.

20 gallons per day per person x 140 people = 2,800 gallons per day (ADD)

To determine Maximum Daily Demand (MDD), we multiply the Average Daily Demand by 1.66.

20 gallons per day per person x 1.66 = 33.2 gallons per day per person (MDD)The entire Mission Union water system MDD is:

33.2 gallons per day per person x 140 people = 4,648 gallons per day (MDD)

The new water flow meter and necessary appurtenances were installed on July 27, 2022 by Cypress Water Services (CWS). CWS properly sanitized the new water system components and the associated Schedule 80 PVC piping during the installation. Confirmation coliform and E. Coli bacteria samples were collected on August 1, 2022 to demonstrate that the installation did not introduce bacteria into the School's water system. The corresponding laboratory report is presented in Appendix B. We plan to collect weekly flow meter readings for approximately two months (until September 30, 2022) so that we can better estimate the Mission Union School MDD and properly size the proposed new well pump, water storage tanks, pressure pumps, and pressure tanks. Once we have adequately characterized the School's water demand, we plan to submit a revised version of this report.

3. Existing Water System Operations and Maintenance (O&M)

The School is classified as a Non-Transient Non-Community (NTNC) public water system. The existing water system operations and maintenance (O&M) is performed by Dougherty Pump and Drilling Inc (Dougherty). O&M tasks generally include: (1) collecting water

samples for analytical testing; (2) maintaining the water well, hydropneumatic tank, fire prevention storage tank, water lines, point of use nitrate RO filters, and associated appurtenances.

Problem Description

The School's current water source is a groundwater well, which has elevated nitrate concentrations. This is the primary problem with the School's water system. Nitrate concentrations have exceeded the Maximum Contaminant Level (MCL) set by the Environmental Protection Agency (EPA) and the State of California, and therefore pose a health risk. On November 16, 2018, Monterey County Health Department issued regulatory Compliance Order (No. 18-003) to the School for a Nitrate Maximum Contaminant Level (MCL) Violation - which legally required that the nitrate issue be resolved (Appendix A).

The recent sample concentrations exceeding the MCL are presented in the table below:

Analyte	Date	Concentration (mg/L)	MCL (mg/L)*
Nitrate as N	10/6/17	14	10
Nitrate as N	10/11/18	13	10
Nitrate as N	7/11/19	12	10

* mg/L = milligrams per liter

The exceedances shown in the table above occurred in the period from October 2015 to July 2022. During this same period, twenty-five nitrate sample concentrations were below the MCL. See Table 1 for all analytical results.

The School's water supply well was installed in September 1976 (45-years-old). A 45-year-old well is generally considered near or beyond its useful life span. The hydropneumatic

pressure tank, distribution system piping, and other appurtenances near the well head are also near or beyond their useful life span. Some of the distribution piping and valves are deteriorated and leaking.

1 – Alternative Analysis – No Action

Project Alternative #1 involves taking no corrective actions. This alternative does not address the primary problem of nitrate concentrations above the Maximum Contaminant Level (MCL). The ramification of not addressing this issue includes School students and staff potentially becoming ill. Project Alternative #1 also does not address the various secondary problems presented above in the Problem Description section.

> We do not recommend Alternative #1 because it does not address the School's drinking water problem of elevated concentrations of Nitrate.

2 – Alternative Analysis - Consolidation

According to a Monterey County Public Water System map (Figure 2), there are three other public water systems within two miles (10,560-feet) of the School. We evaluated these three water systems for potential consolidation with the School. A summary of our analysis is provided below:

Water System	Distance from School (ft)*	Details
Soledad Mission CA-2701176	8,400	System has current bacteria detections and is under a compliance order for nitrate. Property owned by the Catholic Diocese. It is also a Native American archeological site, which would make water line trench excavations expensive and potentially problematic (if archeological relics were discovered). Soledad Mission representative was not interested in consolidation. This is not considered a viable option.
San Saba CA-2702609	9,500	Water system representative was not interested in consolidation. This water system is associated with a winery. This is not considered a viable option.
Foothill Road CA-2702431	10,000 +	Water system representative was not interested in consolidation. This water system is associated with a winery. This is not considered a viable option.

* Path measured via Google Earth along existing roads (i.e., anticipated potential alignment of consolidation-related water mains)

As indicated in the Table above, these three consolidation options are not considered viable – primarily because none of the nearby public water systems want to consolidate with the School. Furthermore, it does not seem advisable for the School to consolidate with a winery (San Saba or Foothill Road) or a water system with bacteria and nitrate issues located on property owned by the Catholic Diocese on a Native American archeological site (Soledad Mission).

We also evaluated potential consolidation with the City of Soledad's (the City) water system. The City is willing to provide the School water, only if the School pays to construct ***and maintain*** a new water main and pump station. As such, the City is not willing to consolidate with the School (i.e., only to provide water – more information on this is provided below). Unfortunately, the distance to the nearest City water main is approximately 4.5-miles (23,750-feet) along existing roads. This option would also require crossing the Arroyo Seco and Salinas Rivers. Crossing the two rivers may be possible by attaching the water main to existing bridges. The bridge over the Salinas River is part of Highway 101. Connecting a water main to a bridge controlled by Caltrans would likely be a complex and expensive process. Furthermore, the associated cost of constructing the water main bridge alignment (1,800-feet long steel-casing-protected water main) would be high.

Another potential option is trenching / installing the water main across the Salinas River during the dry season. Crossing a river regulated by the Regional Water Board, Monterey County, and California Fish & Wildlife would likely be a complex and expensive process. This option would also require crossing a significant amount of private property on each side of the Salinas River, which further complicates this option and increases costs.

The School is approximately 60-feet higher in elevation than the City's closest water main connection point. So, a pump station would be needed to deliver water to the School.

Due to the high costs associated with the pump station, water main length, technical/logistical challenges of crossing rivers, crossing private property, and extending along portions of Highway 101 – consolidation with the City of Soledad is not considered a viable option. Again, the City of Soledad is only willing to provide water (i.e., not interested in consolidation). As such, the School would be charged annually to maintain the 4.5-mile water line and pump station (approximately $100,000 to $200,000 per year, indefinitely). This cost is in addition to water usage. Per City staff, if there was a water shortage or

emergency, the School's water would be shut off first - the City of Soledad's water system would be prioritized.

> For the reasons presented above, we do not recommend Alternative #2, consolidation.

3 - Alternative Analysis – Nitrate Treatment System

1. Description

Project Alternative #3 involves installing a Reverse Osmosis (RO) treatment system to remove nitrate from the groundwater. Alternative #3 addresses the primary problem of nitrate concentrations above the Maximum Contaminant Limit (MCL). However, there are several significant disadvantages as presented below.

(Note: we also evaluated ion exchange and other potential nitrate treatment technologies. This is discussed further at the end this Alternative Analysis section)

2. Design Criteria

The design criteria are generally based on the anticipated nitrate concentrations and the School's maximum daily potable water demand. For this alternative, we assumed that RO system "reject-water" (high concentration brine and nitrate wastewater produced by the system) would need to be hauled off-site for disposal. The reject-water likely cannot be discharged to the ground surface or put in a septic system for environmental reasons.

3. Environmental Impacts

Alternative #3 has generally minor to moderate environmental impacts, including: land disturbance associated with replacing the distribution system, installing a new potable water storage tank; and installing the treatment system infrastructure. There would be vehicle emissions from periodically hauling away the reject-water. There is also an impact to the water treatment plant that would need to treat or otherwise dispose of the reject-water.

4. Land Requirements

There are no property or lease purchases required for this alternative. The nitrate treatment system and water system would be located on School-owned property, so no easements are required either.

5. Construction and Site Considerations

There is currently room near the existing wellhead to construct the nitrate treatment system. The treatment system would need to be housed on a new concrete pad in a shed enclosure.

6. Cost Estimate

Table 2 summarizes costs for a new potable water storage and supply system. Table 3 summarizes costs for the entire Alternative #3 (this includes the costs from Table 2). The treatment system costs are based on our experience with similar reverse osmosis systems and discussions with various water treatment system designers.

7. Advantages / Disadvantages

The advantage of Alternative #3 is removing nitrate from the groundwater. The disadvantages include:

- High cost to install RO treatment system
- High monthly Operations and Maintenance (O&M) cost to maintain the treatment system, especially to off-haul the reject-water (high concentration brine and nitrate wastewater produced by the system).

- Considerably more complicated and expensive Operations and Maintenance (O&M) tasks to maintain the treatment system (as compared to a water system without centralized nitrate filtration at the well head). High monthly O&M costs would be a financial burden for the School, which likely could not draw upon state funding to pay for such costs.
- This alternative includes leaving the existing well in place, which is a conduit for elevated nitrate concentrations to migrate to deeper depths of the aquifer.
- A new water well will likely need to be installed sometime in the next 20-years as either a back-up or replacement for the existing well. The existing water well is currently operational; but was installed in 1976 (46-years old) – and considered near the end of its useful life. New well installation would add significant cost to the already expensive nitrate filtration alternative.

8. Alternative Evaluation and Selection

This treatment system alternative could effectively remove elevated nitrate concentrations. However, we do not recommend this alternative based on the following disadvantages: (1) the high cost of installation, (2) the high cost of monthly O&M (including "reject-water" water disposal), (3) relative complexity of monthly O&M tasks, (4) leaving the existing well in place is a conduit for nitrate to migrate to deeper depths, and (5) the existing well is near the end of its useful lifespan.

> Based on the disadvantages above, we do not recommend Alternative #3.

(Note: Ion exchange technology could also be used to remove nitrate concentrations from the groundwater. In general, we anticipate high initial installation and on-going monthly O&M costs to operate an ion exchange treatment system. Significant amounts of sodium chloride are added during the ion exchange treatment process. The sodium chloride is

concentrated into a waste stream and would ultimately need to be disposed of. It may not be environmentally feasible to discharge this waste stream into the School's existing septic system. We anticipate that this highly concentrated sodium chloride waste stream (associated with periodic regeneration of the ion-exchange resin media) would need to be hauled off-site for disposal, which is expensive. The ion exchange treatment process results in more net salt in the waste stream as compared to reverse osmosis. Reverse osmosis treated water quality tends to be more stable, while ion exchange treated water quality is sensitive to potential changes in feed water sulfate concentrations and pH levels.

Primarily due to: (1) the concerns discussed above, (2) potentially leaving an elevated nitrate conduit well in place, and (3) the existing well is near the end of its useful lifespan – we do not consider ion exchange to be a viable alternative.

The alternative of an electrodialysis treatment process to remove nitrate also generates a concentrated waste stream, which would likely be expensive to dispose of.

Biological treatment systems to remove nitrate are gaining traction in California. The advantage of these systems is that the only waste product is from system backwashing, which can be disposed of in a sanitary sewer or septic system. However, biological treatment is not listed as a best available technology in Title 22 for nitrate compliance. Use of biological treatment for nitrate removal requires an extensive pilot test to be accepted for use in California. For these reasons, we do not recommend biological treatment.

We spoke to three reputable water treatment system design engineers. For this project's application, they all recommended reverse osmosis treatment over ion exchange and other treatment methods.

The research we performed on ion exchange and other nitrate treatment technologies is summarized above. We consider this research sufficient within the context of this project to perform an effective alternative analysis.)

4 - Alternative Analysis – New Well

1. Description

Project Alternative #4 involves installing a new well in search of non-elevated nitrate concentrations in groundwater. The term “non-elevated” generally refers to non-detect to trace nitrate concentrations [less than 2 milligrams per liter (mg/L)]. The nitrate Maximum Contaminant Level (MCL) is 10 mg/L.

Alternative #4 addresses the primary problem of elevated nitrate concentrations.

2. Design Criteria

The design parameters generally include installing an 8-inch diameter stainless steel wire-wrap screen replacement water supply well. The proposed well would be screened at a deeper interval than the existing well. The deeper well screen interval is anticipated to be below the existing elevated nitrate concentrations. We base this on conclusions from the Besst Inc. report: *Final Video, Dynamic Flow and Chemistry Profiling Report (October 2018)*, which include:

- Upper well screen (depth of 219 to 229-feet) yields approximately 39% of well production and contains elevated nitrate concentrations (4.7 to 6.4 mg/L)
- Lower well screen (depth of 394 to 414-feet) yields approximately 61% of well production and does not contain significantly elevated nitrate concentrations (1.4 to 1.5 mg/L)

Our proposed deeper well screen interval is from approximately 394 to 700-feet (this interval may be adjusted in the field based on drilling observations and geophysical borehole logging). Per the Besst Report profiling results discussed above, a well screened

at this interval should not contain significantly elevated nitrates. While groundwater from 394 to 700-feet most likely does not contain elevated nitrate concentrations, it may contain elevated iron and manganese concentrations - especially at deeper depths. However, an off-site water supply well (GAMA_USGS MSSV-16[1]) located approximately 500-feet south-southeast of the School's well had non-detectable concentrations of iron (<4.0 micrograms per liter; µg/L), manganese (<0.4 µg/L), and a low concentration of nitrate (1.59 mg/L) when tested last in September 2014 (well screened interval is 200 to 790-feet). See Table 4 for a summary of all analytical data from this nearby well.

We performed an analysis of nearby wells, searching for wells screened at depths generally similar to our proposed well (i.e., approximately 400 to 700-feet). Per our analysis, the well noted above (GAMA_USGS MSSV-16) was the only well identified within approximately 2,000-feet of the School that was screened generally similar to the proposed well and had relevant analytical data available. Our well search analysis included online information from the GAMA, USGS, and the Department of Water Resources Well Completion Map App – in addition to information provided by Monterey County Health Department staff.

We understand that iron and manganese is not currently an issue at the School. Given that the proposed deeper well would be screened from the depth of the existing well's lower screen (394-feet) down to 700-feet, a portion of the proposed well's production water should be low in potential iron and manganese (i.e., that from the 394 to 414-feet interval). This could help offset potential higher iron and manganese concentrations at greater depths, which as we mention above are unlikely.

The BESST Report indicates that groundwater from the existing well's lower screen (394 to 414-feet) contained trace amounts of nitrate [1.4 to 1.5 mg/L]. Because the proposed deeper well screen would extend from 394 to 700-feet, any trace concentrations of nitrate

[1] GAMA = Groundwater Ambient Monitoring and Assessment Program. Created by the State Water Resources Control Board; USGS = United States Geological Survey

from the 394 to 414-feet interval should be further diluted by anticipated near non-detect nitrate concentrations from approximately 430 to 700-feet. Because nitrates typically enter groundwater from ground surface application of agricultural fertilizers, we anticipate nitrates to be present at shallower (and not deeper depths). The Besst Report discussed above further supports this mechanism.

We chose to include the 394 to 414-feet interval in the proposed well, primarily because:

- This interval produces approximately 61% of the existing well's water flow. Sufficient water production capacity is essential to a successful well.
- It likely has low iron and manganese concentrations, which can help dilute potential, yet unlikely higher iron and manganese concentrations from deeper screened intervals

3. Environmental Impacts

Alternative #3 has minor environmental impacts including: installing the new well and land disturbance associated with replacing the water supply system and installing a water storage tank and related appurtenances.

4. Land Requirements

There are no property or lease purchases required for this alternative. The proposed new well would be located on School-owned property, so no easements are required either.

5. Construction and Site Considerations

There is currently room near the existing wellhead to construct a new well. The new wellhead, pressure pumps and pressure tanks, and water system control panel will be protected from the elements by a building that meets Division of State Architect (essentially the building department for Schools) requirements.

6. Cost Estimate

Table 2 summarizes costs for a new potable water storage and supply system. Table 5 summarizes costs for the entire Alternative #4 (this includes the costs from Table 2).

7. Advantages / Disadvantages

The advantages of Alternative #4 is that it provides a reliable long-term drinking water source for the School at the lowest overall cost. In addition, Operations and Maintenance costs are similar to the existing system and the lowest of the potentially viable alternatives evaluated.

The disadvantages include:

- Moderate cost to install a new well, potable water storage tank and supply system.
- The is no guarantee that non-elevated nitrate concentrations would be present in a new well. It's possible that even with a new well, an expensive treatment system may still be needed. However, because: (1) the Besst Report indicated only trace nitrate levels (1.4 to 1.5 mg/L) in the deeper screened interval (394 to 414-feet); and (2) elevated nitrate concentrations are not anticipated at deeper depths, based on data from a nearby deeper-screened well - we have a good chance for a favorable outcome.

8. Alternative Evaluation and Selection

For the reasons stated above, we selected Alternative 4, a new well as the best option. It is also considerably less expensive and simpler to operate than a nitrate treatment system.

> Based on the advantages listed in the sections above, we recommend installing a new well as the long-term solution to elevated concentrations of nitrate in the existing well (Alternative #4).

Selected Project

The selected project includes drilling a new well, installing a potable water storage tank and water supply system.

1. New Water Supply Well

See the New Well "Design Criteria" section above for the description. The proposed new well (Well 02) will be constructed with stainless steel wire wrapped screen from approximately 394 to 700-feet below ground surface (bgs). There will be 40 feet of stainless-steel blank casing above the screen (approximately 354 to 394 feet bgs), then a dielectric coupling, and carbon steel blank casing to the ground surface (0 to approximately 354 feet bgs).

2. Schematic and Map of System's Proposed Facilities

See Figure 4 for a schematic and map of the proposed new well (Well 02) location.

3. Justification

There were two viable alternatives to consider: (1) a nitrate treatment system and (2) a new well. Of these two alternatives, the new well is considerably less expensive and simpler to operate, with a concomitant lower lifecycle cost, making it the best long-term solution.

4. Describe Potential O&M Challenges and Solutions

If the new well alternative is selected, then the potential O&M challenges would likely be minor. A potential challenge is elevated iron and manganese concentrations, which could

precipitate within the system and cause black or reddish-brown staining to the sinks and toilets and aesthetically unpleasing water. If iron and manganese concentrations are excessively high, then a filtration system may be required. Based on the information presented in the "Design Criteria" section above, we do not anticipate that iron and manganese filtration would be necessary.

5. Determine if the Project is Consistent with Local/County Planning

To our knowledge, this project is consistent with local and County planning.

6. Project to Include Green and Resilient Components

See the "Comprehensive Response to Climate Change" section below for details on green and resilient components.

7. If Project Selected is a Consolidation Project, List All Parties Involved and Discuss New Structure

Not applicable because consolidation is not a viable option.

8. List Any Land that Will Need to Be Purchased or Acquired to Complete the Construction Project

No land will need to be purchased or acquired to install the new well (Alternative 4).

9. Describe Final Plans, Specifications, and Other Technical Aspects of the Project

The selected project includes drilling a new water supply well, installing potable water storage tanks, installing pressure pumps and pressure tanks, and associated appurtenances, valves, and piping. Equipment and process flow details are presented below:

- The proposed well is 8-inches in diameter with stainless steel wire-wrapped well screen in the interval from approximately 394 to 700-feet bgs. There will be 40 feet of stainless steel blank casing above the screen (approximately 354 to 394 feet bgs), then a dielectric coupling, and carbon steel blank casing to the ground surface (0 to approximately 354 feet bgs)
- A submersible well pump will pump water from the well into the top of the new water storage tanks. An air gap will be created by placing the tank overflow below the inlet connection. The appropriate water storage capacity is being determined based on actual water usage (for now, we anticipate that 10,000-gallons of water storage will be sufficient). A flow meter was recently installed near the existing well head (July 27, 2022). The flow meter monitors the amount of water that the School uses for domestic and irrigation purposes.
- Water will flow from the bottom of the storage tanks to a duplex pressure pump, which will pressurize the potable water distribution system. The pressure pump outlet manifold will be connected to pressure tanks to maintain water system pressure when the pressure pump is not running.

- In addition to the domestic water delivery system explained above, a dedicated water line will run from the well outlet directly to the fire prevention storage tank. This dedicated water line will bypass the potable water storage tank, pressure pumps, and pressure tanks described above. We chose this configuration for simplicity and the ability to deliver a sustained high flow rate directly from the well to the fire prevention storage tank.

- In addition to the domestic water delivery system explained above, a dedicated water line will run from the well outlet directly to the irrigation system through a backflow preventer. This dedicated water line will bypass the potable water storage tank, pressure pumps, and pressure tanks discussed above. We chose this configuration to limit the amount of water storage required, as it appears the maximum irrigation demand is significant. We plan to store water based on the domestic water usage maximum daily demand.
- All above ground piping will be galvanized steel. Below ground piping will be Schedule 80 Polyvinyl Chloride (PVC) or AWWA C900 Class 150.

Figure 4 shows a schematic map of the water system elements discussed above.

10. Provide Water Demand and Capacity Analysis

As presented in the “Background Project Information” section above, the anticipated maximum daily demand is 4,648 gallons per day. This volume is based on approximations from three other school water systems that we have worked with and accepted values for school populations. We have been monitoring the actual water usage at the School only since July 27, 2022, when a flow meter was installed at the well head. Once we have more extensive actual water use data at the School, we will revise the anticipated maximum daily demand accordingly.

Per the School's current water system operator (Dougherty Pump & Well Company), the existing well produces 225 gallons per minute (GPM). We anticipate that the proposed new well will have the general capacity to produce approximately 225 GPM. At this rate, the maximum daily demand could be pumped in approximately 21 minutes – which indicates that the proposed well will have plenty of capacity.

11. Estimated Useful Life

We estimate the useful life for the following major components:

- New well casing and filter pack: 50-years+
- Well submersible pump: 20-years+
- Potable water storage tank: 15-years+
- Pressure pump and pressure tanks: 20+ years
- Control panel and various appurtenances: 20-years+

Detailed Cost Estimate for the Selected Project

See Table 5 for the detailed cost estimate. See Table 6 for a cost comparison with the other viable alternative. A 20-year period life cycle cost analysis was performed on the two Alternatives.

Proposed Schedule

We anticipate the following schedule for submittals to the TA Team:

Engineering Report and 60% design plans	September 20, 2022
Comments from the TA Team	November 18, 2022
90% plans to the TA Team	December 16, 2022
Draft Technical Package	January 27, 2023
Draft Environmental Package	January 27, 2023

Schematic and map of system's proposed facilities

See Figure 4 for a schematic map of the system's proposed facilities.

Comprehensive Response to Climate Change

This section describes climate change preparedness for the project and is organized as follows:

Vulnerability – Describes the effects of climate changes that the proposed project is susceptible to, including critical threshold conditions that may cause damage to the facility or result in loss of services

Adaptation – Describes the applied adaptation measures considered for the project, including adaptation measures deemed unnecessary, and explains why such measures were eliminated

Mitigation – Describes the mitigation measures considered for the project, including mitigation measures deemed unnecessary, and explains why such measures were eliminated

1. Vulnerability

Vulnerability is used to identify effects of climate change that the project may be susceptible to. Vulnerability includes sea level rise, water supply depletion, adverse water supply quality, flooding/storm surges, wildfires, and drought.

The climate change effects the Project may be susceptible to are discussed below.

Sea Level Rise

The project is not susceptible to sea level rise.

Water Supply Quality issues

The School has an existing water supply well. We recommend that a new, deeper water supply well is installed.

A significant portion of Monterey County is occupied by forest, prairie, and agricultural land. Wildfire is a common occurrence in the Region due primarily to the warm, dry climate. Longer and warmer seasons are likely to result in a low to moderate increase in fire risk. This could result in increased sedimentation to reservoirs, possibly negatively impacting surface water quality. However, because the School utilizes groundwater and is surrounded primarily by irrigated agricultural land – the risk from wildfires is considered generally low.

Statewide, rainfall and snowfall are expected to change in terms of both type and timing. At the local level, changes in the timing and intensity of precipitation could negatively affect groundwater recharge and the local groundwater supply.

Flooding/Storm Surges

The project is not susceptible to flooding or storm surges. The School is located outside of the Federal Emergency Management Agency's (FEMA) 100-year flood plain.

Forest Fires

The project is generally not susceptible to forest fires, because it is surrounded by irrigated agricultural fields.

Drought

Longer or more frequent droughts due to climate change may adversely affect all water supplies. This could lead to water supply issues for all of California, including the School. Water conservation should be practiced to help insure a long-term water supply.

Other

No other vulnerability effects of climate change were identified for the Project.

2. Adaptation

Adaptation is the term used to identify measures taken as a direct response to climate change effects. Multiple measures can be taken in response to a single vulnerability. For example, in response to sea level rise an agency may investigate constructing sea walls or levees in order to prevent flooding. Flood contingencies could also be explored to protect the project if the levees fail or in the event of severe storm surges.

Adaptive measures in the Project in response to Climate Change are described below.

Renewable Energy Sources

The School has approximately 3,400 square-feet of solar panels installed on its roof, generating a significant amount of the energy it uses. Energy usage will not be significantly changed as this project consists of primarily replacing an existing water supply well.

Drought Resiliency and Flood Contingency

The depth to groundwater in 1976 was approximately 97-feet (a drought year). During the October 2018 pumping test (by Besst Inc.), the depth to groundwater was essentially unchanged (approximately 100-feet deep). Considering these depths to groundwater and the 700-feet depth of the proposed well, we conclude that this project has significant drought resiliency. The project is not subject to flooding. The School is located outside of the Federal Emergency Management Agency's (FEMA) 100-year flood plain.

Permeable Pavements

No permeable pavements are incorporated in the Project.

Elevated Construction, Sea Walls, Levees

No elevated construction, sea walls or levees are necessary for the Project, and none have been incorporated into the Project.

Green Roofing

No green roofing has been incorporated in the Project, as only very small structures are involved.

Fire Resistant Water Connections and Hydrants

Fire hydrants and the necessary flow and pressure to ensure their proper operation are not part of the Project. Fire resistant water connections are not part of the Project.

Other

No other adaptations were included in the Project.

3. Mitigation

Mitigation is the term used to identify measures taken to slow or stop changes caused by greenhouse gas emissions in the atmosphere. Measures identified in adaptation may also be used for mitigation. For example, water conservation may be an adaptation response to drought vulnerability but a mitigation measure by reducing the energy consumed to move excessive volumes of water. Green roofing as an adaptation measure will help to reduce the heat island effect of an urban community, and as a mitigation measure will reduce the energy consumed to heat and cool the building.

Mitigation measures taken to reduce concentrations of greenhouse gases in the atmosphere as part of the Project are described below.

Renewable Energy Sources

The School has approximately 3,400 square-feet of solar panels installed on the School roof, generating a significant amount of the energy. Energy usage will not be significantly changed as this project consists of simply replacing an existing water supply well. We propose to add a battery storage system as the emergency back-up for water system power. This system would have the added advantage of reducing energy use and cost for the school in non-emergency/power outage situations.

Energy Conservation

High efficiency motors are the primary energy conservation measure incorporated into this project.

Water Conservation

Water conservation components of the Project include:

- New water distribution lines which will be “tight” (no leaks)
- Water meters at well head and the proposed potable water tank effluent

Other

No other mitigation measures were included in the Project.

An Environmental Analysis of the various Engineering Alternatives is presented in Appendix C.

Limitations

Our service consists of professional opinions and recommendations made in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all others, either expressed or implied. The analysis and conclusions in this report are based on site observations and existing data, some of which have been conducted or collected by others, all of which are necessarily limited. Additional data from future work may lead to modifications of the opinions expressed herein. All work was conducted under the direct supervision of a Professional Engineer, registered in the state of California, and experienced in drinking water system design and water resource engineering.

Thank you for the opportunity to prepare this *Engineering Report* for Water System Improvements at Mission Union School. If you have any questions or comments regarding this project, please contact us at 831-722-3580.

Sincerely yours,

Weber, Hayes and Associates

A California Corporation

By: _____
Shawn Mixan, EIT, D2, T2
Project Engineer

And: _____
Craig B. Drizin, PE
Principal Engineer

References

- *Final Video, Dynamic Flow and Chemistry Profiling Report: Mission Union Elementary School; Soledad*; October 29, 2018; Besst Inc. Global Subsurface Technologies

FIGURES

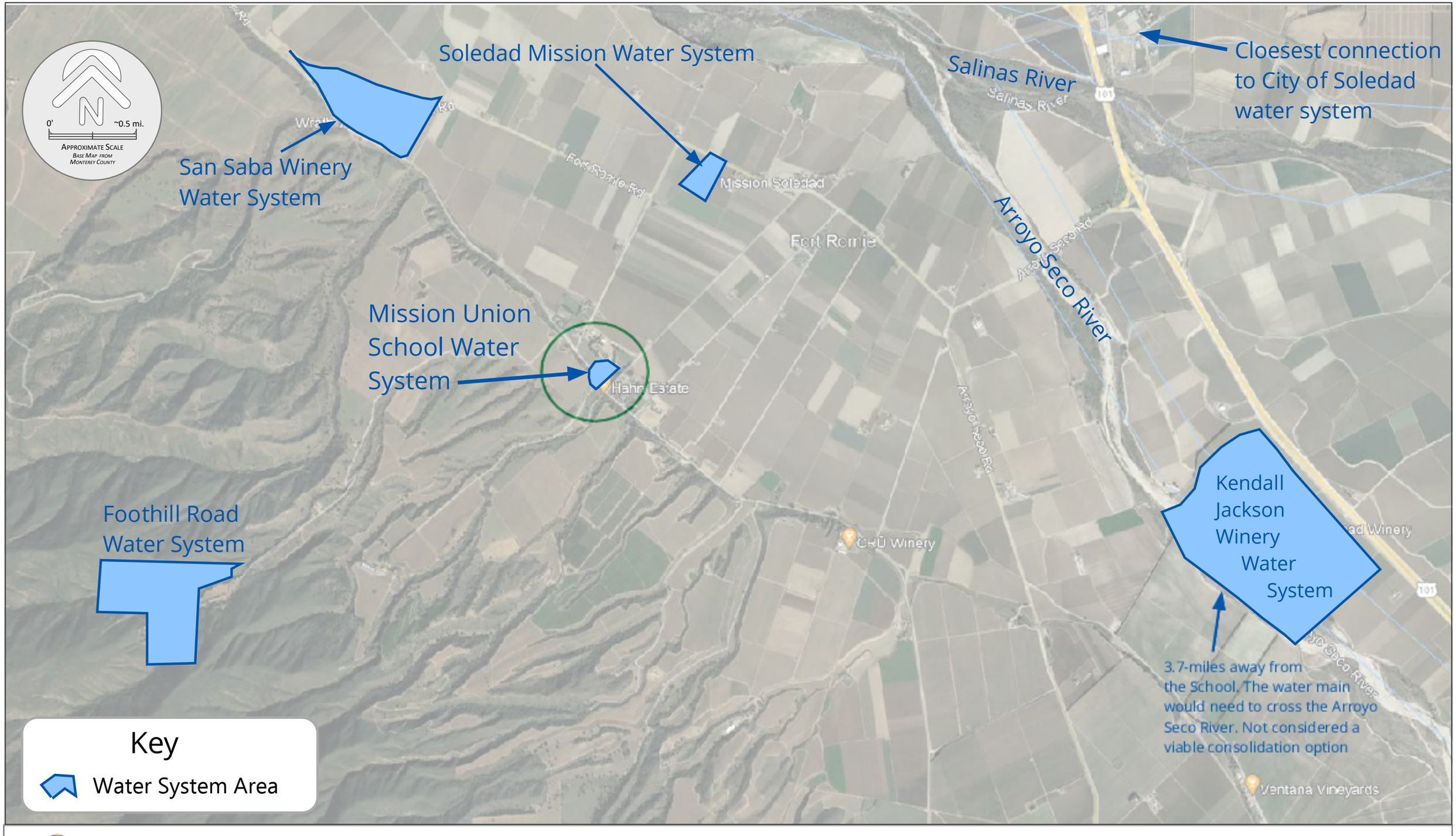
Weber Hayes Associates

Location Map

Mission Union Elementary School,Soledad, CA

Figure 1

Jan 2022



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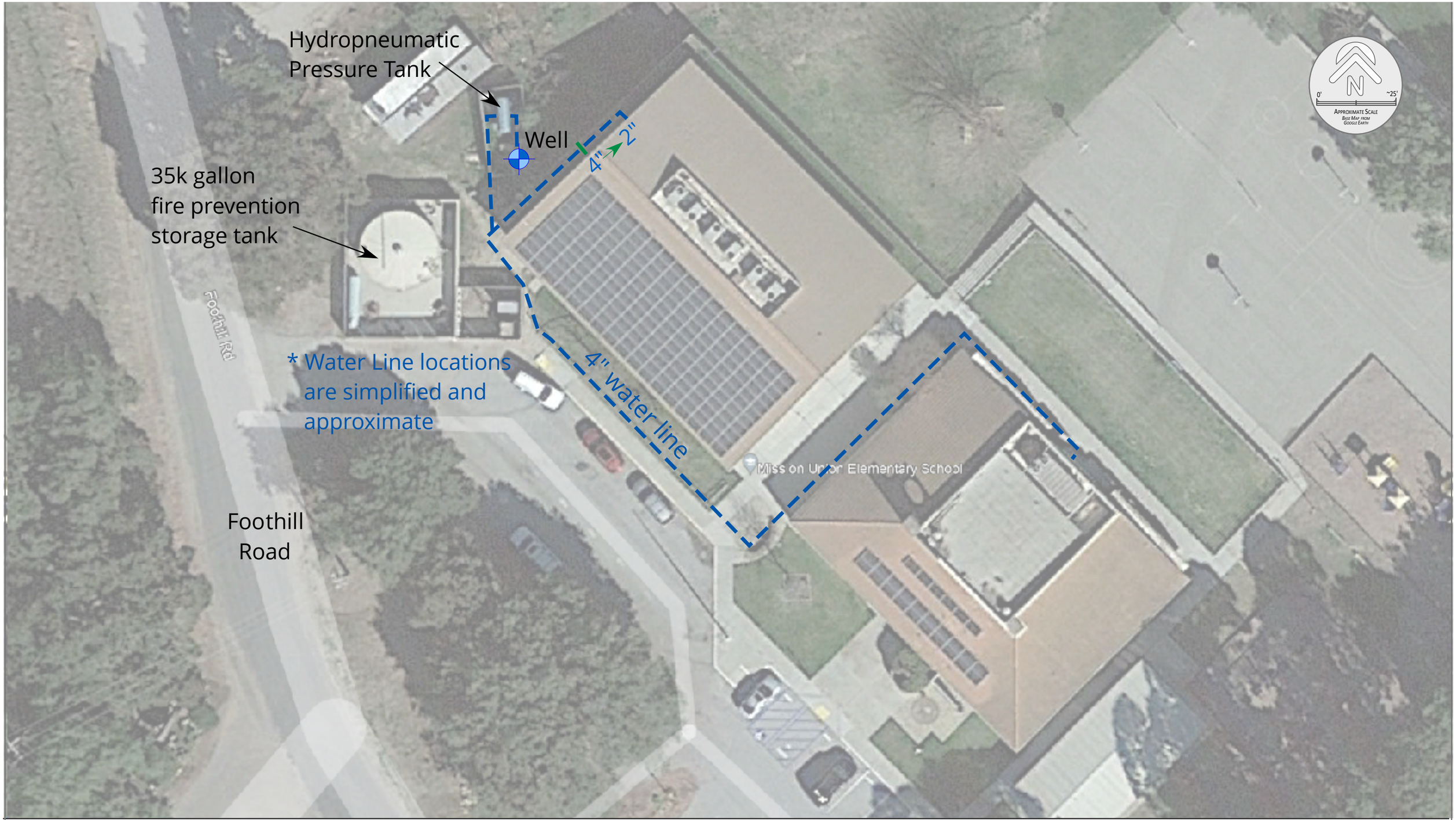
Vincinity Map with Water Company Service Area Boundaries

Mission Union Elementary School, Soledad, CA

Figure 2

Jan 2022



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Schematic and Map of the Water System - Existing
Mission Union Elementary School, Soledad, CA

Figure 3
Jan 2022

* Location of system components and water lines are simplified and approximate

Well 02 (N)

To irrigation system through backflow preventer (N)

(N) Pressure Pump & Pressure Tanks

(N) Well & Pump Building

Two 5,000-gal water storage tanks (N)

(E) Water System Compound with Well 01 & Hydropneumatic Tank

(N) Fenced Water System Compound/Pad (Relocate (E) Storage Containers)

(N) To fire tank through air gap

Water Supply Line (N)

4" 2"

Mission Union Elementary School Building

(E) 35k-gallon fire prevention storage tank

4" water line

Water Lines (E)

Electrical Panel (E)

Key

(N) New
(E) Existing

Foothill Road

0' ~25'

Approximate Scale
Base Map from Google Earth

Weber Hayes Associates

Schematic and Map of Water System Improvements
Mission Union Elementary School, Soledad, CA

Figure 4
August 2022

TABLES

Table 1 - Water Quality Data (Well-1)

Analyte	Sample Date	Result	Unit	MCL
ALUMINUM	2/3/15	ND	UG/L	1000
ALUMINUM	1/25/11	ND	UG/L	1000
ARSENIC	2/3/15	1	UG/L	10
BARIUM	2/3/15	47	UG/L	1000
CADMIUM	2/3/15	ND	UG/L	5
CADMIUM	1/25/11	4	UG/L	5
CHROMIUM	2/3/15	6	UG/L	50
CHROMIUM	1/25/11	ND	UG/L	50
CYANIDE	2/3/15	ND	UG/L	150
CYANIDE	1/25/11	ND	UG/L	150
FLUORIDE	2/3/15	0.3	MG/L	2
FLUORIDE	1/25/11	0.29	MG/L	2
LEAD	1/25/11	ND	UG/L	---
MERCURY	2/3/15	ND	UG/L	2
MERCURY	1/25/11	ND	UG/L	2
NICKEL	2/3/15	ND	UG/L	100
NICKEL	1/25/11	ND	UG/L	100
NITRATE	1/18/22	2.5	UG/L	10
NITRATE	4/5/22	3.6	UG/L	10
NITRATE	7/11/22	3.2	UG/L	10
NITRATE	10/4/21	2.9	mg/L	10
NITRATE	7/22/21	4	mg/L	10
NITRATE	4/9/21	4	mg/L	10
NITRATE	10/14/20	3.2	mg/L	10
NITRATE	4/6/20	1.8	mg/L	10
NITRATE	1/13/20	1.6	mg/L	10
NITRATE	10/16/19	3.6	mg/L	10
NITRATE	7/11/19	12.2	mg/L	10
NITRATE	4/2/19	1.6	mg/L	10
NITRATE	1/15/19	1.7	mg/L	10
NITRATE	10/11/18	13	mg/L	10
NITRATE	7/11/18	8.8	mg/L	10
NITRATE	4/3/18	1.8	mg/L	10
NITRATE	1/17/18	1.9	mg/L	10
NITRATE	10/13/17	4.5	mg/L	10
NITRATE	10/10/17	6.1	mg/L	10
NITRATE	10/6/17	14	mg/L	10
NITRATE	7/13/17	6.1	mg/L	10
NITRATE	4/18/17	2.2	mg/L	10
NITRATE	1/19/17	2	mg/L	10
NITRATE	10/10/16	1.5	mg/L	10
NITRATE	7/10/16	5.4	mg/L	10
NITRATE	4/3/16	1.8	mg/L	10
NITRATE	1/10/16	1.5	mg/L	10

Table 1 - Water Quality Data (Well-1)

Analyte	Sample Date	Result	Unit	MCL
NITRATE	10/4/15	3.6	mg/L	10
NITRITE	1/17/18	ND	mg/L	1
NITRITE	2/3/15	0.2	mg/L	1
NITRITE	1/25/11	ND	mg/L	1
NITRATE-NITRITE	1/17/18	1.9	mg/L	10
NITRATE-NITRITE	2/3/15	4.1	mg/L	10
NITRATE (AS NO3)	10/4/15	16	MG/L	45
NITRATE (AS NO3)	7/19/15	11	MG/L	45
NITRATE (AS NO3)	4/6/15	7	MG/L	45
NITRATE (AS NO3)	2/5/15	6	MG/L	45
NITRATE (AS NO3)	2/3/15	17	MG/L	45
NITRATE (AS NO3)	5/18/14	32	MG/L	45
NITRATE (AS NO3)	1/5/14	6	MG/L	45
NITRATE (AS NO3)	1/3/13	5	MG/L	45
NITRATE (AS NO3)	1/3/12	10	MG/L	45
NITRATE (AS NO3)	1/25/11	6	MG/L	45
NITRATE (AS NO3)	1/6/11	6	MG/L	45
PERCHLORATE	8/7/19	ND	UG/L	6
PERCHLORATE	9/22/16	ND	UG/L	6
PERCHLORATE	5/12/11	ND	UG/L	6
SELENIUM	2/3/15	2	UG/L	50
SELENIUM	1/25/11	ND	UG/L	50
CONDUCTIVITY @ 25 C UMHOS/CM	8/7/19	510	US	1600
CONDUCTIVITY @ 25 C UMHOS/CM	9/22/16	510	US	1600
CONDUCTIVITY @ 25 C UMHOS/CM	5/12/11	510	US	1600
ANTIMONY, TOTAL	2/3/15	ND	UG/L	6
ANTIMONY, TOTAL	1/25/11	ND	UG/L	6
BERYLLIUM, TOTAL	2/3/15	ND	UG/L	4
BERYLLIUM, TOTAL	1/25/11	ND	UG/L	4
CHROMIUM, HEX	10/20/14	1.3	UG/L	10
THALLIUM, TOTAL	2/3/15	ND	UG/L	2
THALLIUM, TOTAL	1/25/11	ND	UG/L	2
ALKALINITY, TOTAL	5/18/14	155	MG/L	---
TDS	1/17/18	336	MG/L	1000
CARBARYL	8/17/20	ND	UG/L	---
CARBARYL	6/14/17	ND	UG/L	---
CARBARYL	2/3/15	ND	UG/L	---
METHOMYL	8/17/20	ND	UG/L	---
METHOMYL	6/14/17	ND	UG/L	---
METHOMYL	2/3/15	ND	UG/L	---
P-ISOPROPYLTOLUENE	5/15/17	ND	UG/L	---
P-ISOPROPYLTOLUENE	7/8/12	ND	UG/L	---
DALAPON	8/17/20	ND	UG/L	200
DALAPON	6/14/17	ND	UG/L	200
DALAPON	2/3/15	ND	UG/L	200
DIQUAT	8/17/20	ND	UG/L	20

Table 1 - Water Quality Data (Well-1)

Analyte	Sample Date	Result	Unit	MCL
DIQUAT	6/14/17	ND	UG/L	20
DIQUAT	2/3/15	ND	UG/L	20
OXAMYL	8/17/20	ND	UG/L	50
OXAMYL	2/3/15	ND	UG/L	50
SIMAZINE	8/17/20	ND	UG/L	4
SIMAZINE	6/14/17	ND	UG/L	4
SIMAZINE	2/3/15	ND	UG/L	4
DI(2-ETHYLHEXYL) PHTHALATE	2/3/15	ND	UG/L	4
PICLORAM	8/17/20	ND	UG/L	500
PICLORAM	6/14/17	ND	UG/L	500
PICLORAM	2/3/15	ND	UG/L	500
DINOSEB	8/17/20	ND	UG/L	7
DINOSEB	6/14/17	ND	UG/L	7
DINOSEB	2/3/15	ND	UG/L	7
ALDICARB SULFOXIDE	8/17/20	ND	UG/L	---
ALDICARB SULFOXIDE	6/14/17	ND	UG/L	---
ALDICARB SULFOXIDE	2/3/15	ND	UG/L	---
ALDICARB SULFONE	8/17/20	ND	UG/L	---
ALDICARB SULFONE	6/14/17	ND	UG/L	---
ALDICARB SULFONE	2/3/15	ND	UG/L	---
METOLACHLOR	8/17/20	ND	UG/L	---
METOLACHLOR	6/14/17	ND	UG/L	---
METOLACHLOR	2/3/15	ND	UG/L	---
CARBOFURAN	8/17/20	ND	UG/L	18
CARBOFURAN	6/14/17	ND	UG/L	18
CARBOFURAN	2/3/15	ND	UG/L	18
ALDICARB	8/17/20	ND	UG/L	---
ALDICARB	6/14/17	ND	UG/L	---
ALDICARB	2/3/15	ND	UG/L	---
ATRAZINE	8/17/20	ND	UG/L	1
ATRAZINE	6/14/17	ND	UG/L	1
ATRAZINE	2/3/15	ND	UG/L	1
LASSO	8/17/20	ND	UG/L	2
LASSO	6/14/17	ND	UG/L	2
LASSO	2/3/15	ND	UG/L	2
SPECTRACIDE	2/3/15	ND	UG/L	---
3-HYDROXYCARBOFURAN	8/17/20	ND	UG/L	---
3-HYDROXYCARBOFURAN	6/14/17	ND	UG/L	---
3-HYDROXYCARBOFURAN	2/3/15	ND	UG/L	---
BUTACHLOR	8/17/20	ND	UG/L	---
BUTACHLOR	6/14/17	ND	UG/L	---
BUTACHLOR	2/3/15	ND	UG/L	---
PROPACHLOR	8/17/20	ND	UG/L	---
PROPACHLOR	6/14/17	ND	UG/L	---

Table 1 - Water Quality Data (Well-1)

Analyte	Sample Date	Result	Unit	MCL
PROPACHLOR	2/3/15	ND	UG/L	---
BROMACIL	8/17/20	ND	UG/L	---
BROMACIL	6/14/17	ND	UG/L	---
BROMACIL	2/3/15	ND	UG/L	---
2,4-D	8/17/20	ND	UG/L	70
2,4-D	6/14/17	ND	UG/L	70
2,4-D	2/3/15	ND	UG/L	70
2,4,5-TP	8/17/20	ND	UG/L	50
2,4,5-TP	6/14/17	ND	UG/L	50
2,4,5-TP	2/3/15	ND	UG/L	50
2,4,5-T	6/14/17	ND	UG/L	---
2,4,5-T	2/3/15	ND	UG/L	---
CHLOROMETHANE	5/15/17	ND	UG/L	---
CHLOROMETHANE	7/8/12	ND	UG/L	---
DICHLORODIFLUOROMETHANE	5/15/17	ND	UG/L	---
DICHLORODIFLUOROMETHANE	7/8/12	ND	UG/L	---
BROMOMETHANE	5/15/17	ND	UG/L	---
BROMOMETHANE	7/8/12	ND	UG/L	---
CHLOROETHANE	5/15/17	ND	UG/L	---
CHLOROETHANE	7/8/12	ND	UG/L	---
TRICHLOROFLUOROMETHANE	5/15/17	ND	UG/L	150
TRICHLOROFLUOROMETHANE	7/8/12	ND	UG/L	150
DIMETHOATE	8/17/20	ND	UG/L	---
DIMETHOATE	6/14/17	ND	UG/L	---
DIMETHOATE	2/3/15	ND	UG/L	---
TRANS-1,3-DICHLOROPROPENE	5/15/17	ND	UG/L	.5
TRANS-1,3-DICHLOROPROPENE	7/8/12	ND	UG/L	.5
CIS-1,3-DICHLOROPROPENE	5/15/17	ND	UG/L	.5
CIS-1,3-DICHLOROPROPENE	7/8/12	ND	UG/L	.5
ACETONE	5/15/17	ND	UG/L	---
ACETONE	7/8/12	ND	UG/L	---
ISOPROPYL ETHER	5/15/17	ND	UG/L	---
ISOPROPYL ETHER	7/8/12	ND	UG/L	---
HEXACHLOROBUTADIENE	5/15/17	ND	UG/L	---
HEXACHLOROBUTADIENE	7/8/12	ND	UG/L	---
METHYL ETHYL KETONE	5/15/17	ND	UG/L	---
METHYL ETHYL KETONE	7/8/12	ND	UG/L	---
NAPHTHALENE	5/15/17	ND	UG/L	---
NAPHTHALENE	7/8/12	ND	UG/L	---
METHYL TERT-BUTYL ETHER	5/15/17	ND	UG/L	13
METHYL TERT-BUTYL ETHER	7/8/12	ND	UG/L	13
4-METHYL-2-PENTANONE	5/15/17	ND	UG/L	---
4-METHYL-2-PENTANONE	7/8/12	ND	UG/L	---
BENZO(A)PYRENE	2/3/15	ND	UG/L	.2

Table 1 - Water Quality Data (Well-1)

Analyte	Sample Date	Result	Unit	MCL
PENTACHLOROPHENOL	8/17/20	ND	UG/L	1
PENTACHLOROPHENOL	6/14/17	ND	UG/L	1
PENTACHLOROPHENOL	2/3/15	ND	UG/L	1
1,2,4-TRICHLOROBENZENE	5/15/17	ND	UG/L	5
1,2,4-TRICHLOROBENZENE	7/8/12	ND	UG/L	5
CIS-1,2-DICHLOROETHYLENE	5/15/17	ND	UG/L	6
CIS-1,2-DICHLOROETHYLENE	7/8/12	ND	UG/L	6
DIBROMOMETHANE	5/15/17	ND	UG/L	---
DIBROMOMETHANE	7/8/12	ND	UG/L	---
1,1-DICHLOROPROPENE	5/15/17	ND	UG/L	---
1,1-DICHLOROPROPENE	7/8/12	ND	UG/L	---
1,3-DICHLOROPROPANE	5/15/17	ND	UG/L	---
1,3-DICHLOROPROPANE	7/8/12	ND	UG/L	---
1,3-DICHLOROPROPENE	5/15/17	ND	UG/L	.5
1,3-DICHLOROPROPENE	7/8/12	ND	UG/L	.5
1,2,3-TRICHLOROPROPANE	3/9/21	ND	UG/L	0.005
1,2,3-TRICHLOROPROPANE	11/8/18	ND	UG/L	0.005
1,2,3-TRICHLOROPROPANE	8/8/18	ND	UG/L	0.005
1,2,3-TRICHLOROPROPANE	5/4/18	ND	UG/L	0.005
1,2,3-TRICHLOROPROPANE	2/5/18	ND	UG/L	0.005
2,2-DICHLOROPROPANE	5/15/17	ND	UG/L	---
2,2-DICHLOROPROPANE	7/8/12	ND	UG/L	---
1,2,4-TRIMETHYLBENZENE	5/15/17	ND	UG/L	---
1,2,4-TRIMETHYLBENZENE	7/8/12	ND	UG/L	---
1,2,3-TRICHLOROBENZENE	5/15/17	ND	UG/L	---
1,2,3-TRICHLOROBENZENE	7/8/12	ND	UG/L	---
N-BUTYLBENZENE	5/15/17	ND	UG/L	---
N-BUTYLBENZENE	7/8/12	ND	UG/L	---
1,3,5-TRIMETHYLBENZENE	5/15/17	ND	UG/L	---
1,3,5-TRIMETHYLBENZENE	7/8/12	ND	UG/L	---
TERT-BUTYLBENZENE	5/15/17	ND	UG/L	---
TERT-BUTYLBENZENE	7/8/12	ND	UG/L	---
SEC-BUTYLBENZENE	5/15/17	ND	UG/L	---
SEC-BUTYLBENZENE	7/8/12	ND	UG/L	---
BROMOCHLOROMETHANE	5/15/17	ND	UG/L	---
BROMOCHLOROMETHANE	7/8/12	ND	UG/L	---
DICAMBA	8/17/20	ND	UG/L	---
DICAMBA	6/14/17	ND	UG/L	---
DICAMBA	2/3/15	ND	UG/L	---
METRIBUZIN	8/17/20	ND	UG/L	---
METRIBUZIN	6/14/17	ND	UG/L	---
METRIBUZIN	2/3/15	ND	UG/L	---

Table 1 - Water Quality Data (Well-1)

Analyte	Sample Date	Result	Unit	MCL
BENTAZON	8/17/20	ND	UG/L	18
BENTAZON	6/14/17	ND	UG/L	18
BENTAZON	2/3/15	ND	UG/L	18
MOLINATE	8/17/20	ND	UG/L	20
MOLINATE	6/14/17	ND	UG/L	20
MOLINATE	2/3/15	ND	UG/L	20
ESTRONE	5/15/17	ND	UG/L	---
ESTRONE	7/8/12	ND	UG/L	---
THIOBENCARB (BOLERO)	8/17/20	ND	UG/L	70
THIOBENCARB (BOLERO)	6/14/17	ND	UG/L	70
THIOBENCARB (BOLERO)	2/3/15	ND	UG/L	70
TRICHLOROTRIFLUOROETHANE	5/15/17	ND	UG/L	1200
TRICHLOROTRIFLUOROETHANE	7/8/12	ND	UG/L	1200
CHLOROFORM	5/15/17	ND	UG/L	---
CHLOROFORM	7/8/12	ND	UG/L	80
BROMOFORM	5/15/17	ND	UG/L	---
BROMOFORM	7/8/12	ND	UG/L	80
BROMODICHLOROMETHANE	5/15/17	ND	UG/L	---
BROMODICHLOROMETHANE	7/8/12	ND	UG/L	80
DIBROMOCHLOROMETHANE	5/15/17	ND	UG/L	---
DIBROMOCHLOROMETHANE	7/8/12	ND	UG/L	80
TTHM	5/15/17	ND	UG/L	80
TTHM	7/8/12	ND	UG/L	80
XYLENES, TOTAL	5/15/17	ND	UG/L	1750
XYLENES, TOTAL	7/8/12	ND	UG/L	1750
XYLENE, META AND PARA	5/15/17	ND	UG/L	---
XYLENE, META AND PARA	7/8/12	ND	UG/L	1750
DICHLOROMETHANE	5/15/17	ND	UG/L	5
DICHLOROMETHANE	7/8/12	ND	UG/L	5
O-CHLOROTOLUENE	5/15/17	ND	UG/L	---
O-CHLOROTOLUENE	7/8/12	ND	UG/L	---
P-CHLOROTOLUENE	5/15/17	ND	UG/L	---
P-CHLOROTOLUENE	7/8/12	ND	UG/L	---
M-DICHLOROBENZENE	5/15/17	ND	UG/L	---
M-DICHLOROBENZENE	7/8/12	ND	UG/L	---
O-DICHLOROBENZENE	5/15/17	ND	UG/L	600
O-DICHLOROBENZENE	7/8/12	ND	UG/L	600
P-DICHLOROBENZENE	5/15/17	ND	UG/L	5
P-DICHLOROBENZENE	7/8/12	ND	UG/L	5
VINYL CHLORIDE	5/15/17	ND	UG/L	.5
VINYL CHLORIDE	7/8/12	ND	UG/L	.5
1,1-DICHLOROETHYLENE	5/15/17	ND	UG/L	6
1,1-DICHLOROETHYLENE	7/8/12	ND	UG/L	6

Table 1 - Water Quality Data (Well-1)

Analyte	Sample Date	Result	Unit	MCL
1,1-DICHLOROETHANE	5/15/17	ND	UG/L	5
1,1-DICHLOROETHANE	7/8/12	ND	UG/L	5
TRANS-1,2-DICHLOROETHYLENE	5/15/17	ND	UG/L	10
TRANS-1,2-DICHLOROETHYLENE	7/8/12	ND	UG/L	10
1,2-DICHLOROETHANE	5/15/17	ND	UG/L	.5
1,2-DICHLOROETHANE	7/8/12	ND	UG/L	.5
1,1,1-TRICHLOROETHANE	5/15/17	ND	UG/L	200
1,1,1-TRICHLOROETHANE	7/8/12	ND	UG/L	200
CARBON TETRACHLORIDE	5/15/17	ND	UG/L	.5
CARBON TETRACHLORIDE	7/8/12	ND	UG/L	.5
1,2-DICHLOROPROPANE	5/15/17	ND	UG/L	5
1,2-DICHLOROPROPANE	7/8/12	ND	UG/L	5
TRICHLOROETHYLENE	5/15/17	ND	UG/L	5
TRICHLOROETHYLENE	7/8/12	ND	UG/L	5
1,1,2-TRICHLOROETHANE	5/15/17	ND	UG/L	5
1,1,2-TRICHLOROETHANE	7/8/12	ND	UG/L	5
1,1,1,2-TETRACHLOROETHANE	5/15/17	ND	UG/L	---
1,1,1,2-TETRACHLOROETHANE	7/8/12	ND	UG/L	---
TETRACHLOROETHYLENE	5/15/17	ND	UG/L	5
TETRACHLOROETHYLENE	7/8/12	ND	UG/L	5
1,1,2,2-TETRACHLOROETHANE	5/15/17	ND	UG/L	1
1,1,2,2-TETRACHLOROETHANE	7/8/12	ND	UG/L	1
CHLOROBENZENE	5/15/17	ND	UG/L	70
CHLOROBENZENE	7/8/12	ND	UG/L	70
BENZENE	5/15/17	ND	UG/L	1
BENZENE	7/8/12	ND	UG/L	1
TOLUENE	5/15/17	ND	UG/L	150
TOLUENE	7/8/12	ND	UG/L	150
ETHYLBENZENE	5/15/17	ND	UG/L	300
ETHYLBENZENE	7/8/12	ND	UG/L	300
BROMOBENZENE	5/15/17	ND	UG/L	---
BROMOBENZENE	7/8/12	ND	UG/L	---
ISOPROPYLBENZENE	5/15/17	ND	UG/L	---
ISOPROPYLBENZENE	5/15/17	ND	UG/L	---
ISOPROPYLBENZENE	7/8/12	ND	UG/L	---
ISOPROPYLBENZENE	7/8/12	ND	UG/L	---
STYRENE	5/15/17	ND	UG/L	100
STYRENE	7/8/12	ND	UG/L	100
O-XYLENE	5/15/17	ND	UG/L	---
O-XYLENE	7/8/12	ND	UG/L	1750
N-PROPYLBENZENE	5/15/17	ND	UG/L	---
N-PROPYLBENZENE	7/8/12	ND	UG/L	---
GROSS ALPHA PARTICLE ACTIVITY	3/13/16	ND	PCI/L	15

Table 1 - Water Quality Data (Well-1)

Analyte	Sample Date	Result	Unit	MCL
GROSS ALPHA PARTICLE ACTIVITY	3/21/13	3.51	PCI/L	15
TERTIARY BUTYL ALCOHOL (TBA)	5/15/17	ND	UG/L	---
TERTIARY BUTYL ALCOHOL (TBA)	7/8/12	ND	UG/L	---
ETHYL-TERT-BUTYL ETHER	5/15/17	ND	UG/L	---
ETHYL-TERT-BUTYL ETHER	7/8/12	ND	UG/L	---
TERT-AMYL-METHYL ETHER	5/15/17	ND	UG/L	---
TERT-AMYL-METHYL ETHER	7/8/12	ND	UG/L	---

Notes:

MCL = Maximum Contminant Level

Result exceeds MCL

mg/L = milligrams per Liter

pCi/L = picocuries per Liter

µg/L = micrograms per Liter

t.o.n. = threshold odor number

NTU = Nephehelometric Turbidity Units

ND = not detected

Table 2

Engineer's Opinion of Probable Costs for New Potable Water Storage and Supply System

ITEM	Quantity	Unit	Cost per Unit ($)	COST ($)
Two 5k gallon poly water tanks for potable water system	1	LS	LS	20,000
New Pressure Pump and Bladder Tanks (ASME rated)	1	LS	LS	70,000
Supply piping from new well and storage tank / pressure tanks to existing distribution system	1	LS	LS	20,000
Water flow meters at: (1) well head; (2) new potable water tank(s) outlet to School; (3) fire prevention tank inlet; and (4) irrigation water pipe	4	EA	2,000	8,000
Controls and Basic SCADA system	1	LS	LS	50,000
Permanent Backup Power - electrical battery bank	1	LS	LS	75,000
Backflow preventor	1	EA	1,500	1,500
Building for controls, pumps and pressure tanks	1	LS	LS	75,000
Concrete pad for water storage tanks	1	LS	LS	50,000
Engineering field oversight of system upgrade	1	LS	LS	25,000
Engineering & project administration (including as-built plans & completion report)	1	LS	LS	15,000
Total Cost	---	---	---	409,500

Notes

This cost estimate table includes "New Potable Water Storage and Supply System" related items common to Project Alternatives 3 and 4. As such, the total cost reflected in this cost estimate table is shown as the first line item in Table 3 (Alternative 3) and Table 4 (Alternative 4). This was done to simplify the presentation of the various cost opinion tables.

LS = Lump Sum

LF = Lineal Feet

EA = Each

HR = Hour

Table 3

Engineer's Opinion of Probable Costs for Treatment System (Alternative #3)

TREATMENT SYSTEM - ITEM	COST ($)
New Potable Water Storage and Supply System (see Table 2 for details)	409,500
Engineering design of treatment system; as built plans	60,000
Permitting	5,000
Environmental	7,500
Equipment cost and Installation of Reverse Osmosis System (to remove nitrate concentrations): Treatment train includes: raw water from well→chlorine injection→multimedia filter→greensand filter→carbon filter to remove chlorine→Reverse Osmosis→calcite filter→distribution system	100,000
New building for treatment system (that meets DSA reuirements)	75,000
New piping from well to Reverse Osmosis (RO) system; new piping from RO System to distribution system	7,500
Install tank to hold brine stream prior to off-haul for disposal at a wastewater treatment plant	20,000
Engineering oversight during treatment system installation	10,000
Admin Costs - Coordination with School, bid documents, contractor selection	20,000
Project management	25,000
Subtotal of Treatment System Construction-Related Costs	714,500
Annual Operations and Maintenance - service visits	15,000
Annual Operations and Maintenance - brine stream waste disposal (assume 2-gal filtrate per 1-gal treated clean water)	225,000
Annual Operations and Maintenance - treatment chemicals & filter replacements	5,000
20-Year Operations and Maintenance Cost	4,900,000
20-year Capital Expenditures (expect pipe & appurtenances to last 50-years)	30,000
Project administration (20-years)	75,000
Subtotal of Operations & Maintenance, Capital Expenditure, and Administration Costs (20-years)	5,005,000
Project Lifecycle (20-years)	5,719,500
Project Lifecycle (20-years) + 20% contingency	6,863,400
Additional Cost if a new well is needed in the next 20-years. Current well was constructed in 1976. Per current water system standards, each water system should have at least 2 wells.	1,548,300
Total Cost if a new well is needed in the next 20-years	7,267,800

* This cost estimate includes upgraded supply piping to the fire storage tank, but it does not include an upgrade to actual fire flow capacity, which currently includes a 35,000-gallon fire storage tank with a connection point for fire fighters to tap into.

Table 4: Analytical Data from Nearby Well (GAMA_USGS - MSSV-16) *

Located ~500' SSE of the School Well | Well Screened from 200 to 790-feet (total well depth = 800-feet)			
Sample Date	Analyte	Result	Units
9/11/14	Alkalinity as CaCO3	135	MG/L
9/11/14	Alkalinity, total	135	MG/L
9/11/14	Aluminum	< 2.2	UG/L
9/11/14	Ammonia	< 0.01	MG/L
9/11/14	Arsenic	0.81	UG/L
9/11/14	Barium	0.045	MG/L
9/14/05	Benzene	< 0.021	UG/L
9/11/14	Benzene	< 0.026	UG/L
9/11/14	Beryllium	< 0.02	UG/L
9/11/14	Boron	0.049	MG/L
9/11/14	Bromide	0.077	MG/L
9/14/05	Bromodichloromethane (THM)	< 0.12	UG/L
9/11/14	Bromodichloromethane (THM)	< 0.06	UG/L
9/14/05	Bromoform (THM)	< 0.1	UG/L
9/11/14	Bromoform (THM)	< 0.1	UG/L
9/11/14	Cadmium	0.06	UG/L
9/11/14	Calcium	56.4	MG/L
9/11/14	Chloride	25.6	MG/L
9/14/05	Chloroform (THM)	< 0.02	UG/L
9/11/14	Chloroform (THM)	< 0.03	UG/L
9/11/14	Chromium	2.4	UG/L
9/14/05	Dibromochloromethane (THM)	< 0.1	UG/L
9/11/14	Dibromochloromethane (THM)	< 0.12	UG/L
9/14/05	Dissolved Oxygen (DO)	7.7	MG/L
9/11/14	Dissolved Oxygen (DO)	8.3	MG/L
9/11/14	Fluoride	0.41	MG/L
9/11/14	Hardness	202	MG/L
9/11/14	Iron	< 4	UG/L
9/11/14	Lithium	14.2	UG/L
9/11/14	Magnesium	14.8	MG/L
9/11/14	Manganese	< 0.4	UG/L
9/11/14	Molybdenum	7.91	UG/L
9/11/14	Nickel	< 0.2	UG/L

Table 4: Analytical Data from Nearby Well (GAMA_USGS - MSSV-16) *

Located ~500' SSE of the School Well | Well Screened from 200 to 790-feet (total well depth = 800-feet)			
Sample Date	Analyte	Result	Units
9/11/14	Nitrate as N	1.59	MG/L
9/11/14	Nitrate+Nitrite	1.59	MG/L
9/11/14	Nitrite as N	< 0.001	MG/L
9/11/14	Perchlorate	0.45	UG/L
9/11/14	pH	7.5	pH UNITS
9/11/14	Potassium	2.71	MG/L
9/11/14	Selenium	1.3	UG/L
9/11/14	Silver	< 0.02	UG/L
9/11/14	Sodium	24.7	MG/L
9/11/14	Specific Conductivity	475	UMHOS/CM
9/11/14	Specific Conductivity	509	UMHOS/CM
9/11/14	Sulfate	75.7	MG/L
9/14/05	Simazine	< 0.005	UG/L
9/11/14	Simazine	< 0.006	UG/L
9/11/14	Strontium	361	UG/L
9/14/05	Styrene	< 0.042	UG/L
9/11/14	Styrene	< 0.042	UG/L
9/14/05	Sulfamethoxazole	< 0.08	UG/L
9/14/05	tebuthiuron	< 0.016	UG/L
9/11/14	tebuthiuron	< 0.028	UG/L
9/14/05	Tetrachloroethene (PCE)	< 0.03	UG/L
9/11/14	Tetrachloroethene (PCE)	< 0.026	UG/L
9/14/05	Thiabendazole	< 0.03	UG/L
9/11/14	Thiobencarb	< 0.016	UG/L
9/14/05	Toluene	< 0.02	UG/L
9/11/14	Toluene	< 0.02	UG/L
9/14/05	trans-1,2, Dichloroethylene	< 0.032	UG/L
9/11/14	trans-1,2, Dichloroethylene	< 0.018	UG/L
9/14/05	Trichloroethene (TCE)	< 0.038	UG/L
9/11/14	Trichloroethene (TCE)	< 0.022	UG/L
9/14/05	Trichlorofluoromethane (Freon 11)	< 0.08	UG/L
9/14/05	Trifluralin	< 0.009	UG/L
9/11/14	Trifluralin	< 0.018	UG/L

Table 4: Analytical Data from Nearby Well (GAMA_USGS - MSSV-16) *

Located ~500' SSE of the School Well | Well Screened from 200 to 790-feet (total well depth = 800-feet)			
Sample Date	Analyte	Result	Units
9/14/05	Trimethoprim	< 0.017	UG/L
9/14/05	Tritium	0	pCi/L
9/11/14	Tritium	R 0.26	pCi/L
9/11/14	Uranium	1.7	pCi/L
9/11/14	Uranium	1.7	pCi/L
9/14/05	Temperature	20	CELSIUS
9/11/14	Temperature	20	CELSIUS
9/11/14	Total Dissolved Solids	322	MG/L
9/11/14	Vanadium	4.4	UG/L
9/11/14	Zinc	0.0059	MG/L
9/14/05	1,1 Dichloroethylene (1,1 DCE)	< 0.024	UG/L
9/11/14	1,1 Dichloroethylene (1,1 DCE)	< 0.022	UG/L
9/14/05	1,1,1-Trichloroethane	< 0.032	UG/L
9/11/14	1,1,1-Trichloroethane	< 0.03	UG/L
9/14/05	1,1,2,2 Tetrachloroethane (PCA)	< 0.08	UG/L
9/14/05	1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	< 0.000038	MG/L
9/14/05	1,1,2-Trichloroethane	< 0.04	UG/L
9/11/14	1,1,2-Trichloroethane	< 0.046	UG/L
9/14/05	1,1-Dichloroethane (1,1 DCA)	< 0.035	UG/L
9/11/14	1,1-Dichloroethane (1,1 DCA)	< 0.044	UG/L
9/14/05	1,2 Dibromoethane (EDB)	< 0.036	UG/L
9/11/14	1,2 Dibromoethane (EDB)	< 0.004	UG/L
9/14/05	1,2 Dichlorobenzene (1,2-DCB)	< 0.048	UG/L
9/11/14	1,2 Dichlorobenzene (1,2-DCB)	< 0.028	UG/L
9/14/05	1,2 Dichloroethane (1,2 DCA)	< 0.13	UG/L
9/11/14	1,2 Dichloroethane (1,2 DCA)	< 0.08	UG/L
9/14/05	1,2 Dichloropropane (1,2 DCP)	< 0.029	UG/L
9/11/14	1,2 Dichloropropane (1,2 DCP)	< 0.004	UG/L
9/14/05	1,2,3-Trichloropropane (1,2,3 TCP)	< 0.18	UG/L
9/11/14	1,2,3-Trichloropropane (1,2,3 TCP)	< 0.006	UG/L
9/14/05	1,2,4- Trichlorobenzene (1,2,4 TCB)	< 0.12	UG/L
9/11/14	1,2,4- Trichlorobenzene (1,2,4 TCB)	< 0.08	UG/L
9/14/05	1,2-Dibromo-3-chloropropane (DBCP)	< 0.51	UG/L

Table 4: Analytical Data from Nearby Well (GAMA_USGS - MSSV-16) *

Located ~500' SSE of the School Well | Well Screened from 200 to 790-feet (total well depth = 800-feet)			
Sample Date	Analyte	Result	Units
9/11/14	1,2-Dibromo-3-chloropropane (DBCP)	< 0.02	UG/L
9/14/05	1,3 Dichloropropene	< 0.09	UG/L
9/14/05	1,3 Dichloropropene	< 0.05	UG/L
9/11/14	1,3 Dichloropropene	< 0.1	UG/L
9/11/14	1,3 Dichloropropene	< 0.14	UG/L
9/14/05	1,3-Dichlorobenzene	< 0.03	UG/L
9/14/05	1,4-Dichlorobenzene (p-DCB)	< 0.034	UG/L
9/11/14	1,4-Dichlorobenzene (p-DCB)	< 0.026	UG/L
9/11/14	1,4-Dioxane	< 0.7	UG/L
9/14/05	1,7-Dimethylxanthine	< 0.06	UG/L
9/14/05	2 Chlorotoluene	< 0.04	UG/L
9/14/05	4 Chlorotoluene	< 0.05	UG/L
9/14/05	Chlorobenzene	< 0.028	UG/L
9/11/14	Chlorobenzene	< 0.026	UG/L
9/14/05	Acetaminophen	< 0.06	UG/L
9/14/05	Alachlor	< 0.005	UG/L
9/11/14	Alachlor	< 0.008	UG/L
9/14/05	Albuterol	< 0.04	UG/L
9/14/05	Atrazine	< 0.007	UG/L
9/11/14	Atrazine	< 0.008	UG/L
9/14/05	Carbamazepine	< 0.03	UG/L
9/14/05	Carbaryl (1-naphthyl methylcarbamate)	< 0.041	UG/L
9/11/14	Carbaryl (1-naphthyl methylcarbamate)	< 0.06	UG/L
9/11/14	Carbofuran	< 0.06	UG/L
9/11/14	Carbon 14	75.92	PCT MODERN
9/14/05	Carbon Disulfide	< 0.038	UG/L
9/11/14	Carbon Disulfide	< 0.1	UG/L
9/14/05	Codeine	< 0.023	UG/L
9/14/05	Cotinine	< 0.019	UG/L
9/11/14	Cyanazine	< 0.022	UG/L
9/14/05	Cypermethrin	< 0.009	UG/L
9/11/14	Cypermethrin	< 0.02	UG/L
9/14/05	Dacthal	< 0.003	UG/L

Table 4: Analytical Data from Nearby Well (GAMA_USGS - MSSV-16) *

Located ~500' SSE of the School Well | Well Screened from 200 to 790-feet (total well depth = 800-feet)			
Sample Date	Analyte	Result	Units
9/11/14	Dacthal	< 0.0076	UG/L
9/14/05	Dehydronifedipine	< 0.04	UG/L
9/14/05	delta H2/H1	-46.2	per mil
9/11/14	delta H2/H1	-46.1	per mil
9/14/05	delta O18/O16 in water	-7.16	per mil
9/11/14	delta O18/O16 in water	-7	per mil
9/14/05	Diazinon	< 0.005	UG/L
9/11/14	Diazinon	< 0.006	UG/L
9/14/05	Dichlorodifluoromethane	< 0.00018	MG/L
9/14/05	Dichloromethane (Methylene Chloride)	< 0.06	UG/L
9/11/14	Dichloromethane (Methylene Chloride)	< 0.04	UG/L
9/14/05	Dichlorvos (DDVP)	< 0.01	UG/L
9/11/14	Dichlorvos (DDVP)	< 0.04	UG/L
9/14/05	Dieldrin	< 0.009	UG/L
9/11/14	Dieldrin	< 0.008	UG/L
9/14/05	diisopropyl ether	< 0.1	UG/L
9/14/05	Diltiazem	< 0.04	UG/L
9/14/05	Dimethoate	< 0.0061	UG/L
9/11/14	Dimethoate	< 0.01	UG/L
9/14/05	Diphenhydramine	< 0.02	UG/L
9/14/05	Carbon Tetrachloride	< 0.06	UG/L
9/11/14	Carbon Tetrachloride	< 0.06	UG/L
9/11/14	Endosulfan Sulfate	< 0.016	UG/L
9/11/14	EPTC	< 0.0056	UG/L
9/14/05	Ethylbenzene	< 0.03	UG/L
9/11/14	Ethylbenzene	< 0.036	UG/L
9/14/05	Fenamiphos	< 0.029	UG/L
9/11/14	Fenamiphos	< 0.03	UG/L
9/14/05	Fipronil	< 0.016	UG/L
9/11/14	Fipronil	< 0.018	UG/L
9/14/05	Fonofos	< 0.003	UG/L
9/11/14	Fonofos	< 0.0048	UG/L
9/14/05	Guthion (Azinphos Methyl)	< 0.05	UG/L

Table 4: Analytical Data from Nearby Well (GAMA_USGS - MSSV-16) *

Located ~500' SSE of the School Well | Well Screened from 200 to 790-feet (total well depth = 800-feet)			
Sample Date	Analyte	Result	Units
9/11/14	Guthion (Azinphos Methyl)	< 0.12	UG/L
9/14/05	Hexachlorobutadiene	< 0.14	UG/L
9/14/05	Hexazinone	< 0.013	UG/L
9/11/14	Hexazinone	< 0.012	UG/L
9/11/14	Iodide	< 1	UG/L
9/14/05	Iprodione	< 0.538	UG/L
9/11/14	Iprodione	< 0.014	UG/L
9/14/05	Isopropylbenzene (Cumene)	< 0.038	UG/L
9/14/05	Malathion	< 0.027	UG/L
9/11/14	Malathion	< 0.016	UG/L
9/14/05	Metalaxyl	< 0.005	UG/L
9/11/14	Metalaxyl	< 0.014	UG/L
9/14/05	Methyl Bromide (Bromomethane)	< 0.3	UG/L
9/11/14	Methyl Bromide (Bromomethane)	< 0.2	UG/L
9/14/05	Methyl Iodide	< 0.5	UG/L
9/14/05	Metolachlor	< 0.006	UG/L
9/11/14	Metolachlor	< 0.012	UG/L
9/14/05	Metribuzin	< 0.006	UG/L
9/11/14	Metribuzin	< 0.012	UG/L
9/11/14	Molinate	< 0.008	UG/L
9/14/05	MTBE (Methyl-tert-butyl ether)	< 0.1	UG/L
9/11/14	MTBE (Methyl-tert-butyl ether)	< 0.01	UG/L
9/14/05	Naphthalene	< 0.52	UG/L
9/11/14	Naphthalene	< 0.18	UG/L
9/14/05	n-Butylbenzene	< 0.12	UG/L
9/14/05	n-Propylbenzene (Isocumene)	< 0.042	UG/L
9/11/14	n-Propylbenzene (Isocumene)	< 0.036	UG/L
9/11/14	orthophosphate	0.015	MG/L
9/11/14	Oxyfluorfen	< 0.01	UG/L
9/14/05	Permethrin	< 0.006	UG/L
9/11/14	Permethrin	< 0.01	UG/L
9/14/05	Phorate	< 0.011	UG/L
9/11/14	Phorate	< 0.02	UG/L

Table 4: Analytical Data from Nearby Well (GAMA_USGS - MSSV-16) *

Located ~500' SSE of the School Well | Well Screened from 200 to 790-feet (total well depth = 800-feet)			
Sample Date	Analyte	Result	Units
9/11/14	Prometon	< 0.012	UG/L
9/14/05	Prometryn	< 0.005	UG/L
9/11/14	Prometryn	< 0.01	UG/L
9/11/14	Propanil	< 0.01	UG/L
9/11/14	Propargite	< 0.02	UG/L
9/14/05	sec-Butylbenzene	< 0.06	UG/L
9/11/14	sec-Butylbenzene	< 0.034	UG/L
9/14/05	Prometon	< 0.01	UG/L
9/14/05	Vinyl Chloride	< 0.08	UG/L
9/11/14	Vinyl Chloride	< 0.06	UG/L
9/14/05	Warfarin	< 0.05	UG/L
9/14/05	Xylenes (total)	< 0.038	UG/L
9/11/14	Xylenes (total)	< 0.032	UG/L

* Well Info:

GM Dataset Name = GAMA_USGS

GM Well Category = Irrigation / industrial

GM Data Source = USGS

GM Well ID = MSSV-16

GAMA Website LINK

Key

Analyte Detection & Below the Drinknig Water MCL

Analyte Detection & MCL not set for this analyte

SSE = South-Southeast

GAMA = Groundwater Ambient Monitoring & Assessment Program

USGS = United States Geological Survey

MCL = Maximum Contaminent Level

Table 5

Engineer's Opinion of Probable Costs for New Well (Alternative #4)

NEW WELL - ITEM	COST ($)
New Potable Water Storage and Supply System (see Table 2 for details)	409,500
Engineering oversight during well drilling	45,000
Permitting	5,000
Environmental	7,500
Mobilization / Demobilization	10,000
Drill boring for new well (Assume 700 feet deep)	80,000
Install well casing, filter pack, and well seal	90,000
Well development and pump test	40,000
E-log & caliper logs	25,000
Site Clean Up	5,000
Well surface completion, well pad, and well building. Well pump, controls, connection, and commissioning	100,000
Destroy existing well - using explosives	15,000
Admin Costs - Coordination with School, bid documents, contractor selection	20,000
Project management	20,000
DSA approved inspector for construction project	25,000
Subtotal of New Well Construction-Related Costs	897,000
Annual Operations and Maintenance	12,000
20-Year Operations and Maintenance Cost	240,000
20-year Capital Expenditures (expect pipe & appurtenances to last 50-years)	25,000
Project administration (20-years)	60,000
Subtotal of Operations & Maintenance, Capital Expenditure, and Administration Costs (20-years)	325,000
Project Lifecycle (20-years)	1,631,500
Project Lifecycle (20-years) + 20% contingency	1,957,800

* This cost estimate includes upgraded supply piping to the separate fire storage tank, but it does not include an upgrade to actual fire flow capacity, which currently includes a 35,000-gallon fire storage tank with a connection point for fire fighters to tap into.

Cost of a second well (if funding becomes available for it in the future) - includes 20% contingency	472,500

Table 6

Alternative Comparison Summary

Consideration	Alternative #3 Reverse Osmosis (R.O.) Nitrate Treatment System	Alternative #4 Install a New Well
Meets Regulatory Compliance	Most likely	Most likely
Meets O&M Needs	Most likely	Most likely
Financially Viable	Likely Not	Most likely
Long Term Sustainability	Likely Not	Most likely
Environmental Concerns	Minor to moderate; off-site disposal of brine stream; land disturbance to install new distribution system, treatment system, and water storage tank	Minor; land disturbance installing new well and associated piping and appurtenances
Satisfy Public Concerns	Most likely	Most likely
Water Rates	NA	NA
Other considerations	The R.O. treatment system produces a brine + concentrated nitrate waste stream that would not be suitable to flow into septic systems or the ground surface. This waste stream is very expensive to dispose of.	The is no guarantee that we could find nitrate-free water via a new well. It's possible that even with a new well, an expensive treatment system would still be needed. However, because the Besst Report directly measured nitrate levels less than the MCL in the deeper screened interval, and because a nearby, deeper well also has levels of nitrate below the MCL 'we have a good chance of a favorable outcome
Total Lifecycle Cost (20-years)	5,719,500	1,631,500
Total Cost if new well is needed within 20-years for treatment Alt #3	7,267,800	---

Notes

NA = Not Applicable

APPENDIX A

Compliance Order (No. 18-003) for Nitrate Maximum Contaminant Level Violation

COUNTY OF MONTEREY
HEALTH DEPARTMENT
Elsa Jimenez, Director of Health

Administration
Behavioral Health
Clinic Services
Emergency Medical Services
Environmental Health/Animal Services
Public Health
Public Administrator/Public Guardian

Nationally Accredited for Providing Quality Health Services

November 16, 2018

System No. 2702317

Mission School Water System
Attn: Karen Vaughan
36825 Foothill Road
Soledad, CA 93960

COMPLIANCE ORDER NO. 18-003
NITRATE MAXIMUM CONTAMINANT LEVEL VIOLATION

Enclosed is Compliance Order No. 18-003 (hereinafter "Order"), issued to the Mission School Water System (hereinafter "Mission School WS"), public water system. Please note there are legally enforceable deadlines associated with this Order.

The California Health and Safety Code (hereinafter "CHSC"), Section 116577 requires that a water system shall reimburse EHB for costs incurred in enforcement activities related to said system. Enforcement activities include preparing, issuing, and monitoring compliance with an order or citation; preparing and issuing public notification; and conducting a permit suspension or revocation hearing. Our costs, based on our current hourly rate, may be charged to the above water system for any further enforcement.

Any person who is aggrieved by a citation, order or decision issued by the Department under Article 8 (commencing with CHSC, Section 116625) or Article 9 (commencing with CHSC, Section 116650), of the Safe Drinking Water Act (CHSC, Division 104, Part 12, Chapter 4), may file a petition with the State Water Board for reconsideration of the citation, order or decision. Appendix 1 to the enclosed Citation contains the relevant statutory provisions for filing a petition for reconsideration (CHSC, Section 116701).

Petitions must be received by the State Water Board within 30 days of the issuance of the citation, order or decision by the officer or employee of the state board. The date of issuance is the date when the Department mails a copy of the citation, order or decision. If the 30th day falls on a Saturday, Sunday, or state holiday, the petition is due the following business day by 5:00 p.m.

Information regarding filing petitions may be found at:

http://www.waterboards.ca.gov/drinking_water/programs/petitions/index.shtml

If you have any questions regarding this compliance order, please contact this office at 755-4507.

Sincerely,

John Ramirez, M.P.A., R.E.H.S.
Director, Environmental Health Bureau

Enclosure: Compliance Order No.18-003

Cc: Cheryl Sandoval, EHB
Jan Sweigert, SWRCB

MONTEREY COUNTY HEALTH DEPARTMENT

Name of Public Water System: Mission School Water System

Water System No: 2702317

Attention: Karen Vaughan
36825 Foothill Road
Soledad, CA 93960

Issued: 11/16/2018

COMPLIANCE ORDER FOR NONCOMPLIANCE
CALIFORNIA CODE OF REGULATIONS, TITLE 22, SECTION 64431

NITRATE MAXIMUM CONTAMINANT LEVEL VIOLATION

The California Health and Safety Code (hereinafter "CHSC"), Section 116655 authorizes the State Water Resources Control Board (hereinafter "State Water Board"), to issue a compliance order to a public water system when the State Water Board determines that the public water system has violated or is violating the California Safe Drinking Water Act (hereinafter "California SDWA"), (CHSC, Division 104, Part 12, Chapter 4, commencing with Section 116270), or any regulation, standard, permit, or order issued or adopted thereunder.

As allowed by Section 116330 of the CHSC, the Monterey County Health Department (hereinafter "Department"), acting by and through its Local Primacy

Delegation Agreement with the State Water Board hereby issues Compliance Order No. 18-003 (hereinafter "Order") pursuant to Section 116655 of the CHSC to the Mission School Water System (hereinafter "Mission School WS"), for violation of CHSC, Section 116555(a)(1) and 116555(a)(3) and California Code of Regulations (hereinafter "CCR"), Title 22, Section 64431 Maximum Contaminant Levels (hereinafter "MCL") – Inorganic Chemicals.

A copy of the applicable statutes and regulations are included in Appendix 1, which is attached hereto and incorporated by reference.

STATEMENT OF FACTS

Mission School WS is classified as a Nontransient Noncommunity public water system that serves domestic water to a public elementary school. Mission School WS operates under Domestic Water Supply Permit No. 0207081 issued by the Department on February 7, 2008.

The Water System utilizes one well, Well 01, as its source of domestic water. Title 22, CCR, Division 4, Chapter 15, Article 4 establishes primary drinking water standards and monitoring and reporting requirements for inorganic constituents. Nontransient Noncommunity water systems must comply with the maximum contaminant (MCL) level for nitrate (as nitrogen) of 10 mg/L, as established in Title 22 CCR Section 64431. Nontransient Noncommunity water systems must provide a reliable and adequate supply of pure, wholesome, healthful, and potable water as per CHSC, section 116555(a)(3).

A sample collected from Mission School WS on October 6th, 2017 showed a nitrate (as nitrogen) concentration of 14.0 mg/L in Well 01, which exceeds the MCL of 10 mg/L as nitrogen. A cycle test was conducted by Dougherty Pump and Drilling on October 28th, 2017. The initial sample taken during the test was 11.9 mg/L as Nitrogen, which exceeds the MCL. The results of the cycle test show the high Nitrate level decreasing after five minutes of pumping. A summary of the cycle test results for Mission School WS are presented in Table 1 below.

Table 1 – Mission School WS Cycle Test Nitrate Sample Results

Sample Date	Result (mg/L)	Cycle
10/28/17	11.9	Start-Up
10/28/17	6.1	5 Minutes
10/28/17	3.8	15 Minutes
10/28/17	3.2	30 Minutes
10/28/17	2.7	60 Minutes
10/28/17	2.7	120 Minutes

A most recent sample collected on October 11th, 2018 showed a nitrate (as nitrogen) concentration of 13.0 mg/L in Well 01. A summary of the Water System's most recent Nitrate concentration exceedances are shown in Table 2 below.

Table 2 – Mission School WS Nitrate Sample Exceedances

Sample Date	Result (mg/L)	Type of Sample
10/06/2017	14.0	Routine
10/28/17	11.9	Cycle
10/11/2018	13.0	Routine

DETERMINATION

CCR, Title 22, Section 64431, Monitoring Contaminant Levels – Inorganic Chemicals states that public water systems shall comply with the primary MCLs established in table 64431-A (see Appendix 1). The MCL for nitrate is 10 mg/L.

Based on the above Statement of Facts, the Department has determined that the Mission School WS has failed to comply with primary drinking water standards pursuant to CHSC, Section 116555(a)(1) and the nitrate MCL pursuant to CCR, Title 22, Section 64431.

DIRECTIVES

To ensure that the water supplied by Mission School WS is at all times safe, wholesome, healthful, and potable, Mission School WS is hereby directed to take the following actions:

1. On or before **June 30, 2021** comply with CCR, Title 22, Section 64431.

2. Quarterly sampling for nitrate from Well 1 shall continue. Mission School WS shall ensure that the analytical results are reported to the Department electronically by the analyzing laboratory no later than the 10th day following the month in which the analysis was completed.

3. Monthly public notification to the customers of Mission School WS shall begin by **December 31, 2018** and continue monthly until the Department determines that the nitrate contamination is resolved. Public Notification shall be conducted in conformance with CCR, Title 22, Sections 64463.1

and 64465. A copy of Sections 64463.1 and 64465 is included in Appendix 1. Appendix 2: Notification Template shall be used to fulfill this Directive, unless otherwise approved by the Department.

- Public notification for new customers shall be conducted in conformance with CCR, Title 22, Section 64463(e) where Mission School WS shall give new customers a copy of the most recent public notice prior to or at any time service begins.

- Monthly public notification shall be provided every month even when a nitrate result shows a concentration below the nitrate MCL. The notice shall be updated to include the following wording:

  "Although the nitrate level(s) during the most recent monitoring period showed results below the MCL, nitrate levels in the water tend to fluctuate and it is possible that the nitrate level may increase at any time between sampling events. Public notification will continue until the nitrate problem is resolved."

4. Complete Appendix 3: Certification of Completion of Notification Form. Submit it together with a copy of the public notification conducted in compliance with Directive No. 3, to the Department within 10 days following each notification.

5. Prepare for Department approval, a Corrective Action Plan, identifying improvements to the water system designed to correct the water quality problems identified as an exceedance of the nitrate MCL and ensure that

Mission School WS delivers water to consumers that meets primary drinking water standards. The plan shall include a time schedule for completion of each of the phases of the project such as design, construction, and startup, and a date as of which Mission School WS will be in compliance with the nitrate MCL, which date shall be no later than **June 30, 2021.**

6. On or before **January 10, 2019**, submit and present in person the Corrective Action Plan required under Directive No. 5 above, to the Department's office located at 1270 Natividad Rd, Salinas, CA 93906.

7. Perform the Department approved Corrective Action Plan, and each and every element of said plan, according to the time schedule set forth therein.

8. On or before **April 10, 2019** and every three months thereafter, submit a report to the Department in the form provided as Appendix 4 showing actions taken during the previous quarter (calendar three months) to comply with the Corrective Action Plan.

9. Not later than ten (10) days following **June 30, 2021** demonstrate to the Department that the water delivered by Mission School WS complies with the nitrate MCL.

10. Notify the Department in writing no later than five (5) days prior to the deadline for performance of any Directive set forth herein if Mission School WS anticipates it will not timely meet such performance deadline.

11. On or before **January 10, 2019** complete and return to the Department the "Notification of Receipt" form attached to this Order as Appendix 5. Completion of this form confirms that Mission School WS has received this Order and understands that it contains legally enforceable directives with due dates.

All submittals required by this Order, with exception of analytical results, shall be electronically submitted to the Department at the following address. The subject line for all electronic submittals corresponding to this Order shall include the following information: Water System name and number, compliance order number and title of the document being submitted.

Cheryl Sandoval, Supervising EHS
Monterey County Health Department
Environmental Health Bureau-DWPS
1270 Natividad Rd.
Salinas, CA 93906
sandovalcl@co.monterey.ca.us

The Department reserves the right to make modifications to this Order as it may deem necessary to protect public health and safety. Such modifications may be issued as amendments to this Order and shall be effective upon issuance.

Nothing in this Order relieves Mission School WS of its obligation to meet the requirements of the California SDWA (CHSC, Division 104, Part 12, Chapter 4, commencing with Section 116270), or any regulation, standard, permit or order issued or adopted thereunder.

PARTIES BOUND

This Order shall apply to and be binding upon Mission School WS, its owners, shareholders, officers, directors, agents, employees, contractors, successors, and assignees.

SEVERABILITY

The directives of this Order are severable, and Mission School WS shall comply with each and every provision thereof notwithstanding the effectiveness of any provision.

FURTHER ENFORCEMENT ACTION

Under the Local Primacy Delegation Agreement, the California SDWA authorizes the Department to: issue a citation or order with assessment of administrative penalties to a public water system for violation or continued violation of the requirements of the California SDWA or any regulation, permit, standard, citation, or order issued or adopted thereunder including, but not limited to, failure to correct a violation identified in a citation or compliance order. The California SDWA also authorizes the Department to take action to suspend or revoke a permit that has been issued to a public water system if the public water system has violated applicable law or regulations or has failed to comply with an order of the Department, and to petition the superior court to take various enforcement measures against a public water system that has failed to comply with an order of the Department. The Department does not waive any further enforcement action by issuance of this Order.

11-16-18

John Ramirez, MPA, REHS
Director Environmental Health Bureau
1270 Natividad Rd. Salinas CA 93906

Date

Appendices:

1. Applicable Statutes and Regulations
2. Notification Template
3. Certification of Completion of Public Notification
4. Quarterly Progress Report
5. Notification of Receipt Form

Certified Mail No. 7017 2620 001 1076 0918

CC: Cheryl Sandoval, EHB
Jan Sweigert, SWRCB

APPENDIX 1. APPLICABLE STATUTES AND REGULATIONS FOR Compliance Order No. 18-003 Nitrate Maximum Contaminant Level Violation

NOTE: The following language is provided for the convenience of the recipient, and cannot be relied upon as the State of California's representation of the law. The published codes are the only official representation of the law. Regulations related to drinking water are in Titles 22 and 17 of the California Code of Regulations. Statutes related to drinking water are in the Health & Safety Code, the Water Code, and other codes.

California Health and Safety Code (CHSC):

Section 116271. Transition of CDPH duties to State Board states in relevant part:

(a) The state board succeeds to and is vested with all of the authority, duties, powers, purposes, functions, responsibilities, and jurisdiction of the State Department of Public Health, its predecessors, and its director for purposes of all of the following:

(1) The Environmental Laboratory Accreditation Act (Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101).

(2) Article 3 (commencing with Section 106875) of Chapter 4 of Part 1.

(3) Article 1 (commencing with Section 115825) of Chapter 5 of Part 10.

(4) This chapter and the Safe Drinking Water State Revolving Fund Law of 1997 (Chapter 4.5 (commencing with Section 116760)).

(5) Article 2 (commencing with Section 116800), Article 3 (commencing with Section 116825), and Article 4 (commencing with Section 116875) of Chapter 5.

(6) Chapter 7 (commencing with Section 116975).

(7) The Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Division 43 (commencing with Section 75001) of the Public Resources Code).

(8) The Water Recycling Law (Chapter 7 (commencing with Section 13500) of Division 7 of the Water Code).

(9) Chapter 7.3 (commencing with Section 13560) of Division 7 of the Water Code.

(10) The California Safe Drinking Water Bond Law of 1976 (Chapter 10.5 (commencing with Section 13850) of Division 7 of the Water Code).

(11) Wholesale Regional Water System Security and Reliability Act (Division 20.5 (commencing with Section 73500) of the Water Code).

(12) Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Division 26.5 (commencing with Section 79500) of the Water Code).

(b) The state board shall maintain a drinking water program and carry out the duties, responsibilities, and functions described in this section. Statutory reference to "department," "state department," or "director" regarding a function transferred to the state board shall refer to the state board. This section does not impair the authority of a local health officer to enforce this chapter or a county's election not to enforce this chapter, as provided in Section 116500...

(k)

(1) The state board shall appoint a deputy director who reports to the executive director to oversee the issuance and enforcement of public water system permits and other duties as appropriate. The deputy director shall have public health expertise.

(2) The deputy director is delegated the state board's authority to provide notice, approve notice content, approve emergency notification plans, and take other action pursuant to Article 5 (commencing with Section 116450), to issue, renew, reissue, revise, amend, or deny any public water system permits pursuant to Article 7 (commencing with Section 116525), to suspend or revoke any public water system permit pursuant to Article 8 (commencing with Section 116625), and to issue citations, assess penalties, or issue orders pursuant to Article 9 (commencing with Section 116650). Decisions and actions of the deputy director taken pursuant to Article 5 (commencing with Section 116450) or Article 7 (commencing with Section 116525) are deemed decisions and actions taken by the state board, but are not subject to reconsideration by the state board except as provided in Section 116540. Decisions and actions of the deputy director taken pursuant to Article 8 (commencing with Section 116625) and Article 9 (commencing with Section 116650) are deemed decisions and actions taken by the state board, but any aggrieved person may petition the state board for reconsideration of the decision or action. This subdivision is not a limitation on the state board's authority to delegate any other powers and duties.

Section 116275. Definitions states in relevant part:

(c) "Primary drinking water standards" means:

(1) Maximum levels of contaminants that, in the judgment of the state board, may have an adverse effect on the health of persons.

(2) Specific treatment techniques adopted by the state board in lieu of maximum contaminant levels pursuant to subdivision (j) of Section 116365.

(3) The monitoring and reporting requirements as specified in regulations adopted by the state board that pertain to maximum contaminant levels.

Section 116555. Operational requirements states in relevant part:

(a) Any person who owns a public water system shall ensure that the system does all of the following:

(1) Complies with primary and secondary drinking water standards.

(2) Will not be subject to backflow under normal operating conditions.

(3) Provides a reliable and adequate supply of pure, wholesome, healthful, and potable water.

Section 116577. Enforcement fee states:

(a) Each public water system shall reimburse the state board for actual costs incurred by the state board for any of the following enforcement activities related to that water system:

(1) Preparing, issuing, and monitoring compliance with, an order or a citation.

(2) Preparing and issuing public notification.

(3) Conducting a hearing pursuant to Section 116625.

(b) The state board shall submit an invoice for these enforcement costs to the public water system that requires payment before September 1 of the fiscal year following the fiscal year in which the costs were incurred. The invoice shall indicate the total hours expended, the reasons for the expenditure, and the hourly cost rate of the state board. The costs set forth in the invoice shall not exceed the total actual costs to the state board of enforcement activities specified in this section.

(c) Notwithstanding the reimbursement of enforcement costs of the local primacy agency pursuant to subdivision (a) of Section 116595 by a public water system under the jurisdiction of the local primacy agency, a public water system shall also reimburse enforcement costs, if any, incurred by the state board pursuant to this section.

(d) "Enforcement costs," as used in this section, does not include "litigation costs" pursuant to Section 116585.

(e) The state board shall not be entitled to enforcement costs pursuant to this section if a court determines that enforcement activities were in error.

(f) Payment of the invoice shall be made within 90 days of the date of the invoice. Failure to pay the invoice within 90 days shall result in a 10-percent late penalty that shall be paid in addition to the invoiced amount.

(g) The state board may, at its sole discretion, waive payment by a public water system of all or any part of the invoice or penalty.

Section 116625. Revocation and suspension of permits states:

(a) The state board, after providing notice to the permittee and opportunity for a hearing, may suspend or revoke any permit issued pursuant to this chapter if the state board determines pursuant to the hearing that the permittee is not complying with the permit, this chapter, or any regulation, standard, or order issued or adopted thereunder, or that the permittee has made a false statement or representation on any application, record, or report maintained or submitted for purposes of compliance with this chapter. If the permittee does not request a hearing within the period specified in the notice, the state board may suspend or revoke the permit without a hearing. If the permittee submits a timely request for a hearing, the hearing shall be before the state board or a member of the state board, in accordance with Section 183 of the Water Code and the rules for adjudicative proceedings adopted under Section 185 of the Water Code. If the permit at issue has been temporarily suspended pursuant to subdivision (b), the notice shall be provided within 15 days of the effective date of the temporary suspension order. The commencement of the hearing under this subdivision shall be as soon as practicable, but no later than 60 days after the effective date of the temporary suspension order, unless the state board grants an extension of the 60 day period upon request of the permittee.

(b) The state board may temporarily suspend any permit issued pursuant to this chapter before any hearing when the action is necessary to prevent an imminent or substantial danger to health. The state board shall notify the permittee of the temporary suspension and the effective date of the temporary suspension and, at the same time, notify the permittee that a hearing has been scheduled. The hearing shall be held as soon as possible, but not later than 15 days after the effective date of the temporary suspension unless the state board grants an extension of the 15 day period upon request of the permittee, and shall deal only with the issue of whether the temporary suspension shall remain in place pending a hearing under subdivision (a). The hearing shall be conducted under the rules for adjudicative proceedings adopted by the state board under Section 185 of the Water Code. The temporary suspension shall remain in effect until the hearing under this subdivision is completed and the state board has made a final determination on the temporary suspension, which shall be made within 15 days after the completion of the hearing unless the state board grants an extension of the 15 day period upon request of the permittee. If the determination is not transmitted within 15 days after the hearing is completed, or any extension of this period requested by the permittee, the temporary suspension shall be of no further effect. Dissolution of the temporary suspension does not deprive the state board of jurisdiction to proceed with a hearing on the merits under subdivision (a).

Section 116650. Citations states:

(a) If the state board determines that a public water system is in violation of this chapter or any regulation, permit, standard, citation, or order issued or adopted thereunder, the state board may issue a citation to the public water system. The citation shall be served upon the public water system personally or by certified mail. Service shall be deemed effective as of the date of personal service or the date of receipt of the certified mail. If a person to whom

a citation is directed refuses to accept delivery of the certified mail, the date of service shall be deemed to be the date of mailing.

(b) Each citation shall be in writing and shall describe the nature of the violation or violations, including a reference to the statutory provision, standard, order, citation, permit, or regulation alleged to have been violated.

(c) A citation may specify a date for elimination or correction of the condition constituting the violation.

(d) A citation may include the assessment of a penalty as specified in subdivision (e).

(e) The state board may assess a penalty in an amount not to exceed one thousand dollars ($1,000) per day for each day that a violation occurred, and for each day that a violation continues to occur. A separate penalty may be assessed for each violation and shall be in addition to any liability or penalty imposed under any other law.

Section 116655. Orders states:

(a) Whenever the state board determines that any person has violated or is violating this chapter, or any order, permit, regulation, or standard issued or adopted pursuant to this chapter, the state board may issue an order doing any of the following:

(1) Directing compliance forthwith.

(2) Directing compliance in accordance with a time schedule set by the state board.

(3) Directing that appropriate preventive action be taken in the case of a threatened violation.

(b) An order issued pursuant to this section may include, but shall not be limited to, any or all of the following requirements:

(1) That the existing plant, works, or system be repaired, altered, or added to.

(2) That purification or treatment works be installed.

(3) That the source of the water supply be changed.

(4) That no additional service connection be made to the system.

(5) That the water supply, the plant, or the system be monitored.

(6) That a report on the condition and operation of the plant, works, system, or water supply be submitted to the state board.

Section 116701. Petitions to Orders and Decisions states:

(a)

(1) Within 30 days of issuance of an order or decision under authority delegated to an officer or employee of the state board under Article 8 (commencing with Section 116625) or Article 9 (commencing with Section 116650), an aggrieved person may petition the state board for reconsideration.

(2) Within 30 days of issuance of an order or decision under authority delegated to an officer or employee of the state board under Section 116540, the applicant may petition the state board for reconsideration.

(3) Within 30 days of final action by an officer or employee of the state board acting under delegated authority, the owner of a laboratory that was the subject of the final action may petition the state board for reconsideration of any of the following actions:

(A) Denial of an application for certification or accreditation under Section 100855.

(B) Issuance of an order directing compliance under Section 100875.

(C) Issuance of a citation under Section 100880.

(D) Assessment of a penalty under subdivision (e) of Section 100880.

(b) The petition shall include the name and address of the petitioner, a copy of the order or decision for which the petitioner seeks reconsideration, identification of the reason the petitioner alleges the issuance of the order was inappropriate or improper, the specific action the petitioner requests, and other information as the state board may prescribe. The petition shall be accompanied by a statement of points and authorities of the legal issues raised by the petition.

(c) The evidence before the state board shall consist of the record before the officer or employee who issued the order or decision and any other relevant evidence that, in the judgment of the state board, should be considered to implement the policies of this chapter. The state board may, in its discretion, hold a hearing for receipt of additional evidence.

(d) The state board may refuse to reconsider the order or decision if the petition fails to raise substantial issues that are appropriate for review, may deny the petition upon a determination that the issuance of the order or decision was appropriate and proper, may set aside or modify the order or decision, or take other appropriate action. The state board's action pursuant to this subdivision shall constitute the state board's completion of its reconsideration.

(e) The state board, upon notice and hearing, if a hearing is held, may stay in whole or in part the effect of the order or decision subject to the petition for reconsideration.

(f) If an order or decision is subject to reconsideration under this section, the filing of a petition for reconsideration is an administrative remedy that must be exhausted before filing a petition for writ of mandate under Section 100920.5 or 116700.

Section 116330. Local primacy delegation.

(a) The department may delegate primary responsibility for the administration and enforcement of this chapter within a county to a local health officer authorized by the board of supervisors to assume these duties, by means of a local primacy delegation agreement if the local health officer demonstrates that it has the capability to meet the local primacy program requirements established by the department pursuant to subdivision (h) of Section 116375. This

delegation shall not include the regulation of community water systems serving 200 or more service connections. The local primacy agreement may contain terms and conditions that the department deems necessary to carry out this chapter. The local primacy agreement shall provide that, although the local primacy agency shall be primarily responsible for administration and enforcement of this chapter for the designated water systems, the department does not thereby relinquish its authority, but rather shall retain jurisdiction to administer and enforce this chapter for the designated water systems to the extent determined necessary by the department.

California Code of Regulations (CCR), Title 22:

Section 64431. Maximum Contaminant Levels--Inorganic Chemicals states:

Public water systems shall comply with the primary MCLs in table 64431-A as specified in this article.

Table 64431-A
Maximum Contaminant Levels
Inorganic Chemicals

Chemical	*Maximum Contaminant Level, mg/L*
Aluminum	1.
Antimony	0.006
Arsenic	0.010
Asbestos	7 MFL*
Barium	1.
Beryllium	0.004
Cadmium	0.005
Chromium	0.05
Cyanide	0.15
Fluoride	2.0
Mercury	0.002
Nickel	0.1
Nitrate (as nitrogen)	10.
Nitrate+Nitrite (sum as nitrogen)	10.
Nitrite (as nitrogen)	1.
Perchlorate	0.006
Selenium	0.05
Thallium	0.002

* MFL=million fibers per liter; MCL for fibers exceeding 10 µm in length.

Section 64432. Monitoring and Compliance--Inorganic Chemicals states:

(a) All public water systems shall monitor to determine compliance with the nitrate and nitrite MCLs in table 64431-A, pursuant to subsections (d) through (f) and Section 64432.1. All community and nontransient-noncommunity water systems shall monitor to determine compliance with the perchlorate MCL, pursuant to subsections (d), (e), and (l), and section 64432.3. All community and nontransient-noncommunity water systems shall also monitor to determine compliance with the other MCLs in table 64431-A, pursuant to subsections (b) through (n) and, for asbestos, section 64432.2. Monitoring shall be conducted in the year designated by the State Board of each compliance period beginning with the compliance period starting January 1, 1993.

(b) Unless directed otherwise by the State Board, each community and nontransient-noncommunity water system shall initiate monitoring for an inorganic chemical within six months following the effective date of the regulation establishing the MCL for the chemical and the addition of the chemical to table 64431-A. If otherwise performed in accordance with this section, groundwater monitoring for an inorganic chemical performed no more than two years prior to the effective date of the regulation establishing the MCL may be used to satisfy the requirement for initiating monitoring within six months following such effective date.

(c) Unless more frequent monitoring is required pursuant to this Chapter, the frequency of monitoring for the inorganic chemicals listed in table 64431-A, except for asbestos, nitrate/nitrite, and perchlorate, shall be as follows:

(1) Each compliance period, all community and nontransient-noncommunity systems using groundwater shall monitor once during the year designated by the State Board. The State Board will designate the year based on historical monitoring frequency and laboratory capacity. All community and nontransient-noncommunity systems using approved surface water shall monitor annually. All systems monitoring at distribution entry points which have combined surface and groundwater sources shall monitor annually.

(2) Quarterly samples shall be collected and analyzed for any chemical if analyses of such samples indicate a continuous or persistent trend toward higher levels of that chemical, based on an evaluation of previous data.

(d) For the purposes of sections 64432, 64432.1, 64432.2, and 64432.3, detection shall be defined by the detection limits for purposes of reporting (DLRs) in table 64432-A.

Table 64432-A
Detection Limits for Purposes of Reporting (DLRs) for Regulated Inorganic Chemicals

Chemical	*Detection Limit for Purposes of Reporting (DLR) (mg/L)*
Aluminum	0.05
Antimony	0.006
Arsenic	0.002
Asbestos	0.2 MFL>10um*
Barium	0.1
Beryllium	0.001
Cadmium	0.001
Chromium	0.01
Cyanide	0.1
Fluoride	0.1
Mercury	0.001
Nickel	0.01
Nitrate (as nitrogen)	0.4
Nitrite (as nitrogen)	0.4
Perchlorate	0.004
Selenium	0.005
Thallium	0.001

* MFL=million fibers per liter; DLR for fibers exceeding 10 um in length.

(e) Samples shall be collected from each water source or a supplier may collect a minimum of one sample at every entry point to the distribution system which is representative of each source after treatment. The system shall collect each sample at the same sampling site, unless a change is approved by the State Board.

(f) A water system may request approval from the State Board to composite samples from up to five sampling sites, provided that the number of sites to be composited is less than the ratio of the MCL to the DLR. Approval will be based on a review of three years of historical data, well construction and aquifer information for groundwater, and intake location, similarity of sources, and watershed characteristics for surface water. Compositing shall be done in the laboratory.

(1) Systems serving more than 3,300 persons shall composite only from sampling sites within a single system. Systems serving 3,300 persons or less may composite among different systems up to the 5-sample limit.

(2) If any inorganic chemical is detected in the composite sample at a level equal to or greater than one fifth of the MCL, a follow-up sample shall be analyzed within 14 days from each sampling site included in the composite for the contaminants which exceeded the one-fifth-MCL level. If available, duplicates of the original sample taken from each sampling site used in the composite may be used instead of resampling; the analytical results shall be reported within 14 days. The water supplier may collect up to two additional samples each from one or more of the sources to confirm the result(s).

(3) Compliance for each site shall be determined on the basis of the individual follow-up samples, or on the average of the follow-up and confirmation sample(s) if the supplier collects confirmation sample(s) for each detection.

(g) If the level of any inorganic chemical, except for nitrate, nitrite, nitrate plus nitrite, or perchlorate, exceeds the MCL, the water supplier shall do one of the following:

(1) Inform the State Board within 48 hours and monitor quarterly beginning in the next quarter after the exceedance occurred; or

(2) Inform the State Board within seven days from the receipt of the analysis and, as confirmation, collect one additional sample within 14 days from receipt of the analysis. If the average of the two samples collected exceeds the MCL, this information shall be reported to the State Board within 48 hours and the water supplier shall monitor quarterly beginning in the next quarter after the exceedance occurred.

(h) If the concentration of an inorganic chemical exceeds ten times the MCL, within 48 hours of receipt of the result the water supplier shall notify the State Board and resample as confirmation. The water supplier shall notify the State Board of the result(s) of the confirmation sample(s) within 24 hours of receipt of the confirmation result(s).

(1) If the average concentration of the original and confirmation sample(s) is less than or equal to ten times the MCL, the water supplier shall monitor quarterly beginning in the quarter following the quarter in which the exceedance occurred.

(2) If the average concentration of the original and confirmation sample(s) exceeds ten times the MCL, the water supplier shall, if directed by the State Board;

(A) Immediately discontinue use of the contaminated water source; and

(B) Not return the source to service without written approval from the State Board.

(i) Compliance with the MCLs shall be determined by a running annual average; if any one sample would cause the annual average to exceed the MCL, the system is immediately in violation. If a system takes more than one sample in a quarter, the average of all the results for that quarter shall be used when calculating the running annual average. If a system fails to complete four consecutive quarters of monitoring, the running annual average shall be based on an average of the available data.

(j) If a system using groundwater has collected a minimum of two quarterly samples or a system using approved surface water has collected a minimum of four quarterly samples and the sample results have been below the MCL, the system may apply to the State Board for a reduction in monitoring frequency.

(k) Water quality data collected prior to January 1, 1990, and/or data collected in a manner inconsistent with this section shall not be used in the determination of compliance with the monitoring requirements for inorganic chemicals.

(l) Water quality data collected in compliance with the monitoring requirements of this section by a wholesaler providing water to a public water system shall be acceptable for use by that system for compliance with the monitoring requirements of this section.

(m) A water system may apply to the State Board for a waiver from the monitoring frequencies specified in subsection (c)(1), if the system has conducted at least three rounds of monitoring (three periods for groundwater sources or three years for approved surface water sources) and all previous analytical results are less than the MCL. The water system shall specify the basis for its request. If granted a waiver, a system shall collect a minimum of one sample per source while the waiver is in effect and the term of the waiver shall not exceed one compliance cycle (i.e., nine years).

(n) A water system may be eligible for a waiver from the monitoring frequencies for cyanide specified in subsection (c)(1) without any prior monitoring if it is able to document that it is not vulnerable to cyanide contamination pursuant to the requirements in §64445(d)(1) or (d)(2).

(o) Transient-noncommunity water systems shall monitor for the inorganic chemicals in table 64431-A as follows:

(1) All sources shall be monitored at least once for fluoride; and

(2) Surface water sources for parks and other facilities with an average daily population use of more than 1,000 people and/or which are determined to be subject to potential contamination based on a sanitary survey shall be monitored at the same frequency as community water systems.

Section 64432.1. Monitoring and Compliance--Nitrate and Nitrite states:

(a) To determine compliance with the MCL for nitrate in Table 64431-A, all public water systems using groundwater and transient-noncommunity systems using approved surface water shall monitor annually, and all community and nontransient-noncommunity systems using approved surface water shall monitor quarterly.

(1) The water supplier shall require the laboratory to notify the supplier within 24 hours whenever the level of nitrate in a single sample exceeds the MCL, and shall ensure that a contact person is available to receive such analytical results 24-hours a day. The water supplier shall also require the laboratory to immediately notify the State Board of any acute nitrate MCL exceedance if the laboratory cannot make direct contact with the designated contact person within 24 hours. Within 24 hours of notification, the water supplier shall:

(A) Collect another sample, and

(B) Analyze the new sample; if the average of the two nitrate sample results exceeds the MCL, report the result to the State Board within 24 hours. If the average does not exceed the MCL, inform the State Board of the results within seven days from the receipt of the original analysis.

(C) If a system is unable to resample within 24 hours, it shall notify the consumers by issuing a Tier 1 Public Notice pursuant to section 64463.1 and shall collect and analyze a confirmation sample within two weeks of notification of the results of the first sample.

(2) For public water systems using groundwater, the repeat monitoring frequency shall be quarterly for at least one year following any one sample in which the concentration is greater than or equal to 50 percent of the MCL. After four consecutive quarterly samples are less than the MCL, a system may request that the State Board reduce monitoring frequency to annual sampling.

(3) For public water systems using approved surface water, the repeat monitoring frequency shall be quarterly following any one sample in which the concentration is greater than or equal to 50 percent of the MCL. After four consecutive quarterly samples are less than 50 percent of the MCL, a system may request that the State Board reduce monitoring frequency to annual sampling. A system using approved surface water shall return to quarterly monitoring if any one sample is greater than or equal to 50 percent of the MCL.

(4) After any round of quarterly sampling is completed, each community and nontransient-noncommunity system which initiates annual monitoring shall take subsequent samples during the quarter which previously resulted in the highest analytical results.

(b) All public water systems shall monitor to determine compliance with the MCL for nitrite in Table 64431-A, by taking one sample at each sampling site during the compliance period beginning January 1, 1993.

(1) If the level of nitrite in a single sample is greater than the MCL, the water supplier shall proceed as for nitrate in accordance with paragraph (a)(1) of this section.

(2) The repeat monitoring frequency for systems with an analytical result for nitrite that is greater than or equal to 50 percent of the MCL shall be quarterly monitoring for at least one year. After four consecutive quarterly samples are less than the MCL, a system may request that the State Board reduce monitoring frequency to annual sampling, collecting subsequent samples during the quarter which previously resulted in the highest analytical results.

(3) The repeat monitoring frequency for systems with an analytical result for nitrite that is less than 50 percent of the MCL shall be one sample during each compliance period (every three years).

(c) All public water systems shall determine compliance with the MCL for nitrate plus nitrite in Table 64431-A. If the level exceeds the MCL, the water supplier shall proceed as for nitrate in accordance with paragraphs (a)(1) through (a)(4) of this section.

Section 64463. General Public Notification Requirements states:

(a) Each public (community, nontransient-noncommunity and transient-noncommunity) water system shall give public notice to persons served by the water system pursuant to this article.

(b) Each water system required to give public notice shall submit the notice to the State Board, in English, for approval prior to distribution or posting, unless otherwise directed by the State Board.

(c) Each wholesaler shall give public notice to the owner or operator of each of its retailer systems. A retailer is responsible for providing public notice to the persons it serves. If the retailer arranges for the wholesaler to provide the notification, the retailer shall notify the State Board prior to the notice being given.

(d) Each water system that has a violation of any of the regulatory requirements specified in section 64463.1(a), 64463.4(a), or 64463.7(a) in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system may limit distribution of the notice to only persons served by that portion of the system that is out of compliance, if the State Board has granted written approval on the basis of a review of the water system and the data leading to the violation or occurrence for which notice is being given.

(e) Each water system shall give new customers public notice of any acute violation as specified in section 64463.1(a) that occurred within the previous thirty days, any continuing violation, the existence of a variance or exemption, and/or any other ongoing occurrence that the State Board has determined poses a potential risk of adverse effects on human health [based on a review of estimated exposures and toxicological data associated with the contaminant(s)] and requires a public notice. Notice to new customers shall be given as follows:

(1) Community water systems shall give a copy of the most recent public notice prior to or at the time service begins; and

(2) Noncommunity water systems shall post the most recent public notice in conspicuous locations for as long as the violation, variance, exemption, or other occurrence continues.

Section 64463.1. Tier 1 Public Notice states:

(a) A water system shall give public notice pursuant to this section and section 64465 if any of the following occurs:

(1) Violation of the total coliform MCL when:

(A) Fecal coliform or E. coli are present in the distribution system; or

(B) When any repeat sample tests positive for coliform and the water system fails to test for fecal coliforms or E. coli in the repeat sample;...

(b) As soon as possible within 24 hours after learning of any of the violations in subsection (a) or being notified by the State Board that it has determined there is a potential for adverse effects on human health [pursuant to paragraph (a)(4), (5), or (6)], the water system shall:

(1) Give public notice pursuant to this section;

(2) Initiate consultation with the State Board within the same timeframe; and

(3) Comply with any additional public notice requirements that are determined by the consultation to be necessary to protect public health.

(c) A water system shall deliver the public notice in a manner designed to reach residential, transient, and nontransient users of the water system and shall use, as a minimum, one of the following forms:

(1) Radio or television;

(2) Posting in conspicuous locations throughout the area served by the water system;

(3) Hand delivery to persons served by the water system; or

(4) Other method approved by the State Board, based on the method's ability to inform water system users.

Section 64463.4. Tier 2 Public Notice states:

(a) A water system shall give public notice pursuant to this section if any of the following occurs:

(1) Any violation of the MCL, MRDL, and treatment technique requirements, except:

(A) Where a Tier 1 public notice is required under section 64463.1; or

(B) Where the State Board determines that a Tier 1 public notice is required, based on potential health impacts and persistence of the violations;

(2) All violations of the monitoring and testing procedure requirements in sections 64421 through 64426.1, article 3 (Primary Standards – Bacteriological Quality), for which the State Board

determines that a Tier 2 rather than a Tier 3 public notice is required, based on potential health impacts and persistence of the violations;

(3) Other violations of the monitoring and testing procedure requirements in this chapter, and chapters 15.5, 17 and 17.5, for which the State Board determines that a Tier 2 rather than a Tier 3 public notice is required, based on potential health impacts and persistence of the violations; or

(4) Failure to comply with the terms and conditions of any variance or exemption in place.

(b) A water system shall give the notice as soon as possible within 30 days after it learns of a violation or occurrence specified in subsection (a), except that the water system may request an extension of up to 60 days for providing the notice. This extension would be subject to the State Board's written approval based on the violation or occurrence having been resolved and the State Board's determination that public health and welfare would in no way be adversely affected. In addition, the water system shall:

(1) Maintain posted notices in place for as long as the violation or occurrence continues, but in no case less than seven days;

(2) Repeat the notice every three months as long as the violation or occurrence continues. Subject to the State Board's written approval based on its determination that public health would in no way be adversely affected, the water system may be allowed to notice less frequently but in no case less than once per year. No allowance for reduced frequency of notice shall be given in the case of a total coliform MCL violation or violation of a Chapter 17 treatment technique requirement; and

(3) For turbidity violations pursuant to sections 64652.5(c)(2) and 64653(c), (d) and (f), as applicable, a water system shall consult with the State Board as soon as possible within 24 hours after the water system learns of the violation to determine whether a Tier 1 public notice is required. If consultation does not take place within 24 hours, the water system shall give Tier 1 public notice within 48 hours after learning of the violation.

(c) A water system shall deliver the notice, in a manner designed to reach persons served, within the required time period as follows:

(1) Unless otherwise directed by the State Board in writing based on its assessment of the violation or occurrence and the potential for adverse effects on public health and welfare, community water systems shall give public notice by;

(A) Mail or direct delivery to each customer receiving a bill including those that provide their drinking water to others (e.g., schools or school systems, apartment building owners, or large private employers), and other service connections to which water is delivered by the water system; and

(B) Use of one or more of the following methods to reach persons not likely to be reached by a mailing or direct delivery (renters, university students, nursing home patients, prison inmates, etc.):

1. Publication in a local newspaper;
2. Posting in conspicuous public places served by the water system, or on the Internet; or
3. Delivery to community organizations.

(2) Unless otherwise directed by the State Board in writing based on its assessment of the violation or occurrence and the potential for adverse effects on public health and welfare, noncommunity water systems shall give the public notice by:

(A) Posting in conspicuous locations throughout the area served by the water system; and

(B) Using one or more of the following methods to reach persons not likely to be reached by a public posting:

1. Publication in a local newspaper or newsletter distributed to customers;
2. E-mail message to employees or students;
3. Posting on the Internet or intranet; or
4. Direct delivery to each customer.

Section 64465. Public Notice Content and Format states:

(a) Each public notice given pursuant to this article, except Tier 3 public notices for variances and exemptions pursuant to subsection (b), shall contain the following:

(1) A description of the violation or occurrence, including the contaminant(s) of concern, and (as applicable) the contaminant level(s);

(2) The date(s) of the violation or occurrence;

(3) Any potential adverse health effects from the violation or occurrence, including the appropriate standard health effects language from appendices 64465-A through G;

(4) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in drinking water;

(5) Whether alternative water supplies should be used;

(6) What actions consumers should take, including when they should seek medical help, if known;

(7) What the water system is doing to correct the violation or occurrence;

(8) When the water system expects to return to compliance or resolve the occurrence;

(9) The name, business address, and phone number of the water system owner, operator, or designee of the water system as a source of additional information concerning the public notice;
(10) A statement to encourage the public notice recipient to distribute the public notice to other persons served, using the following standard language: —Please share this information with all the other people who drink this water, especially those who may not have received this public notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this public notice in a public place or distributing copies by hand or mail; and
(11) For a water system with a monitoring and testing procedure violation, this language shall be included: "We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period dates], we ['did not monitor or test' or 'did not complete all monitoring or testing'] for [contaminant(s)], and therefore, cannot be sure of the quality of your drinking water during that time."

(b) A Tier 3 public notice for a water system operating under a variance or exemption shall include the elements in this subsection. If a water system has violated its variance or exemption conditions, the public notice shall also include the elements in subsection (a).

(1) An explanation of the reasons for the variance or exemption;
(2) The date on which the variance or exemption was issued;
(3) A brief status report on the steps the water system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and
(4) A notice of any opportunity for public input in the review of the variance or exemption.

(c) A public water system providing notice pursuant to this article shall comply with the following multilingual-related requirements:

(1) For a Tier 1 public notice:
(A) The notice shall be provided in English, Spanish, and the language spoken by any non-English-speaking group exceeding 10 percent of the persons served by the public water system, and the notice shall include a telephone number or address where such individuals may contact the public water system for assistance; and
(B) If any non-English-speaking group exceeds 1,000 persons served by the public water system, but does not exceed 10 percent served, the notice shall include information in the appropriate language(s) regarding the importance of the notice, and the telephone number or address where such individuals may contact the public water system to obtain a translated copy of the notice from the public water system or assistance in the appropriate language;
(2) For a Tier 2 or Tier 3 public notice:
(A) The notice shall contain information in Spanish regarding the importance of the notice, or contain a telephone number or address where Spanish-speaking residents may contact the public water system to obtain a translated copy of the notice or assistance in Spanish; and
(B) When a non-English speaking group other than Spanish-speaking exceeds 1,000 residents or 10 percent of the residents served by the public water system, the notice shall include:
1. Information in the appropriate language(s) regarding the importance of the notice; or
2. A telephone number or address where such residents may contact the public water system to obtain a translated copy of the notice or assistance in the appropriate language; and
(3) For a public water system subject to the Dymally-Alatorre Bilingual Services Act, Chapter 17.5, Division 7, of the Government Code (commencing with section 7290), meeting the requirements of this Article may not ensure compliance with the Dymally-Alatorre Bilingual Services Act.

(d) Each public notice given pursuant to this article shall:
(1) Be displayed such that it catches people's attention when printed or posted and be formatted in such a way that the message in the public notice can be understood at the eighth-grade level;
(2) Not contain technical language beyond an eighth-grade level or print smaller than 12 point; and
(3) Not contain language that minimizes or contradicts the information being given in the public notice.

Appendix 64465-D. Health Effects Language - Inorganic Contaminants.

Contaminant	*Health Effects Language*
Nitrate	Infants below the age of six months who drink water containing nitrate in excess of the MCL may quickly become seriously ill and, if untreated, may die because high nitrate levels can interfere with the capacity of the infant's blood to carry oxygen. Symptoms include shortness of breath and blueness of the skin. High nitrate levels may also affect the oxygen-carrying ability of the blood of pregnant women.

Nitrite	Infants below the age of six months who drink water containing nitrite in excess of the MCL may become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blueness of the skin.

Section 64469. Reporting Requirements states:

(a) Analytical results of all sample analyses completed in a calendar month shall be reported to the State Board no later than the tenth day of the following month.

(b) Analytical results of all sample analyses completed by water wholesalers in a calendar month shall be reported to retail customers and the State Board no later than the tenth day of the following month.

(c) Analytical results shall be reported to the State Board electronically using the Electronic Deliverable Format as defined in The Electronic Deliverable Format [EDF] Version 1.2i Guidelines & Restrictions dated April 2001 and Data Dictionary dated April 2001.

(d) Within 10 days of giving initial or repeat public notice pursuant to Article 18 of this Chapter, except for notice given under section 64463.7(d), each water system shall submit a certification to the State Board that it has done so, along with a representative copy of each type of public notice given.

Section 64481. Content of the Consumer Confidence Report states in relevant part:

(g) For the year covered by the report, the Consumer Confidence Report shall note any violations of paragraphs (1) through (7) and give related information, including any potential adverse health effects, and the steps the system has taken to correct the violation.

(1) Monitoring and reporting of compliance data.

APPENDIX 2. NOTIFICATION TEMPLATE

Mission School Water System

Este informe contiene información muy importante sobre su agua potable.
Por favor hable con alguien que lo pueda tradúcir.

SUBJECT: Nitrate Maximum Contaminant Level Violation DATE:_____

Chemical analyses indicate that the Nitrate content in the water supplied to you exceeds the maximum contaminant level (MCL) of set by the State and Federal Drinking Water Regulations. The MCL is now expressed as 10 mg/l nitrate-nitrogen (NO3-N).

Most Recent Nitrate Level - _____

Water containing nitrates in excess of 10 mg/l as nitrogen presents a risk to the health of humans when used for drinking or culinary purposes. Pregnant woman and children under the age of 6 months run the greatest risk of experiencing possible health problems, i.e. "Blue Baby Syndrome". The presence of nitrates in the blood reduces its oxygen-carrying capacity. Accordingly, you are advised not to use water from this system in the preparation of food, juices or baby formulas. Be advised that boiling the water will not eliminate the problem but rather increases the concentration of nitrate.

Pregnant women are also at risk of developing the symptoms of methemoglobinemia due to the presence of nitrate in their drinking water. During pregnancy, it is common for methemoglobin levels to increase from the normal range (0.5 to 2.5% of the total hemoglobin) to a maximum of 10% in the 30th week of pregnancy, and then decline to normal levels after delivery. Therefore, pregnant women are particularly susceptible to methemoglobinemia and should be sure that their drinking water does not exceed safe levels for nitrate. There is, however, no clear evidence that nitrate can be transmitted to the fetus from the pregnant woman.

ALTHOUGH A HEALTH HAZARD HAS BEEN CONFIRMED ONLY FOR INFANTS YOUNGER THAN 6 MONTHS AND FOR PREGNANT WOMEN, **WE ARE REQUIRING THE USE OF BOTTLED WATER OR WATER FROM AN APPROVED SOURCE FOR DRINKING OR COOKING PURPOSES FOR ALL PERSONS ON THE SYSTEM**. CARE SHOULD BE TAKEN IN HANDLING AND TRANSPORTING WATER TO PREVENT BACTERIOLOGICAL CONTAMINATION.

ACTION BEING TAKEN TO CORRECT VIOLATION:_____

_____

We anticipate resolving the problem within: _____

FOR FURTHER INFORMATION, CONTACT: _____
NAME CONTACT PERSON/PHONE NUMBER

SCHOOLS, OWNER OR OPERATOR OF RESIDENTIAL RENTAL PROPERTY, OR OWNER OR OPERATOR OF BUSINESS PROPERTY: Section 116450 of the California Health and Safety Code requires the following notification: schools or school systems shall notify school employees, students, and parents if students are minors; owner or operator of residential rental property shall notify tenants; and owner or operator of business property shall notify employees. This notice shall be given within 10 days upon receipt of this notification.
Additionally, if a property owner sells property served by this water system, the seller is responsible for ensuring the buyers are informed of the current water quality and precautions to be taken
THIS NOTICE IS TO REMAIN IN EFFECT UNTIL PROBLEM IS RESOLVED AND HEALTH DEPARTMENT GIVES CLEARANCE

IMPORTANTE !

Un aviso importante requerido por el departamento de la salud del condado del Monterey
Nombre del Sistema de Agua: **Mission School WS I.D. No. 270-2317**
Fecha: _____

El análisis reciente de químicos indica que el contenido de Nitrato en el agua que se le provee excede el nivel máximo de (MCL) de 10 mg/l nitrato-nitrógeno establecido por las Regulaciones Estatales y Federales del Agua Potable. El MCL es 10 mg/l nitrato-nitrógeno (NO3-N)

Reciente Nivel de Nitrato NO3-N = _____

Agua que contiene nitratos en exceso de 10 mg/l presenta peligro a la salúd de humanos cuando se usa para beber o cocinar. Niños menos de 6 meses corren el riesgo de problemas de salúd como el "Síndrome de Bebé Azul." La presencia de nitratos en la sangre reduce la capacidád de circulación de oxigeno en el cuerpo. **Por consiguiente, se le avisa que no use la agua de éste sistema en la preparación de comida, jugos o formula para bebés.** Se le avisa también, que hirviendo esta agua no elimina el problema, más bien aumenta la concentración de nitratos.

Las mujeres embarazadas también corren el riesgo de desarrollar los síntomas del metamoglobinemia debido a la presencia del nitrato en su agua potable. Durante el embarazo, es común que los niveles de metamoglobina del nivel normal (0.5 a 2.5% de la hemoglobina total) a un máximo de 10% en la treintava semana del embarazo, y vuelven a niveles normales después del parto. Por lo tanto, las mujeres embarazadas son susceptibles al metamoglobinemia y deben asegurarse que su agua potable no exceda los niveles seguros del nitrato. Sin embargo, no hay evidencia clara que indique que el nitrato pueda transmitirse al feto de la mujer embarazada.

AUNQUE SE HA CONFIRMADO QUE SOLO ES PELIGRO PARA BEBES MENORES DE SEIS (6) MESES DE EDAD Y PARA MUJERES EMBARAZADAS, NOSOTROS REQUERIMOS QUE USTED Y TODAS LAS PERSONAS EN ESTE SISTEMA USEN **AGUA EMBOTELLADA** O AGUA DE UNA ORIGEN APROBADA PARA TOMAR O COCINAR. TENGA CUIDADO CUNADO TRANSPORTANDO AGUA PARA PREVENIR CONTAMINACIÓN BACTERIOLÓGICO.

El sistema de agua esta tomando las siguientes acciones en respuesta a esta violación:

_____

Para mas información, favor de llamar:

_____
Representante del sistema de agua

_____
Nombre del sistema de aqua telefono

ESCUELAS, DUEÑO O ENCARGADO DE PROPIEDADES PARA RENTAR O DUEÑOS O ENCARGADOS DE NEGOCIOS: SECCIÓN 116450 DEL CÓDIGO DE SALUD Y SEGURIDAD REQUIERE LA SIGUIENTE NOTIFICACIÓN: ESCUELAS O SISTEMAS DE ESCUELAS TIENEN QUE NOTIFICAR LOS EMPLEADOS, ESTUDIANTES, Y PADRES DE ESTUDIANTES MENORES DE EDAD; DUEÑOS O ENCARGADOS DE PROPIEDADES PARA RENTAR TIENEN QUE NOTIFICAR INQUILINOS; Y DUEÑOS Y ENCARGADOS DE NEGOCIOS TIENEN QUE NOTIFICAR A LOS EMPLEADOS. ESTA NOTIFICACIÓN TIENE QUE SER DADO DENTRO DE 10 DÍAS DE RECIBIR ESTA NOTIFICACIÓN. ADICIONALMENTE, SI EL DUEÑO VENDE LA PROPIEDAD SERVIDO POR ESTE SISTEMA, EL VENDEDOR ES RESPONSABLE DE ASEGURAR QUE EL COMPRADOR ES INFORMADO DE LA CALIDAD DE AGUA Y PRECAUCIONES QUE SE NECESITA TOMAR.
ESTOS PROCEDIENTOS ESTAN EN EFECTO HASTA QUE RECIBA NOTICIAS ADICIONALES.

APPENDIX 3
CERTIFICATION OF COMPLETION OF PUBLIC NOTIFICATION

Compliance Order Number: 18-003

Name of Water System: Mission School Water System

System Number: 2702317

Attach a copy of the public notice distributed to the water system's customers.

This form, when completed and sent to drinkingwaterprogram@co.monterey.ca.us for the Monterey County Environmental Health Bureau serves as certification that public notification to water users was completed as required by Title 22, California Code of Regulations, Sections 64463-64465.

Public notification for failure to comply with the **Nitrate MCL** was conducted on:

Notification was made on _____ .

For the month, year of _____, _____.

To summarize report delivery used and good-faith efforts taken, please check all items below that apply and fill-in where appropriate:

For Community and non-transient non-community public water systems

☐ The notice was distributed by mail or direct delivery to each customer on: _____

One or more of the following methods were used to reach persons not likely to be reached by a mailing or direct delivery or persons served by a transient public water system (renters, nursing home patients, prison inmates, etc.):

☐ Posted the notice at the following conspicuous locations served by the water system. (If needed, please attach a list of locations). _____

☐ Publication of the notice in a local newspaper or newsletter of general circulation (attach a copy of the published notice, including name of newspaper and date published).

☐ Posted the notice on the Internet at www._____

☐ Other method used to notify customers. _____

I hereby certify that the above information is factual.

Certified by: Printed Name _____ Title_____

Signature _____

Date _____

Disclosure: Be advised that the California Health and Safety Code, Sections 116725 and 116730 state that any person who knowingly makes any false statement on any report or document submitted for the purpose of compliance with the Safe Drinking Water Act may be liable for, respectively, a civil penalty not to exceed five thousand dollars ($5,000) for each separate violation or, for continuing violations, for each day that violation continues, or be punished by a fine of not more than $25,000 for each day of violation, or by imprisonment in the county jail not to exceed one year, or by both the fine and imprisonment.

APPENDIX 4: QUARTERLY PROGRESS REPORT

Water System: Mission School Water System	Water System No: 2702317
Compliance Order No: 18-003	Violation: **Nitrate MCL**
Calendar Quarter:	Date:

This form should be prepared and signed by Mission School WS personnel with appropriate authority to implement the directives of the Compliance Order and the Corrective Action Plan. Please attach additional sheets as necessary. The quarterly progress report must be submitted by the 10th day of each subsequent quarter, to the Monterey County Environmental Health Bureau to the following email address: drinkingwaterprogram@co.monterey.ca.us titled appropriately.

Summary of Compliance Plan:

Tasks completed in the reporting quarter:

Tasks remaining to complete:

Anticipated compliance date:

Printed Name **Signature**

Title **Date**

APPENDIX 5 – NOTIFICATION OF RECEIPT

Compliance Order Number: 18-003

Name of Water System: Mission School Water System

System Number: 2702317

Certification

I certify that I am an authorized representative of the Mission School WS and that Compliance Order No. 18-003 was received on _____. Further, I certify that the Order has been reviewed by the appropriate management staff of the Mission School WSand it is clearly understood that Compliance Order No. 18-003 contains legally enforceable directives with specific due dates.

_____ _____

Signature of Water System Representative Date

THIS FORM MUST BE COMPLETED AND RETURNED TO THE STATE WATER BOARD, DIVISION OF DRINKING WATER, NO LATER THAN January 10, 2019

Disclosure: Be advised that the California Health and Safety Code, Sections 116725 and 116730 state that any person who knowingly makes any false statement on any report or document submitted for the purpose of compliance with the Safe Drinking Water Act may be liable for, respectively, a civil penalty not to exceed five thousand dollars ($5,000) for each separate violation or, for continuing violations, for each day that violation continues, or be punished by a fine of not more than $25,000 for each day of violation, or by imprisonment in the county jail not to exceed one year, or by both the fine and imprisonment.

APPENDIX B

Laboratory Report

Cypress Water Services
Cypress Water Services - Miles Farmer
PO Box 615
Castroville, CA 95012

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS (6227)
www.MBASinc.com
ELAP Certification Number: 2385

Tuesday, August 2, 2022

Sample Results

Lab Number: 220801_19-01

Collection Date/Time: 8/1/2022 10:00 Sample Collector: Skelin J Client Sample #:
Received Date/Time: 8/1/2022 14:22 System ID: Coliform Designation: Special

Sample Description: Mission Union School, Mission Union #4

Analyte	Method	Unit	Result	Qualifier	Dilution	PQL	Analysis Date/Time		Analyst
Chlorine Residual (Field)	SM4500-Cl G	mg/L	0		1		8/1/2022	10:00	
Coliform, E Coli (Quantitray)	SM9223B-18hr	MPN/100ml	<1		1	1	8/1/2022	14:56	BM
Coliform, Total (Quantitray)	SM9223B-18hr	MPN/100ml	<1		1	1	8/1/2022	14:56	BM

Comments:

Lab Number: 220801_19-02

Collection Date/Time: 8/1/2022 9:50 Sample Collector: Skelin J Client Sample #:
Received Date/Time: 8/1/2022 14:22 System ID: Coliform Designation: Special

Sample Description: Mission Union School, Well

Analyte	Method	Unit	Result	Qualifier	Dilution	PQL	Analysis Date/Time		Analyst
Chlorine Residual (Field)	SM4500-Cl G	mg/L	0		1		8/1/2022	9:50	
Coliform, E Coli (Quantitray)	SM9223B-18hr	MPN/100ml	<1		1	1	8/1/2022	14:56	BM
Coliform, Total (Quantitray)	SM9223B-18hr	MPN/100ml	<1		1	1	8/1/2022	14:56	BM

Comments:

Report Approved by: David Holland, Laboratory Director

The results in this report are related only to the samples analyzed.

Abbreviations/Definitions:
mg/L: Milligrams per liter (=ppm)
µg/L: Micrograms per liter (=ppb)
MPN: Most Probable Number
MDL: Method Detection Limit
PQL: Practical Quantitation Limit
MCL: Maximum Contamination Level
ND: Not Detected at the PQL (or MDL, if shown)
E: Analysis performed by External Laboratory; see Report attachments
H: Analyzed outside of method hold time
QC: Quality Control
J: Result is < PQL but ≥ MDL; the concentration is an approximate value.

8/3/22 MJ

Cypress Water Services
Cypress Water Services - Miles Farmer
PO Box 615
Castroville, CA 95012

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS (6227)
www.MBASinc.com
ELAP Certification Number: 2385

Tuesday, August 2, 2022

Sample Condition Upon Receipt

Order ID: 220801_19

Is there evidence of chilling? *NOTE: Systems are encouraged but not required to hold samples <10°C (Microbiology) or <6°C (Chemistry) during transit.	Yes
Did bottle arrive intact?	Yes
Did bottle labels agree with COC?	Yes
Adequate sample volume?	Yes

Abbreviations/Definitions:
mg/L: Milligrams per liter (=ppm)
µg/L: Micrograms per liter (=ppb)
MPN: Most Probable Number
MDL: Method Detection Limit
PQL: Practical Quantitation Limit
MCL: Maximum Contamination Level
ND: Not Detected at the PQL (or MDL, if shown)
E: Analysis performed by External Laboratory; see Report attachments
H: Analyzed outside of method hold time
QC: Quality Control
J: Result is < PQL but ≥ MDL; the concentration is an approximate value.

Abbreviations/Definitions:
mg/L: Milligrams per liter (=ppm)
µg/L: Micrograms per liter (=ppb)
MPN: Most Probable Number
MDL: Method Detection Limit
PQL: Practical Quantitation Limit
MCL: Maximum Contamination Level
ND: Not Detected at the PQL (or MDL, if shown)
E: Analysis performed by External Laboratory; see Report attachments
H: Analyzed outside of method hold time
QC: Quality Control
J: Result is < PQL but ≥ MDL; the concentration is an approximate value.

Monterey Bay Analytical Services Chain Of Custody / Analysis Request

220801-19

MBAS
Monterey Bay Analytical Services
4 Justin Ct. Suite D • Monterey, Ca 93940 • (831) 375-MBAS (6227) • (831) 641-0734 (Fax)

Client/Company Name: **Cypress Water Services**

Attention: Miles Farmer

Billing Address: P.O. Box 615, Castroville, CA 95012

Project/System Information: Mission Union School

E-Mail Address(es): Service@cypresswaterservices.com

Contract/P.O. #:

For Regulatory Complaince? YES ☐ NO ☑

For State or Local Health Department reporting:

Electronic Data Transfer (EDT)? YES ☐ NO ☑

System ID Number: _____

Turn Around Time: STD (7-14 Days) ☐ 48-Hour ☐ 5-Day ☐ 24-Hour ☐

Phone # 831-594-2620

Fax #

Drinking water ☐ Wastewater ☐ Monitoring Well ☐ Soil ☐ Sludge ☐ Other ☐

MBAS Lab #	Project ID or Source Code #	Sample Site / Description (Well Name, APN#, Address, Stormdrain #)	Sampling Date	Sampling Time	Receiving Temp.	CL2 Residual	Coliform Analysis: Routine	Other	Repeat	Special	# Cont.	Container Type	Container Size	Analysis Requested: Coliform -QT
01		Mission Union #4	08/01/2022	1060	20.3	0				✓	1	Sterile	100ml	✓
02		Well	08/01/2022	0950	20.9	0				✓	1	Sterile	100ml	✓
					IR04									

	Printed Name	Signature	Date	Time	Comments or Special Instructions:
Sampled by:	Skelin, Joshua				
Relinquished by:	Cypress Water Services		08/01/2022	1420	
Received by:					
Relinquished by:					
Received by:	Monterey Bay Analytical Services		8/1/22	1422	

☐ Payment received Check # Amount: Receipt # Date:

APPENDIX C

Environmental Analysis of Engineering Alternatives

Environmental Analysis of Engineering Alternatives
Mission Union Elementary School

The project is needed because the Mission Union Elementary School (the School) current water source is a well, which contains nitrate concentrations near and above the drinking water Maximum Contaminant Levels. There School's water system also does not have a potable water storage tank or a back-up generator. So, if the School loses power – they are instantly out of water.

Four potential alternatives were considered to solve these problems:

- **Alternative 1** – No Action: Maintain existing system with no improvements. Water supply issues would not be addressed, and supply would still contain nitrates above the MCL
- **Alternative 2** – Consolidation with an existing water system
- **Alternative 3** – Treatment System for Nitrate: install a Reverse Osmosis (RO) treatment system to remove nitrate from the groundwater
- **Alternative 4** – Drilling a new well: drill deeper to find groundwater without significant nitrate concentrations

Each of the project alternatives result in varying temporary and permanent environmental impacts, which are compared in the following table. When Alternatives have differing impacts on an environmental factor, the alternative with less impact is preferred and marked with a (+).

Environmental Alternatives Analysis – Mission Union School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Consolidation	Alternative 3: Treatment System for Nitrate	Alternative 4: Preferred Project - Drill a new well
Aesthetics	No Impact	No Impact	No Impact	No Impact
Agricultural and Forestry Resources	No Impact	No Impact	No Impact	No Impact
Air Quality	(+) No Impact	Construction-generated air pollutant emissions likely less-than-significant. Operational emissions for the proposed Project would be somewhat higher than existing, because a pump station would be required.	Construction-generated air pollutant emissions likely less-than-significant. Operational emissions for the proposed Project would be generally somewhat higher than existing, due to increased emissions from truck hauling nitrate RO system "filtrate" for off-site disposal.	Construction-generated air pollutant emissions likely less-than-significant. Operational emissions for the proposed Project would be similar to existing.

Environmental Alternatives Analysis – Mission Union School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Consolidation	Alternative 3: Treatment System for Nitrate	Alternative 4: Preferred Project - Drill a new well
Biological Resources	(+) No Impact	*In Process*	*In Process*	*In Process*
Cultural and Tribal Resources	No Impact	*In Process*	*In Process*	*In Process*
Geology and Soils	No Impact	No Impact. No unique geologic features identified.	No Impact. No unique geologic features identified.	No Impact. No unique geologic features identified.
Greenhouse Gas Emissions	No Impact	Project construction & operations would adhere to statewide efforts to minimize GHG emissions. Short-term construction impacts would likely have a less-than- significant impact. Long-term pump station emissions.	Project construction and operations would adhere to statewide efforts to minimize GHG emissions. Short-term impacts of construction would likely have a less-than-significant impact. Long term filtrate off-haul emissions.	Project construction and operations would adhere to statewide efforts to minimize GHG emissions. Short-term impacts of construction would likely have a less-than- significant impact.

Environmental Alternatives Analysis – Mission Union School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Consolidation	Alternative 3: Treatment System for Nitrate	Alternative 4: Preferred Project - Drill a new well
Hazards and Hazardous Materials	No Impact	No Impact	No Impact	No Impact.
Hydrology and Water Quality	(+) No Impact	The project would involve ground disturbance such as trenching that could result in temporary impacts on surface water quality. Accidental spill controls and best stormwater construction management practices would be implemented to ensure impacts remain less than significant.	The project would involve ground disturbance such as trenching that could result in temporary impacts on surface water quality. Accidental spill controls and best stormwater construction management practices would be implemented to ensure impacts remain less than significant.	The project would involve ground disturbance such as trenching that could result in temporary impacts on surface water quality. Accidental spill controls and best stormwater construction management practices would be implemented to ensure impacts remain less than significant.

Environmental Alternatives Analysis – Mission Union School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Consolidation	Alternative 3: Treatment System for Nitrate	Alternative 4: Preferred Project - Drill a new well
Land Use and Planning	No Impact	No Impact	No Impact	No Impact
Mineral Resources	No Impact	The project area is not in an area of known mineral resource potential and would not result in the loss of availability of a valuable mineral resource.	The project area is not in an area of known mineral resource potential and would not result in the loss of availability of a valuable mineral resource.	The project area is not in an area of known mineral resource potential and would not result in the loss of availability of a valuable mineral resource.

Environmental Alternatives Analysis – Mission Union School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Consolidation	Alternative 3: Treatment System for Nitrate	Alternative 4: Preferred Project - Drill a new well
Noise	No Impact	During construction, a minor increase in noise levels is anticipated. Construction-related noise and ground borne vibration during construction would be temporary and occur only during daylight hours and have a less than significant impact on the adjacent properties.	During construction, a minor increase in noise levels is anticipated. Construction-related noise and ground borne vibration during construction would be temporary and occur only during daylight hours and have a less than significant impact on the adjacent properties.	During construction, a minor increase in noise levels is anticipated. Construction-related noise and ground borne vibration during construction would be temporary and occur only during daylight hours and have a less than significant impact on the adjacent properties.
Population and Housing	No Impact	The project would neither induce growth nor displace existing housing. No replacement housing would be required.	The project would neither induce growth nor displace existing housing. No replacement housing would be required.	The project would neither induce growth nor displace existing housing. No replacement housing would be required.

Environmental Alternatives Analysis – Mission Union School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Consolidation	Alternative 3: Treatment System for Nitrate	Alternative 4: Preferred Project - Drill a new well
Public Services	No Impact –water supply does not meet Nitrate MCL	The project would not cause impacts on government facilities or negatively affect fire/police protection, schools, parks, or public facilities. The improvements to the water facilities would ensure that the School had adequate drinking water supplies.	The project would not cause impacts on government facilities or negatively affect fire/police protection, schools, parks, or public facilities. The improvements to the water facilities would ensure that the School had adequate drinking water supplies.	The project would not cause impacts on government facilities or negatively affect fire/police protection, schools, parks, or public facilities. The improvements to the water facilities would ensure that the School had adequate drinking water supplies, assuming Nitrate-free water is found.
Recreation	No Impact	There are no recreational facilities in or adjacent to the project area.	There are no recreational facilities in or adjacent to the project area.	There are no recreational facilities in or adjacent to the project area.
Transportation and Traffic	(+) No Impact	Disruption to local and on-site School traffic during pipeline installation	Potential minor disruption to on-site School parking lot traffic	Potential minor disruption to on-site School parking lot traffic

Environmental Alternatives Analysis – Mission Union School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Consolidation	Alternative 3: Treatment System for Nitrate	Alternative 4: Preferred Project - Drill a new well
Utilities and Service Systems	No Impact	Consolidation would likely have no significant impact	No Impact	No Impact

Appendix B

CalEEMod Results

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Mission Union AQ Summary Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Mission Union AQ
Construction Start Date	7/8/2025
Operational Year	2025
Lead Agency	Mission Union School District
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	5.00
Location	36825 Foothill Rd, Soledad, CA 93960, USA
County	Monterey
City	Unincorporated
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3211
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.20

1.2. Land Use Types

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

Elementary School	1.20	1000sqft	0.03	1,200	0.00	0.00	—	Installation of a new well and well pad at the existing school site.

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-9	Use Dust Suppressants
Construction	C-10-B	Water Active Demolition Sites
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Unmit.	0.74	9.95	8.23	0.03	32.7	3.71	4,727	4,921
Mit.	0.74	9.95	8.23	0.03	32.7	3.71	4,727	4,921
% Reduced	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—
Unmit.	0.03	0.29	0.41	< 0.005	0.57	0.07	93.1	94.9
Mit.	0.03	0.29	0.41	< 0.005	0.57	0.07	93.1	94.9
% Reduced	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—
Unmit.	< 0.005	0.05	0.08	< 0.005	0.10	0.01	15.4	15.7
Mit.	< 0.005	0.05	0.08	< 0.005	0.10	0.01	15.4	15.7

% Reduced	—	—	—	—	—	—	—	—

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—
Unmit.	0.03	0.01	0.05	< 0.005	0.57	0.06	21.4	22.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—
Unmit.	0.03	0.01	0.05	< 0.005	0.57	0.06	20.9	21.4
Average Daily (Max)	—	—	—	—	—	—	—	—
Unmit.	0.03	< 0.005	0.03	< 0.005	0.40	0.04	17.4	17.9
Annual (Max)	—	—	—	—	—	—	—	—
Unmit.	0.01	< 0.005	0.01	< 0.005	0.07	0.01	2.88	2.96

6. Climate Risk Detailed Report

6.2. Initial Climate Risk Scores

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

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

6.3. Adjusted Climate Risk Scores

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

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

7. Health and Equity Details

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	50.0
Healthy Places Index Score for Project Location (b)	17.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

Appendix C

Special-Status Species Table

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Special-Status Species Database

(Soledad, Bickmore Canyon, Gonzales, Greenfield, Mount Johnson, North Chalone Peak, Palo Escrito Peak, Paraiso Springs, Sycamore Flat)

Species	Status (USFWS/ CDFW/CNPS)	General Habitat	Potential Occurrence within Project Vicinity
MAMMALS			
Antrozous pallidus Pallid bat	-- / CSC / --	Occurs in a wide variety of habitats including grasslands, shrublands, arid desert areas, oak savanna, coastal forested areas, and coniferous forests of the mountain regions of California. Most common in open, dry habitats with rocky areas for roosting. Day roosts include caves, crevices, mines, and occasionally hollow trees and buildings. Seems to prefer rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Similar structures are used for night roosting and will also use more open sites such as eaves, awnings, and open areas under bridges for feeding roosts.	**Low** Low quality habitat is present within and directly adjacent to the survey area. No rocky areas near the project site for roosting habitat. The nearest CNDDB occurrence is approximately 1.5 miles from the survey area from 1937.
Corynorhinus townsendii Townsend's big-eared bat	-- / CSC / --	Found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Typically roost during the day in limestone caves, lava tubes, and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees.	**Low** Low quality roosting habitat is present within the survey area. The nearest CNDDB occurrence is approximately 3 miles from the survey area from 1937.
Eumops perotis californicus Western mastiff bat	-- / CSC / --	Many open habitats including conifer and deciduous woodlands, coastal scrub, grassland, and chaparral. Roost in crevices in cliff faces, high buildings, trees, and tunnels.	**Low** Low quality roosting habitat is present within and directly adjacent to the survey area near trees. The nearest CNDDB occurrence is approximately 3 miles from the survey area from 1938.
Lasiurus blossevillii Western red bat	-- / CSC / --	Roosting habitat includes trees and sometimes shrubs in forests and woodlands from sea level up through mixed conifer forests. Roost sites are often in edge habitats adjacent to streams, fields, or urban areas. Feeds over a wide variety of habitats, including grasslands, shrublands, open woodlands and forests, and croplands.	**Low** Low quality roosting habitat is present within and directly adjacent to the survey area. There is only one CNDDB occurrence from all 9 quadrangles. The CNDDB occurrence is approximately 15 miles from the survey area from 2002.

Species	Status (USFWS/ CDFW/CNPS)	General Habitat	Potential Occurrence within Project Vicinity
Perognathus inornatus psammophilus Salinas pocket mouse	-- / CSC / --	Typically found in grasslands and blue oak savanna, needs friable soils.	**Low** Marginal habitat is present directly adjacent to the survey area within oak woodland/grassland areas, but not within the project site. The nearest CNDDB occurrence is approximately 1.5 miles from the survey area from 1936. The occurrence notes the individual was found within grassland on a steep slope. which is present adjacent to the project site, but not within the impact area of the project.
Taxidea taxus American badger	-- / CSC / --	Dry, open grasslands, fields, pastures savannas, and mountain meadows near timberline are preferred. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated grounds.	**Low** Marginal habitat is present adjacent to the survey area within grassland areas, but suitable habitat is not present within the survey area. The nearest CNDDB occurrence is approximately 1.5 miles from the survey area from 1936.
Vulpes macrotis mutica San Joaquin Kit fox	FE / ST / --	Open, level areas with loose-textured soils supporting scattered, shrubby vegetation with little human disturbance. Live in annual grasslands or grassy open stages dominated by scattered brush, shrubs, and scrub.	**Low** Marginal habitat is present within the open grasslands and oak woodland adjacent to the project site, but suitable habitat is not present within the survey area. The nearest CNDDB occurrence is approximately 4 miles from the survey area from 1975.
BIRDS			
Accipiter cooperii Cooper's hawk (nesting)	-- / WL / --	Resident throughout most of the wooded portion of the state. Dense stands of live oak, riparian deciduous, or other forest habitats near water used most frequently. Seldom found in areas without dense tree stands, or patchy woodland habitats.	**Unlikely** No suitable nesting habitat is present within or directly adjacent to the survey area. The nearest CNDDB occurrence is approximately 15 miles from the survey area from 2007.
Accipiter striatus Sharp-shinned hawk (nesting)	-- / WL / --	Uses dense stands in close proximity to open areas. Roosts in intermediate to high-canopy forest. Nests in dense, even-aged, single-layered forest canopy. Winters in woodlands.	**Low** No suitable nesting habitat is present within or directly adjacent to the survey area. The nearest CNDDB occurrence is approximately 15 miles from the survey area from 2006.
Agelaius tricolor Tricolored blackbird (nesting colony)	-- / ST / --	Nest in colonies in dense riparian vegetation, along rivers, lagoons, lakes, and ponds. Forages over grassland or aquatic habitats.	**Unlikely** No suitable nesting habitat is present within or directly adjacent to the survey area. The nearest CNDDB occurrence is approximately 5.5 miles from the survey area from 1994. No birds were observed in the same area as the CNDDB occurrence in 2014, but the population is still presumed extant.

Species	Status (USFWS/ CDFW/CNPS)	General Habitat	Potential Occurrence within Project Vicinity
Aquila chrysaetos Golden eagle (nesting & wintering)	--/ CFP / --	Use rolling foot-hills, mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, cliffs, and rocky outcrops. Nest in secluded cliffs with overhanging ledges as well as large trees.	**Unlikely** No suitable nesting habitat is present within or directly adjacent to the survey area. The nearest CNDDB occurrence is approximately 8 miles from the survey area from 2006
Asio otus Long-eared owl (nesting)	-- / CSC / --	Frequents dense, riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats. Also found in dense conifer stands at higher elevations.	**Unlikely** No suitable nesting habitat is present within or directly adjacent to the survey area. The nearest CNDDB occurrence is approximately 14 miles from the survey area from 2016.
Athene cunicularia Burrowing owl (burrow sites & some wintering sites)	-- / CSC / --	Year round resident of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Frequent open grasslands and shrublands with perches and burrows. Use rodent burrows (often California ground squirrel) for roosting and nesting cover. Pipes, culverts, and nest boxes may be substituted for burrows in areas where burrows are not available.	**Low** Suitable grassland habitat is present adjacent to the survey area, but not within the project site. The nearest CNDDB occurrence is approximately 6 miles from the survey area from 2007. There are two other CNDDB occurrences that are about 6 miles from the survey area from 2007.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT / SE / --	Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, slow-moving watercourses, backwaters, or seeps. Willow almost always a dominant component of the vegetation.	**Unlikely** No suitable nesting habitat is present within or directly adjacent to the survey area.
Elanus leucurus White-tailed kite (nesting)	-- / CFP / --	Open groves, river valleys, marshes, and grasslands. Prefer such area with low roosts (fences etc.). Nest in shrubs and trees adjacent to grasslands.	**Low** Marginal nesting habitat is present within and directly adjacent to the survey area. The nearest CNDDB occurrence is approximately 8 miles from the survey area from 2016. The nest was found near riparian habitat which is not present on the project site.
Empidonax traillii extimus Southwestern willow flycatcher (nesting)	FE / SE / --	Breeds in riparian habitat in areas ranging in elevation from sea level to over 2,600 meters. Builds nest in trees in densely vegetated areas. This species establishes nesting territories and builds, and forages in mosaics of relatively dense and expansive areas of trees and shrubs, near or adjacent to surface water or underlain by saturated soils. Not typically found nesting in areas without willows (*Salix sp*.), tamarisk (*Tamarix ramosissima)*, or both.	**Unlikely** No suitable nesting habitat within or adjacent to the survey area. No CNDDB occurrences within the 9 quadrangles for this species.
Falco peregrinus anatum American peregrine falcon (nesting)	-- / CFP / --	Forages for other birds over a variety of habitats. Breeds primarily on rocky cliffs.	**Unlikely** No suitable nesting habitat within or adjacent to the survey area.

Species	Status (USFWS/ CDFW/CNPS)	General Habitat	Potential Occurrence within Project Vicinity
Gymnogyps californianus California condor	FE / SE&CFP / --	Roosting sites in isolated rocky cliffs, rugged chaparral, and pine covered mountains 2000-6000 feet above sea level. Foraging area removed from nesting/roosting site (includes rangeland and coastal area - up to 19 mile commute one way). Nest sites in cliffs, crevices, potholes.	**Unlikely** No suitable nesting habitat within or adjacent to the survey area.
Riparia riparia Bank swallow (nesting)	-- / ST / --	Nest colonially in sand banks. Found near water; fields, marshes, streams, and lakes.	**Unlikely** No suitable nesting habitat within or adjacent to the survey area. The nearest CNDDB occurrence is approximately 3.5 miles from the survey area from 1972.
Vireo bellii pusillus Least Bell's vireo (nesting)	FE / SE / --	Riparian areas and drainages. Breed in willow riparian forest supporting a dense, shrubby understory. Oak woodland with a willow riparian understory is also used in some areas, and individuals sometimes enter adjacent chaparral, coastal sage scrub, or desert scrub habitats to forage.	**Unlikely** No suitable nesting habitat within or adjacent to the survey area.
REPTILES AND AMPHIBIANS			
Ambystoma californiense California tiger salamander	FT / ST&WL / --	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Need underground refuges and vernal pools or other seasonal water sources.	**Unlikely** The nearest CNDDB occurrence is approximately 6.5 miles from the survey area from 2007. No suitable breeding habitat within this species known disbursal distance of 2.2km.
Anniella pulchra Northern California legless lizard	-- / CSC / --	Requires moist, warm habitats with loose soil for burrowing and prostrate plant cover, often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas.	**Unlikely** No suitable habitat within the survey area. The nearest CNDDB occurrence is approximately 10 miles from the survey area from 1978.
Emys marmorata Western pond turtle	-- / CSC / --	Associated with permanent or nearly permanent water in a wide variety of habitats including streams, lakes, ponds, irrigation ditches, etc. Require basking sites such as partially submerged logs, rocks, mats of vegetation, or open banks.	**Unlikely** No suitable habitat within or directly adjacent to the survey area. The nearest CNDDB occurrence is approximately 10 miles from the survey area from 2008.
Masticophis flagellum ruddocki San Joaquin whipsnake	-- / CSC / --	Variety of habitats-deserts, scrub land, juniper-grassland, woodland, thorn forest, and farmland. Generally avoids dense vegetation. Ranges from Arbuckle in the Sacramento southward to the Grapevine in the Kern County portion of the San Joaquin Valley and westward into the inner South Coast Ranges. An isolated population also occurs in the Sutter Buttes.	**Low** Low quality habitat is present within the survey area. The nearest CNDDB occurrence is approximately 6 miles from the survey area from 1987. No occurrences of this species occur within the main Soledad quadrangle, but 7 CNDDB occurrences occur within the 8 associated quadrangles.

Species	Status (USFWS/ CDFW/CNPS)	General Habitat	Potential Occurrence within Project Vicinity
Phrynosoma blainvillii Coast horned lizard	-- / CSC / --	Associated with open patches of sandy soils in washes, chaparral, scrub, and grasslands.	**Unlikely** Low quality habitat is present within the survey area. The nearest CNDDB occurrence is approximately 8 miles from the survey area from 2003.
Rana boylii Foothill yellow-legged frog	PT&PE / SE&CSC / --	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats, including hardwood, pine, and riparian forests, scrub, chaparral, and wet meadows. Rarely encountered far from permanent water.	**Unlikely** Low quality upland habitat is present within the survey area since there is no permanent water near the survey area.
Rana draytonii California red-legged frog	FT / CSC / --	Lowlands and foothills in or near permanent or late-season sources of deep water with dense, shrubby, or emergent riparian vegetation. During late summer or fall adults are known to utilize a variety of upland habitats with leaf litter or mammal burrows.	**Unlikely** Low quality upland habitat is present within the survey area. The survey area is not within CRLF critical habitat. The survey area is not near seasonal or permanent water resources.
Spea hammondii Western spadefoot	-- / CSC / --	Grasslands with shallow temporary pools are optimal habitats for the western spadefoot. Occur primarily in grassland habitats, but can be found in valley and foothill woodlands. Vernal pools are essential for breeding and egg laying.	**Unlikely** Low quality upland habitat is present within the survey area. The nearest CNDDB occurrence is approximately 1.5 miles from the survey area from 1943. The survey area is not near seasonal or permanent water resources.
Taricha torosa torosa Coast Range newt (Monterey County south only)	-- / CSC / --	Occurs mainly in valley-foothill hardwood, valley-foothill hardwood-conifer, coastal scrub, and mixed chaparral but is known to occur in grasslands and mixed conifer types. Seek cover under rocks and logs, in mammal burrows, rock fissures, or man-made structures such as wells. Breed in intermittent ponds, streams, lakes, and reservoir.	**Unlikely** No breeding habitat such as ponds, streams, lakes, or reservoirs are near the survey area. Marginal suitable upland habitat is present in the grasslands adjacent to the project site. The only CNDDB occurrence within the 9 quadrangles is approximately 12 miles from the survey area from 2008.
FISH			
Lavinia exilicauda harengus Monterey hitch (Pajaro/Salinas hitch)	-- / CSC / --	Found only within the Pajaro and Salinas River systems. Can occupy a wide variety of habitats, however, they are most abundant in lowland areas with large pools or small reservoirs that mimic such conditions. May be found in brackish water conditions within the Salinas River lagoon during the early summer months when the sandbar forms at the mouth of the river.	**Not Present** No suitable habitat is present within the survey area.
Oncorhynchus mykiss irideus Steelhead (south/central California coast DPS)	FT / -- / --	Cold headwaters, creeks, and small to large rivers and lakes; anadromous in coastal streams. Found in streams and rivers from the Pajaro River in Sana Cruz County to (but not including) the Santa Maria River in San Luis Obispo County.	**Not Present** No suitable habitat is present within the survey area.

Species	Status (USFWS/ CDFW/CNPS)	General Habitat	Potential Occurrence within Project Vicinity
INVERTEBRATES			
Bombus caliginosus Obscure bumble bee	-- / CNDDB / --	Native to the West Coast of the United States. Occurs primarily along the coast in grassy prairies and meadows within the Coast Range. This species can nest both under and above ground. When nesting above ground the species may utilize abandoned bird nests. Found in areas that are relatively humid including areas that are frequently foggy.	**Unlikely** No suitable habitat is present within the survey area. There is only one CNDDB occurrence from the 9 associated quadrangles that is approximately 11 miles from the survey area from 1958. The CNDDB occurrence has a non-specified accuracy and the point spans from the Bickmore Canyon quadrangle to the North Chalone Peak quadrangle.
Bombus crotchii Crotch bumble bee	-- / SC / --	Occurs in open grassland and scrub at relatively warm and dry sites. Requires plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle, which is from early February to late October. Generally nests underground, often in abandoned mammal burrows. Within California this species is known to occur in the Mediterranean, Pacific Coast, Western Desert, as well as Great Valley and adjacent foothill regions.	**Low** Marginal habitat is present directly adjacent to the survey area, however no suitable habitat is present within the survey area. The nearest CNDDB occurrence is approximately 2 miles from the survey area from 1964.
Bombus occidentalis Western bumble bee	-- / SC / --	Occurs in open grassy areas, urban parks, urban gardens, chaparral, and meadows. Requires plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle, which is from early February to late November. Generally nests underground, often in abandoned mammal burrows. Populations are currently largely restricted to high elevation sites in the Sierra Nevada; however, the historic range includes the northern California coast.	**Low** Suitable habitat is present within the project site in the high school's urban garden and soccer field area, however there are not sufficient plants within the project site that bloom throughout the species life cycle. The only CNDDB occurrence from the 9 associated quadrangles is approximately 7 miles from the survey area from 1967.
Branchinecta lynchi Vernal pool fairy shrimp	FT / -- / --	Require ephemeral pools with no flow. Associated with vernal pool/grasslands from near Red Bluff (Shasta County), through the central valley, and into the South Coast Mountains Region. Require ephemeral pools with no flow.	**Not Present** No suitable habitat is present within the survey area.
Danaus plexippus Monarch butterfly	FC / -- / --	Overwinters in coastal California using colonial roosts generally found in Eucalyptus, pine and acacia trees. Overwintering habitat for this species within the Coastal Zone represents ESHA. Local ordinances often protect this species as well.	**Unlikely** No CNDDB occurrences within the 9 associated quadrangles.
PLANTS			
Abies bracteata Bristlecone fir	-- / -- / 1B	Endemic to Santa Lucia Mountains. Broadleaved upland forest, chaparral, and lower montane coniferous forest on rocky soils at elevations of 183-1600 meters. Evergreen tree in the Pinaceae family.	**Not Present** No suitable habitat is present within the survey area. The survey area lies outside of the known elevation range of this species. Not identified during the survey conducted in September 2023.

Species	Status (USFWS/ CDFW/CNPS)	General Habitat	Potential Occurrence within Project Vicinity
Arctostaphylos gabilanensis Gabilan Mountains manzanita	-- / -- / 1B	Endemic to chaparral and chaparral/pine cismontane woodland habitats of the Gabilan Mountains of California, along the borders of San Benito and Monterey counties at elevations of 300-700 meters. Evergreen shrub in the Ericaceae family; blooms in January.	**Not Present** No suitable habitat is present within the survey area. The survey area lies outside of the known elevation range of this species. Not identified during the survey conducted in September 2023.
Arenaria paludicola Marsh sandwort	FE / SE / 1B	Known from only two natural occurrences in Black Lake Canyon and at Oso Flaco Lake. Sandy openings of freshwater of brackish marshes and swamps at elevations of 3-170 meters. Stoloniferous perennial herb in the Caryophyllaceae family; blooms May-August.	**Not Present** No suitable habitat is present within the survey area. Not identified during the survey conducted in September 2023.
Caulanthus lemmonii Lemmon's jewel flower	-- / -- / 1B	Open, grassy areas on hillside slopes and in fields, canyons, and arroyos. Soils include alkaline soils, shaley clay, sandstone talus, and decomposed serpentine. Predominantly found within valley and foothill grassland and occasionally in pinyon and juniper woodland at elevations of 80 - 12200 meters. Annual herb in the Brassicaceae family; blooms March-May.	**Low** No suitable habitat within the survey area. The nearest CNDDB occurrence is approximately 10 miles from the project site from 1956. The occurrence was found in a small ravine.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	-- / -- / 1B	Valley and foothill grassland on heavy clay, saline, or alkaline soils at elevations of 0-230 meters. Annual herb in the Asteraceae family; blooms May-November.	**Not Present** Marginal suitable habitat is present. Not identified during the survey conducted in September 2023.The nearest CNDDB occurrence is approximately 5 miles from the survey area, but is extirpated from 1917.
Chorizanthe pungens var. *pungens* Monterey spineflower	FT / -- / 1B	Maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland on sandy soils at elevations of 3-450 meters. Annual herb in the Polygonaceae family; blooms April-July.	**Low** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is approximately 1.5 miles from the survey area from 1920.
Clarkia jolonensis Jolon clarkia	-- / -- / 1B	Cismontane woodland, chaparral, riparian woodland, and coastal scrub at elevations of 20-660 meters. Annual herb in the Onagraceae family; blooms April-June.	**Unlikely** No suitable habitat is present within the survey area.
Delphinium californicum ssp. interius Hospital Canyon California larkspur	-- / -- / 1B	Openings in chaparral, coastal scrub, and mesic areas of cismontane woodland at elevations of 230-1095 meters. Perennial herb in the Ranunculaceae family; blooms April-June.	**Not Present** No suitable habitat is present within the survey area. The survey area lies outside of the known elevation range of this species. Not identified during the survey conducted in September 2023.
Eriogonum heermannii var. occidentale Western Heermann's buckwheat	-- / -- / 1B	Often serpentinite; usually roadsides or alluvium floodplains, rarely clay or shale slopes. Cismontane woodland (openings). 102-986 meters, blooms July-October.	**Not Present** No suitable habitat is present within the survey area. The survey area lies outside of the known elevation range of this species. Not identified during the survey conducted in September 2023.

Species	Status (USFWS/ CDFW/CNPS)	General Habitat	Potential Occurrence within Project Vicinity
Eriogonum nortonii Pinnacles buckwheat	-- / -- / 1B	Chaparral and valley and foothill grassland on sandy soils, often on recent burns, at elevations of 300-975 meters. Annual herb in the Polygonaceae family; blooms May-September.	**Not Present** No suitable habitat is present within the survey area. The survey area lies outside of the known elevation range of this species. Not identified during the survey conducted in September 2023.
Juncus luciensis Santa Lucia dwarf rush	-- / -- / 1B	Chaparral, Great Basin scrub, lower montane coniferous forest, meadows, seeps, and vernal pools at elevations of 300-2040 meters. Annual herb in the Juncaceae family; blooms April-July.	**Unlikely** No suitable habitat is present within the survey area. The survey area lies outside of the known elevation range of this species.
Layia heterotricha Pale-yellow layia	-- / -- / 1B	Cismontane woodlands, coastal scrub, pinyon and juniper woodlands, and valley and foothill grasslands on alkaline or clay soils at elevations of 300-1705 meters. Annual herb in the Asteraceae family blooms March-June.	**Low** No habitat is present within and directly adjacent to the survey area. The survey area lies outside of the known elevation range of this species.
Malacothamnus aboriginum Indian Valley bush-mallow	-- / -- / 1B	Chaparral and cismontane woodland on rocky or granitic soils, often in burned areas, at elevations of 150-1700. Deciduous shrub in the Malvaceae family; blooms April-October.	**Not Present** No suitable habitat is present within the survey area. The survey area lies outside of the known elevation range of this species. Not identified during the survey conducted in September 2023.
Malacothamnus davidsonii Davidson's bush-mallow	-- / -- / 1B	Chaparral, coastal scrub, riparian woodland; 185-855 meters. Deciduous shrub. Blooms: June-January.	**Not Present** No suitable habitat is present within the survey area. The survey area lies outside of the known elevation range of this species. Not identified during the survey conducted in September 2023.
Malacothrix saxatilis var. *arachnoidea* Carmel Valley malacothrix	-- / -- / 1B	Chaparral and coastal scrub on rocky soils at elevations of 25-1036 meters. Perennial rhizomatous herb in the Asteraceae family; blooms June-December.	**Not Present** No suitable habitat is present within the survey area. Not identified during the survey conducted in September 2023.
Navarretia nigelliformis ssp. *radians* Shining navarretia	-- / -- / 1B	Cismontane woodland, valley and foothill grasslands, and vernal pools at elevations of 76-1000 meters. Annual herb in the Polemoniaceae family; blooms April-July.	**Low** No suitable habitat is present within and adjacent the survey area.
Nemacladus secundiflorus var. robbinsii Robbins' nemacladus	-- / -- / 1B	Openings in chaparral and valley and foothill grasslands at elevations of 350-1700 meters. Annual herb in the Campanulaceae family; blooms April- June.	**Unlikely** Low quality habitat is present within the survey area. The survey area lies outside of the known elevation range of this species.
Plagiobothrys uncinatus Hooked popcorn-flower	-- / -- / 1B	Chaparral, cismontane woodlands, and valley and foothill grasslands on sandy soils at elevations of 300-760 meters. Annual herb in the Boraginaceae family; blooms April-May.	**Unlikely** Low quality habitat is present within the survey area. The survey area lies outside of the known elevation range of this species.
Senecio aphanactis Chaparral ragwort	-- / -- / 2B	Chaparral, cismontane woodland, and coastal scrub, sometimes on alkaline soils, at elevations of 15-800 meters. Annual herb in the Asteraceae family; blooms January-April.	**Unlikely** No suitable habitat is present within the survey area.

STATUS DEFINITIONS

Federal

FE = listed as Endangered under the federal Endangered Species Act
FT = listed as Threatened under the federal Endangered Species Act
FC = Candidate for listing under the federal Endangered Species Act
-- = no listing

State

SE = listed as Endangered under the California Endangered Species Act
ST = listed as Threatened under the California Endangered Species Act
SR = listed as Rare under the California Native Plant Protection Act
SC = Candidate for listing under the California Endangered Species Act
CSC = California Department of Fish and Wildlife Species of Concern
CFP = California Fully Protected Animal
WL = CDFW Watch List
CNDDB = This designation is being assigned to animal species with no other status designation defined in this table. These animal species are included in the Department's CNDDB "Special Animals" list (2018), which includes all taxa the CNDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special-status species." The Department considers the taxa on this list to be those of the greatest conservation need.
-- = no listing

California Native Plant Society

1B = California Rare Plant Rank 1B species; rare, threatened, or endangered in California and elsewhere
2B = California Rare Plant Rank 2B species; rare, threatened, or endangered in California, but more common elsewhere
3 = California Rare Plant Rank 3species; CNPS review list
4 = California Rare Plant Rank 4 Limited distribution (CNPS Watch List)
-- = no listing

POTENTIAL TO OCCUR

Present = known occurrence of species within the site; presence of suitable habitat conditions; or observed during field surveys
High = known occurrence of species in the vicinity from the CNDDB or other documentation; presence of suitable habitat conditions
Moderate = known occurrence of species in the vicinity from the CNDDB or other documentation; presence of marginal habitat conditions within the site
Low = species known to occur in the vicinity from the CNDDB or other documentation; lack of suitable habitat or poor quality
Unlikely = species not known to occur in the vicinity from the CNDDB or other documentation, no suitable habitat is present within the site
Not Present = species was not observed during surveys

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Appendix D

Preliminary Archaeological Assessment

This report may discuss locations of specific archaeological sites and is confidential. For this reason, it is not included in this Initial Study. Qualified personnel, however, may request a copy of the report from the Mission Union School District.

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Appendix E

Geological and Geotechnical Investigations

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GEOTECHNICAL INVESTIGATION

MISSION UNION ELEMENTARY SCHOOL
DRINKING WATER STORAGE TANKS AND
WATER SYSTEM UPGRADES
SOLEDAD, CALIFORNIA

FOR
WEBER HAYES AND ASSOCIATES
WATSONVILLE, CALIFORNIA

Pacific Crest
ENGINEERING INC

CONSULTING GEOTECHNICAL ENGINEERS

2345-M289-B31
JUNE 2023
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GEOTECHNICAL | ENVIRONMENTAL | CHEMICAL | MATERIAL TESTING | SPECIAL INSPECTIONS

June 16, 2023 Project No. 2345-M289-B31

Craig Drizin
Principal Engineer
Weber Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Subject: **Geotechnical Investigation – Design Phase**
Drinking Water Storage Tanks and Water System Upgrades
APN 165-031-008
Foothill Road
Soledad, California 93960

Dear Mr. Drizin,

In accordance with your authorization, we have performed a geotechnical exploration for the proposed drinking water storage tanks and water system upgrades to be constructed at Mission Union Elementary School in Soledad, California.

The accompanying report presents our conclusions and recommendations as well as the results of the geotechnical exploration on which they are based. The conclusions and recommendations presented in this report are contingent upon our review of the plans during the design phase of the project, and our observation and testing during the construction phase of the project.

Very truly yours,

PACIFIC CREST ENGINEERING INC.

Prepared by:

REGISTERED PROFESSIONAL ENGINEER
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GE 2252
EXP. 6-30-2023
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STATE OF CALIFORNIA

Soma Goresky, GE
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Reviewed by:

REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

Matt Maciel
Principal Geotechnical Engineer
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GEOTECHNICAL INVESTIGATION REPORT
Mission Union Elementary Drinking Water Storage Tanks and Water System Upgrades
Soledad, California

I. INTRODUCTION

PURPOSE AND SCOPE

This report describes the geotechnical investigation and presents our conclusions and recommendations for the proposed drinking water storage tanks and associated water system upgrades at Mission Union Elementary School in Soledad, California. For purposes of this report, "site" refers to the area proposed for the water tanks and associated pump building.

Our scope of services for this project has consisted of:

1. Site reconnaissance to observe the existing conditions.

2. Review of the following published maps:
   - Geologic Map of Monterey County, California, Rosenberg, 2001.
   - Map Showing Relative Earthquake-Induced Landslide Susceptibility of Monterey County, California, Rosenberg, 2001.
   - Map Showing Liquefaction Susceptibility of Monterey County, California, Rosenberg, 2001.
   - Map Showing Relative Fault Hazards of Monterey County, California, Rosenberg, 2001.
   - Geographic Information System – Geologic Hazards Map for Monterey County, "Monterey County GIS" http://www.co.monterey.ca.us/government/departments-a-h/housing-community-development/monterey-county-gis-maps

3. The drilling and logging of two (2) test borings.

4. Laboratory analysis of retrieved soil samples.

5. Engineering analysis of the field and laboratory test results. Ground motion analysis for the site was performed as outlined in AWWA D-100-21.

6. Review of preliminary plans and schematics showing the locations of the proposed tanks and water system upgrades, prepared by Weber Hayes and Associates, dated August 2022.

7. Preparation of this report documenting our investigation and presenting geotechnical recommendations for the design and construction of the project.

PROJECT LOCATION

The subject site is located approximately at the northwestern-most corner of the Mission Union Elementary school campus, off Foothill Road in Soledad, California. Please refer to the Regional Site Map, Figure No. 1, in Appendix A for the general vicinity of the project site, which is approximately located by the following coordinates:

Latitude = 36.39037 degrees
Longitude = -121.36519 degrees

PROPOSED IMPROVEMENTS

Based on our review of preliminary plans and discussions with Weber Hayes and Associates, it is our understanding that the planned improvements will include the following: installation of two (2) 5,000-gallon polyurethane potable water storage tanks, construction of a new well and pump building to the northwest of the new 5,000-gallon storage tanks, and installation of water lines between the new tanks and, an existing 35,000-gallon storage tank and the nearby classrooms. We understand that the tanks and associated pump building will be founded on a structural slab. The tanks will have seismic strapping anchored into the concrete foundation. Minor grading on the order of maximum cuts and fills of 2 feet will be required to create a flat pad for the improvements.

II. INVESTIGATION METHODS

FIELD INVESTIGATION

Two, 8-inch diameter test boring were drilled at the site on April 13, 2023. The approximate location of the test borings is shown on Figure No. 2, in Appendix A. The drilling method used was hydraulically operated continuous flight hollow-stem augers on a mobile drill rig. An engineer from Pacific Crest Engineering Inc. was present during the drilling operations to log the soil encountered and to choose sampler type and locations.

Relatively undisturbed soil samples were obtained at various depths by driving a split spoon sampler 18 inches into the ground. This was achieved by dropping a 140-pound hammer a vertical height of 30 inches. The hammer was actuated with a wire winch. The number of blows required to drive the sampler each 6-inch increment and the total number of blows required to drive the last 12 inches was recorded by the field engineer. The outside diameter of the samplers used was 3-inch or 2-inch and are designated on the Boring Logs as “L” or “T”, respectively.

The field blow counts in 6-inch increments are reported on the Boring Logs adjacent to each sample as well as the Standard Penetration Test data (SPT). All SPT data has been normalized to a 2-inch O.D. sampler and is reported on the Boring Logs as SPT "N" values. The normalization method used was derived from the second edition of the Foundation Engineering Handbook (H.Y. Fang, 1991). The method utilizes a Sampler Hammer Ratio which is dependent on the weight of the hammer, height of hammer drop, outside diameter of sampler, and inside diameter of sample.

The soils encountered in the borings were continuously logged in the field and visually described in accordance with ASTM D2488. The soil classifications were verified upon completion of laboratory testing in general accordance with the Unified Soil Classification System (ASTM D2487). Please refer to the Boring Log Explanations, Figures No. 3 and 4, in Appendix A for a summary of the Unified Soil Classification System.

Appendix A contains the site plan showing the locations of the test borings, our borings logs and an explanation of the soil classification system used. Stratification lines on the boring logs are approximate as the actual transition between soil types may be gradual.

LABORATORY TESTING

The laboratory testing program was developed to aid in evaluating the engineering properties of the materials encountered at the site. Laboratory tests performed include:

- Moisture Density relationships in accordance with ASTM D2937.
- Gradation testing in accordance with ASTM D1140.
- Atterberg Limits testing in accordance with ASTM D4318.

The results of the laboratory testing is presented on the boring logs opposite the sample tested and/or presented graphically in Appendix A.

III. FINDINGS AND ANALYSIS

GEOLOGIC SETTING

The surficial geology around the project site is mapped as Undifferentiated Holocene Alluvial Fan Deposits (Rosenberg 2001). The deposits locally are described as *"Unconsolidated, moderately to poorly sorted sand, silt, and gravel, with layers of silty clay."* The soil encountered during our field exploration is consistent with this description. Please refer to the project Geologic Report in Appendix C for a more detailed discussion of the geologic setting.

SURFACE CONDITIONS

The proposed dual-tank and water system improvements site is situated near the northwestern-most corner of the Mission Union Elementary School campus. The site is currently occupied by two shipping/storage containers and is bordered by an existing 35,000-gallon fire prevention storage tank to the south, a well and classroom building to the southeast, agricultural land to the north, and Foothill Road to the west. The proposed development area is relatively flat with roughly a 12:1 (H:V) downwards slope towards the northeast. The surrounding area of the site is vegetated with native grasses and few moderate to large trees.

SUBSURFACE CONDITIONS

Our subsurface exploration consisted of two small-diameter borings drilled to the northeast and southwest of the existing shipping/storage containers, as close to the proposed improvements as was practically possible. These borings extended between 21½ and 51½ feet below the existing grade. The soil profiles and classifications, laboratory test results and groundwater conditions encountered for each test boring are presented in the Logs of Test Borings, in Appendix A. The general subsurface conditions are described below.

Surficial soils at the site consist of about a 2½ to 6-foot layer of loose, coarse grained material consisting of clayey sand with gravel, gravel with clay and sand and sand with silt. Below about 6 feet we encountered interbedded layers of medium dense to dense sand with variable percentages of gravel and silt.

Groundwater was not encountered in our borings and no evidence of shallow groundwater was observed at the site. We note that our borings were drilled in the spring after an unusually high rainfall season. The groundwater conditions described in this report reflect the conditions encountered during our drilling investigation at the specific locations drilled. It must be anticipated that perched and regional groundwater tables may vary with location and could fluctuate with variations in rainfall, runoff, irrigation and other changes to the conditions encountered at the time our observations were made.

FAULTING AND SEISMICITY

Please refer to the Geologic Report appended, for a discussion on the faulting and seismicity of the project site.

Seismic Shaking and Seismic Design Parameters

Due to the proximity of the site to active and potentially active faults, it is reasonable to assume the site will experience high intensity ground shaking during the lifetime of the project. Structures founded on thick, soft soil deposits are more likely to experience more destructive shaking, with higher amplitude and lower frequency, than structures founded on bedrock. Generally, shaking will be more intense closer to earthquake epicenters. Thick, soft soil deposits large distances from earthquake epicenters, however, may result in seismic accelerations significantly greater than expected in bedrock.

Selection of seismic design parameters should be determined by the project structural designer. The site coefficients and seismic ground motion values shown in the table below were developed based on AWWA D100-21 in conjunction with applicable sections of ASCE 7-16.

Table No. 1 - Seismic Design Parameters [1,3]

Seismic Design Parameter	AWWA D100-21 Value
Site Class	D
Spectral Acceleration for Short Periods	Ss = 1.49g
Spectral Acceleration for 1-second Period	S_1 = 0.53g
Short Period Site Coefficient	Fa = 1.0
1-Second Period Site Coefficient	Fv = 1.5[1]
MCE Spectral Response Acceleration for Short Period	S_{MS} = 1.49g
MCE Spectral Response Acceleration for 1-Second Period	S_{M1} = 0.79[2]
Design Spectral Response Acceleration for Short Period	S_{DS} = 0.99g
Design Spectral Response Acceleration for 1-Second Period	S_{D1} = 0.53[1]
Risk Category	II
Impulsive Component	Ri = 3.0[2]
Convective Component	Rc = 1.5[2]

Note 1: Design values have been obtained using AWWA D100-21, Table 23 and the ASCE Hazard Tool at https://asce7hazardtool.online

Note 2: Values assume a mechanically anchored tank

Note 3: A Risk Category II is assumed, based on AWWA D100-21, Section 3.1. Pacific Crest Engineering Inc. should be contacted for revised seismic design parameters if the proposed tanks have a different Risk Category rating than that assumed.

The recommendations of this report are intended to reduce the potential for structural damage to an acceptable risk level, however strong seismic shaking could result in architectural damage and the need for post-earthquake repairs. It should be assumed that exterior improvements such as pavements or sidewalks may need to be repaired or replaced following strong seismic shaking.

GEOTECHNICAL HAZARDS

A quantitative analysis of geotechnical hazards was beyond our scope of services for this project. In general however, the geotechnical hazards associated with the project site include seismic shaking (discussed above), ground surface fault rupture, liquefaction, lateral spreading, seismic settling and landsliding. A qualitative discussion of these hazards is presented below.

Ground Surface Fault Rupture

Pacific Crest Engineering Inc. has not performed a specific investigation for the presence of active faults at the project site. Based upon our review of the Monterey County GIS Hazard Maps, the project site is not mapped within a fault hazard zone.

Ground surface fault rupture typically occurs along the surficial traces of active faults during significant seismic events. Since the nearest known active, or potentially active fault trace is mapped

approximately 1½ miles from the site, it is our opinion that the potential for ground surface fault rupture to occur at the site should be considered low.

Liquefaction and Lateral Spreading

Based upon our review of the Monterey County GIS Hazard Maps and Map Showing Liquefaction Susceptibility of Monterey County (Rosenberg, 2001), the project site is mapped within a low liquefaction hazard zone. Based on the density of the materials we encountered and the lack of any groundwater within the upper 50 feet of soil we concur with this designation.

Liquefaction tends to occur in loose, saturated fine-grained sands and coarse silt, or clays with low plasticity. We did not encounter groundwater during our field investigation and the density of the soils are relatively high. Consequently, it is our opinion that the potential for liquefaction to occur at the subject site should be considered low.

Liquefaction induced lateral spreading occurs when a liquefied soil mass fails toward an open slope face, or fails on an inclined topographic slope. Our analysis indicates that the site has a low potential for liquefaction, consequently the potential for lateral spreading is also considered low.

Seismically Induced Settlement

Seismically induced settlement occurs when intergranular void spaces compress during a loading event. We have evaluated the upper 50 feet of soil column under seismic "dynamic" loading to assess this hazard.

The potential for seismically induced dry sand settlement was evaluated quantitatively for this project based upon the data obtained from our exploratory test borings. Our analysis utilized LiqSVs, a software based on the work of Pradel 1998. The program calculats the seismically induced settlement due to "dynamic" compaction of loose, dry sands above the design water table.

The following criteria was used in our analysis:

- Peak Ground Acceleration (PGA_M) value of 0.7104g determined in accordance with section 1803A.512 of the California Building Code.
- Earthquake magnitude of 8.12 occurring on the San Andreas Fault, as derived from deaggregation tool available from USGS website.
- Groundwater elevation of 70 feet.

Using the above parameters and the estimated SPT "blow counts" obtained from our borings, we estimate the magnitude of seismically induced ground surface settlement to be between about ½ and 1¼ inches. Please refer to Appendix B for full the model parameters and results.

Landsliding

Based upon our review of the Monterey County GIS Hazard Maps and Map Showing Relative Earthquake-Induced Landsliding of Monterey County (Rosenberg, 2001), the subject site and

surrounding area are mapped as having a low potential for earthquake-induced landsliding. For a discussion on the site specific landslide hazards please refer to the Geologic Report in Appendix C.

Expansive Soils

Expansive soils tend to heave during the rainy season and contract during the summer and this shrink/swell action extends down to the depth of seasonal moisture change. Seasonal moisture fluctuation and subsequent expansion and contraction of these types of soils typically occurs more near the ground surface where the seasonal moisture fluctuation is the greatest and decreases with depth below ground surface.

The site soils are coarse grained and have a low plasticity. Based on our observations and laboratory testing in our opinion they have a low expansion potential.

IV. DISCUSSION AND CONCLUSIONS

GENERAL

1. The results of our investigation indicate that the proposed drinking water storage tanks and water system improvements are feasible from a geotechnical engineering standpoint, provided our recommendations are included in the design and construction of the project.

2. Grading and foundation plans should be reviewed by Pacific Crest Engineering Inc. during their preparation and prior to contract bidding.

3. Pacific Crest Engineering Inc. should be notified at least four (4) working days prior to any site clearing and grading operations on the property in order to observe the stripping and disposal of unsuitable materials, and to coordinate this work with the grading contractor. During this period, a pre-construction conference should be held on the site, with at least the client or their representative, the grading contractor, and one of our engineers present. At this meeting, the project specifications and the testing and inspection responsibilities will be outlined and discussed.

4. The findings, conclusions and recommendations provided in this report are based on the understanding that Pacific Crest Engineering will remain as Geotechnical Engineer of Record throughout the design and construction phase of the project. The validity of the findings, conclusions and recommendations contained in this report are dependent upon our review of project plans as well as an adequate testing and observation program during the construction phase. Field observation and testing must therefore be provided by a representative of Pacific Crest Engineering Inc., to enable us to form an opinion as to whether the extent of work related to earthwork or foundation excavation complies with the project plans, specifications, and our geotechnical recommendations. Pacific Crest Engineering assumes no responsibility for any site work that is performed without the full knowledge and direct observation of Pacific Crest Engineering Inc.

PRIMARY GEOTECHNICAL CONSIDERATIONS

5. Based upon the results of our investigation, it is our opinion that the primary geotechnical issues associated with the design and construction of the proposed project are the following:

a. Loose and Compressible Soils: There is a surficial layer of loose and potentially compressible native soils underlying the site. Building foundations, concrete slabs-on-grade, and pavements underlain by compressible material may be subject to settlement and distress. In order to reduce potential settlement and distress we recommend that soils underlying proposed improvements be sub-excavated and recompacted as engineered fill. Recommendations for this are presented in the Earthwork section of this report.

b. Seismically Induced Settlement: The soils underlying the site have the potential for settlement during a strong seismic event. Calculated seismically induced dry settlements are on the order of ½ to 1¼ inches. Settlement may be reduced by sub-excavating the loose surficial soils and bringing the building pad up to design grades with engineered fill. Detailed recommendations for earthwork, foundations, and concrete slabs-on-grade are presented in the following sections of this report.

c. Excavation Near Existing Improvements and Trees: Establishing the pad grade for the proposed water tanks and associated water system upgrades will require excavations on the order of 1 to 2 feet of soil in the area of existing improvements. Protection of existing improvements, including any large trees that are to remain should be considered in the project design.

d. *Strong Seismic Shaking:* The project site is located within a seismically active area and strong seismic shaking is expected to occur within the design lifetime of the project. Improvements should be designed and constructed in accordance with the most current AWWA D100 and the recommendations of this report to minimize reaction to seismic shaking. Structures built in accordance with the latest edition of the Code have an increased potential for experiencing relatively minor damage which should be repairable, however strong seismic shaking could result in architectural damage and the need for post-earthquake repairs.

V. RECOMMENDATIONS

EARTHWORK

Clearing and Stripping

1. The initial preparation of the site may consist of demolition of portions of any existing structures and their foundations and removal of designated trees and debris. All foundation elements from existing structures must be completely removed from the building areas. Tree removal should include the entire stump and root ball. Septic tanks and leaching lines, if found, must be completely removed. The extent of this soil removal will be designated by a representative of Pacific Crest Engineering Inc. in the field. This material must be removed from the site.

2. Any voids created by the removal of old structures and their foundations, tree and root balls, septic tanks, and leach lines must be backfilled with properly compacted engineered fill which meets the requirements of this report.

3. Any wells encountered shall be capped in accordance with the requirements and approval of the County Health Department. The strength of the cap shall be equal to the adjacent soil and shall not be located within 5 feet of a structural footing.

4. Surface vegetation, tree roots and organically contaminated topsoil should then be removed ("stripped") from the area to be graded. In addition, any remaining debris or large rocks must also be removed (this includes asphalt or rocks greater than 2 inches in greatest dimension). This material may be stockpiled for future landscaping.

5. It is anticipated that the depth of stripping may be 2 to 4 inches. Final required depth of stripping must be based upon visual observations by a representative of Pacific Crest Engineering Inc., in the field. The required depth of stripping will vary based upon the type and density of vegetation across the project site and with the time of year.

Excavations and Shoring

6. It is possible that there are areas of man-made fill at the site that our field investigation did not detect. Areas of man-made fill, if encountered, will need to be completely excavated to undisturbed native material. The excavation process should be observed, and the extent designated by a representative of Pacific Crest Engineering Inc., in the field. Any voids created by fill removal must be backfilled with properly compacted engineered fill.

7. Following the stripping and backfilling of voids, the exposed soils in the development area should be sub-excavated a minimum depth of 2 feet below pad grade, or 2-feet below the thickened edge of the concrete foundation slab, whichever is greater. The sub-excavation process should also include the removal of any remaining undocumented fill material. Any voids created by fill removal must be backfilled with properly compacted engineered fill.

8. Sub-excavations should extend under the entire tank and building pad and at least 3 feet horizontally beyond all foundations and concrete slabs-on-grade.

9. The sub-excavation process should be observed, and the final extents designated by a representative of Pacific Crest Engineering Inc., in the field.

10. Care must be taken not to undermine the foundation system beneath existing improvements. Excavations made adjacent to existing footings must not extend below a line drawn outward at a gradient of 2:1 (H:V) from the bottom outside edge of the footing.

11. On-site safety and protection of existing improvements is the sole responsibility of the Contractor. The Contractor shall designate a competent person (as defined by CAL-OSHA) to monitor all excavations prior to the start of each work day, and throughout the work day as necessary.

12. All excavations must meet the requirements of 29 CFR 1926.651 and 1926.652 or comparable OSHA approved state plan requirements.

Subgrade Preparation

13. After clearing, stripping and subexcavations are complete the exposed soils in areas to support concrete slabs-on-grade, foundations, pavements or engineered fill should be scarified a minimum of 8 inches, moisture conditioned to 2 to 4 percent above optimum moisture content and compacted in accordance with the recommendations of this report.

14. Wet and soft soils, may be encountered at the bottom of the excavations. If wet or unstable subgrades are encountered, they may need to further subexcavated and replaced with stabilization fabric, crushed rock or other materials to create a stable working surface. The depth of over-excavations and method used should be determined in the field at the time of construction. All subexcavations should be observed by a representative of Pacific Crest Engineering Inc. and modified as necessary to establish a stable subgrade.

Material for Engineered Fill

15. Native or imported soil proposed for use as engineered fill should meet the following requirements:

a. free of organics, debris, and other deleterious materials,
b. free of "recycled" materials such as asphaltic concrete, concrete, brick, etc.,
c. granular in nature, well graded, and contain sufficient binder to allow utility trenches to stand open,
d. free of rocks in excess of 2 inches in size.

16. In addition to the above requirements, import fill should have a Plasticity Index between 4 and 12, and a minimum Resistance "R" Value of 30, and be non-expansive.

17. Samples of any proposed imported fill planned for use on this project should be submitted to Pacific Crest Engineering Inc. for appropriate testing and approval not less than ten (10) working days before the anticipated jobsite delivery. This includes proposed import trench sand, drain rock and for aggregate base materials. Imported fill material delivered to the project site without prior submittal of samples for appropriate testing and approval must be removed from the project site.

Engineered Fill Placement and Compaction

18. Following any necessary subexcavations and/or subgrade preparation, areas should be brought up to design grades with engineered fill that is moisture conditioned and compacted according to the recommendations of this report. **This should result in a minimum of 24 inches of engineered fill beneath**

all new footings and the thickened edges of concrete slab-on-grades.. Recompacted sections should extend at least 3 feet horizontally beyond all footings, slabs and 3 feet beyond the edges of pavements, where possible.

19. Engineered fill should be placed in maximum 8-inch lifts, before compaction, at a water content which is within 1 to 3 percent of the laboratory optimum value.

20. Engineered fill should be compacted as follows:

a. In pavement areas the upper 8 inches of subgrade, and all aggregate subbase and aggregate base, should be compacted to a minimum of 95% of its maximum dry density,
b. In pavement areas all utility trench backfill should be compacted to 95% of its maximum dry density,
c. All remaining soil on the project site should be compacted to a minimum of 90% of its maximum dry density.

21. The maximum dry density will be obtained from a laboratory compaction curve run in accordance with ASTM Procedure #D1557. This test will also establish the optimum moisture content of the material. Field density testing will be performed in accordance with ASTM Test #D6938 (nuclear method).

22. We recommend field density testing be performed in maximum 2-foot elevation differences. In general terms, we recommend at least one compaction test per 200 linear feet of utility trench or retaining wall backfill, and at least one compaction test per 2,000 square feet of building or structure area. This is a subjective value and may be changed by the geotechnical engineer based on a review of the final project layout and exposed field conditions.

Cut and Fill Slopes

23. No permanent cut or fill slopes are anticipated. Should cut or fill slopes be proposed, supplemental geotechnical engineering recommendations will be required.

Soil Moisture and Weather Conditions

24. If earthwork activities are done during or soon after the rainy season, the on-site soils and other materials may be too wet in their existing condition to be used as engineered fill. These materials may require a diligent and active drying and/or mixing operation to reduce the moisture content to the levels required to obtain adequate compaction as an engineered fill. If the on-site soils or other materials are too dry, water may need to be added. In some cases, the time and effort to dry the on-site soil may be considered excessive, and the import of aggregate base may be required.

Utility Trench Backfill

25. Utility trenches that are parallel to the sides of the building should be placed so that they do not extend below a line sloping down and away at a 2:1 (horizontal to vertical) slope from the bottom outside edge of all footings.

26. Utility pipes should be designed and constructed so that the top of pipe is a minimum of 24 inches below the finish subgrade elevation of any road or pavement areas. Any pipes within the top 24 inches of finish subgrade should be concrete encased, per design by the project civil engineer.

27. For the purpose of this section of the report, backfill is defined as material placed in a trench starting one foot above the pipe, and bedding is all material placed in a trench below the backfill.

28. Unless concrete bedding is required around utility pipes, free-draining clean sand should be used as bedding. Sand bedding should be compacted to at least 95 percent relative compaction. Clean sand is defined as 100 percent passing the #4 sieve, and less than 5 percent passing the #200 sieve.

29. Approved imported clean sand or native soil should be used as utility trench backfill. Backfill in trenches located under and adjacent to structural fill, foundations, concrete slabs and pavements should be placed in horizontal layers no more than 8 inches thick. This includes areas such as sidewalks, patios, and other hardscape areas. Each layer of trench backfill should be water conditioned and compacted to at least 95 percent relative compaction.

30. All utility trenches beneath perimeter footing or grade beams should be backfilled with controlled density fill (such as 2-sack sand\cement slurry) to help minimize potential moisture intrusion below interior floors. The length of the plug should be at least three times the width of the footing or grade beam at the building perimeter, but not less than 36 inches. A representative from Pacific Crest Engineering Inc. should be contacted to observe the placement of slurry plugs. In addition, all utility pipes which penetrate through the footings, stemwalls or grade beams (below the exterior soil grade) should also be sealed water-tight, as determined by the project civil engineer or architect.

31. Utility trenches which carry “nested” conduits (stacked vertically) should be backfilled with a control density fill (such as 2-sack sand\cement slurry) to an elevation one foot above the nested conduit stack. The use of pea gravel or clean sand as backfill within a zone of nested conduits is not recommended.

32. A representative from our firm should be present to observe the bottom of all trench excavations, prior to placement of utility pipes and conduits. In addition, we should observe the condition of the trench prior to placement of sand bedding, and to observe compaction of the sand bedding, in addition to any backfill planned above the bedding zone.

33. Jetting of the trench backfill is not recommended as it may result in an unsatisfactory degree of compaction.

34. Trenches must be shored as required by the local agency and the State of California Division of Industrial Safety construction safety orders.

FOUNDATIONS – STRUCTURAL SLABS

35. The following recommendations are based on the proposed tank and building location as shown on Figure 2 of this report. If the building sites are changed, we request the opportunity to review proposed plans to confirm if these recommendations still apply.

36. We understand that the tanks and the associated pump building will be founded on a structural concrete slab. Structural concrete slabs should be underlain by a minimum of 24 inches of compacted engineered fill that is placed and compacted as outlined in the earthwork section of this report.

37. The structural mat should be designed for an allowable bearing capacity of 2,000 psf (dead plus live load) which may be increased by one-third for wind or seismic loads.

38. Provided the recommendations of this report are closely followed, the mat should experience a total static settlement of 1 inch or less, with the differential settlements being approximately ½ of the total settlement.

39. As discussed previously, after a major earthquake seismically-induced settlements will be on the order of ½ to 1¼ inch.

40. Structural mats constructed should be designed with a thickened edge that extends a minimum of 12 inches below the lowest adjacent compacted pad grade, not including sand or gravel sections.

41. The mat may be assumed to have a resistance to lateral sliding of 0.35.

42. Structural slabs should be underlain by a minimum 6-inches of ¾ inch clean crushed rock or Class II baserock that is placed and compacted in accordance with the specifications in this report.

43. The edges of all slabs and foundations should be set back at least 5 feet horizontally from the top of all slopes.

44. Slab thickness, reinforcement, and doweling should be determined by the project civil or structural engineer. The use of welded wire mesh is not recommended for slab reinforcement.

PAVEMENT DESIGN

45. The design of the pavement section was beyond our scope of services for this project. To have the selected pavement sections perform to their greatest efficiency, it is very important that the following items be considered:

a. Properly scarify and moisture condition the upper 8 inches of the subgrade soil and compact it to a minimum of 95% of its maximum dry density, at a moisture content of 1 to 3% over the optimum moisture content for the soil.

b. Provide sufficient gradient to prevent ponding of water.

c. Use only quality materials of the type and thickness (minimum) specified. All aggregate base and subbase must meet Caltrans Standard Specifications for Class 2 materials and be angular in shape. All Class 2 aggregate base should be ¾ inch maximum in aggregate size.

d. Compact the base and subbase uniformly to a minimum of 95% of its maximum dry density.

e. Porous pavement systems which consist of porous paving blocks, asphaltic concrete or concrete are generally not recommended due to the potential for saturation of the subgrade soils and resulting increased potential for a shorter pavement life. At a minimum, porous pavement systems should include a layer of Mirafi HP370 geotextile fabric placed on the subgrade soil beneath the porous paving section. These pavement systems should only be used with the understanding by the Owner of the increased potential for pavement cracking, rutting, potholes, etc.

f. Maintenance should be undertaken on a routine basis.

SURFACE DRAINAGE

46. Surface water drainage is the responsibility of the project civil engineer. The following should be considered by the civil engineer in design of the project.

47. Surface water must not be allowed to pond or be trapped adjacent to foundations, or on building pads and parking areas.

48. All roof eaves should be guttered, with the outlets from the downspouts provided with adequate capacity to carry the storm water away from structures to reduce the possibility of soil saturation and erosion. The connection should be in a closed conduit which discharges at an approved location away from structures and graded areas.

49. Slope failures can occur where surface drainage is allowed to concentrate on unprotected slopes. Appropriate landscaping and surface drainage control around the project area is imperative in order to minimize the potential for shallow slope failures and erosion. Stormwater discharge locations should not be located at the top or on the face of any slope.

50. Final grades should be provided with positive gradient away from all foundation elements. Soil grades should slope away from foundations at least 5 percent for the first 10 feet. Impervious surfaces should slope away from foundations at least 2 percent for the first 10 feet. Concentrations of surface runoff should be handled by providing structures, such as paved or lined ditches, catch basins, etc.

51. Irrigation activities at the site should be done in a controlled and reasonable manner.

52. Following completion of the project we recommend that storm drainage provisions and performance of permanent erosion control measures be closely observed through the first season of significant rainfall, to determine if these systems are performing adequately and, if necessary, resolve any unforeseen issues.

53. The building and surface drainage facilities must not be altered nor any filling or excavation work performed in the area without first consulting Pacific Crest Engineering Inc. Surface drainage improvements developed by the project civil engineer must be maintained by the property owner at all times, as improper drainage provisions can produce undesirable affects.

EROSION CONTROL

54. The surface soils are classified as having a low to moderate potential for erosion. Therefore, the finished ground surface should be planted with ground cover and continually maintained to minimize surface erosion. For specific and detailed recommendations regarding erosion control on and surrounding the project site, the project civil engineer or an erosion control specialist should be consulted.

55. The surfaces of all cut and fill slopes should be prepared and maintained to reduce erosion. This work, at a minimum, should include track rolling of the slope and effective planting. The protection of the slopes should be installed as soon as practicable so that a sufficient growth will be established prior to inclement weather conditions. It is vital that no slope be left standing through a winter season without the erosion control measures having been provided.

PLAN REVIEW

56. We respectfully request an opportunity to review the project plans and specifications during preparation and before bidding to verify that the recommendations of this report have been included and to provide additional recommendations, if needed. These plan review services are also typically required by the reviewing agency. Misinterpretation of our recommendations or omission of our requirements from the project plans and specifications may result in changes to the project design during the construction phase, with the potential for additional costs and delays in order to bring the project into conformance with the requirements outlined within this report. Services performed for review of the project plans and specifications are considered “post-report” services and billed on a “time and materials” fee basis in accordance with our latest Standard Fee Schedule.

VI. LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. This Geotechnical Investigation was prepared specifically for Weber Hayes and Associates and for the specific project and location described in the body of this report. This report and the recommendations included herein should be utilized for this specific project and location exclusively. This Geotechnical Investigation should not be applied to nor utilized on any other project or project site. Please refer to the ASFE “Important Information about Your Geotechnical Engineering Report” attached with this report.

2. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings. If any variations or undesirable conditions are encountered

during construction, or if the proposed construction will differ from that planned at the time, our firm should be notified so that supplemental recommendations can be provided.

3. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans, and that the necessary steps are taken to ensure that the Contractors and Subcontractors carry out such recommendations in the field.

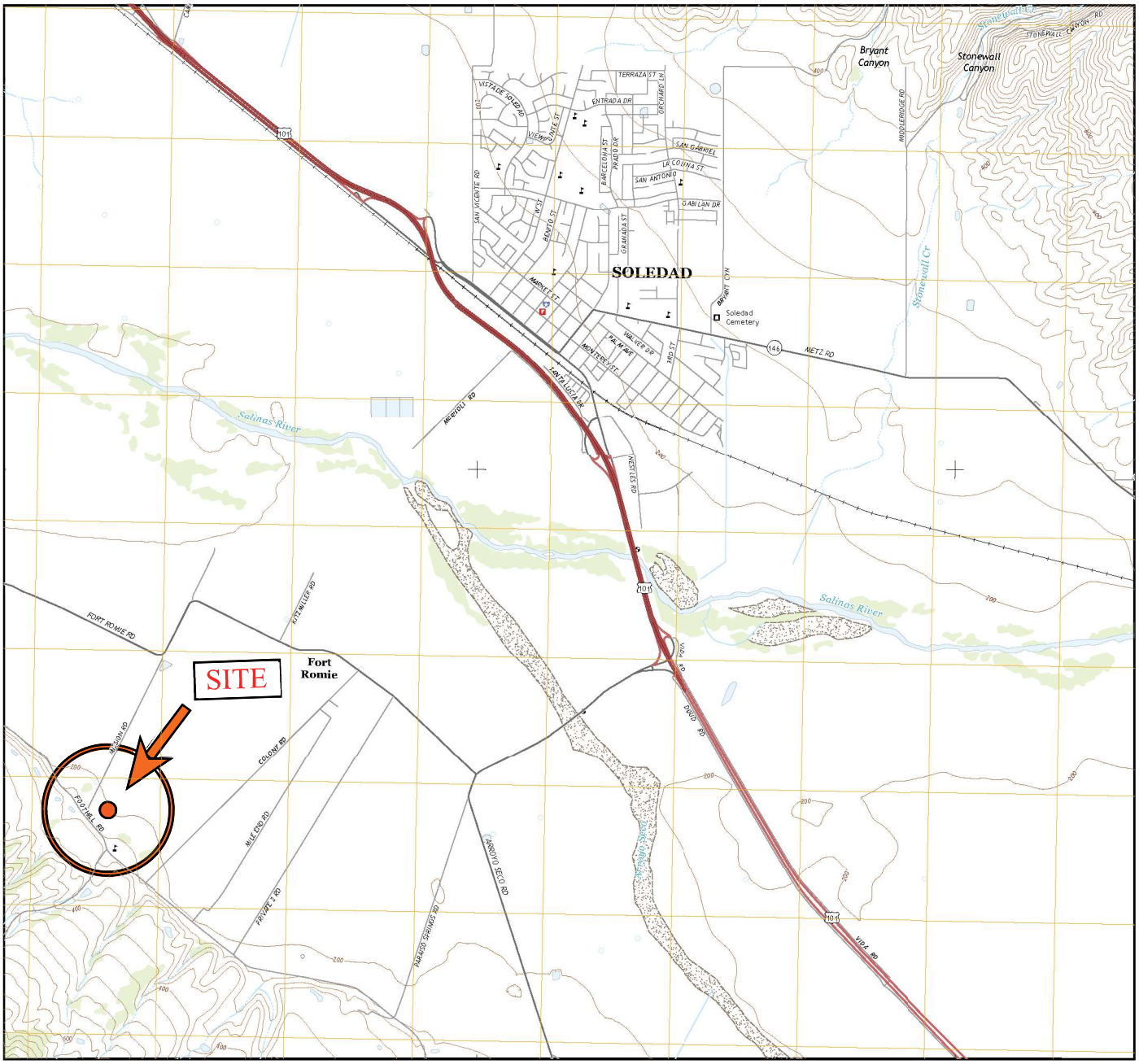
4. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural process or the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside of our control. This report should therefore be reviewed in light of future planned construction and then current applicable codes. This report should not be considered valid after a period of two (2) years without our review.

5. This report was prepared upon your request for our services in accordance with currently accepted standards of professional geotechnical engineering practice. No warranty as to the contents of this report is intended, and none shall be inferred from the statements or opinions expressed.

6. The scope of our services mutually agreed upon for this project did not include any environmental assessment or study for the presence of hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site.

APPENDIX A

Regional Site Map
Site Map Showing Test Borings
Key to Soil Classification
Log of Test Borings
Atterberg Limits



0 4000’ 8000’

Scale: 1 inch = 4000 feet

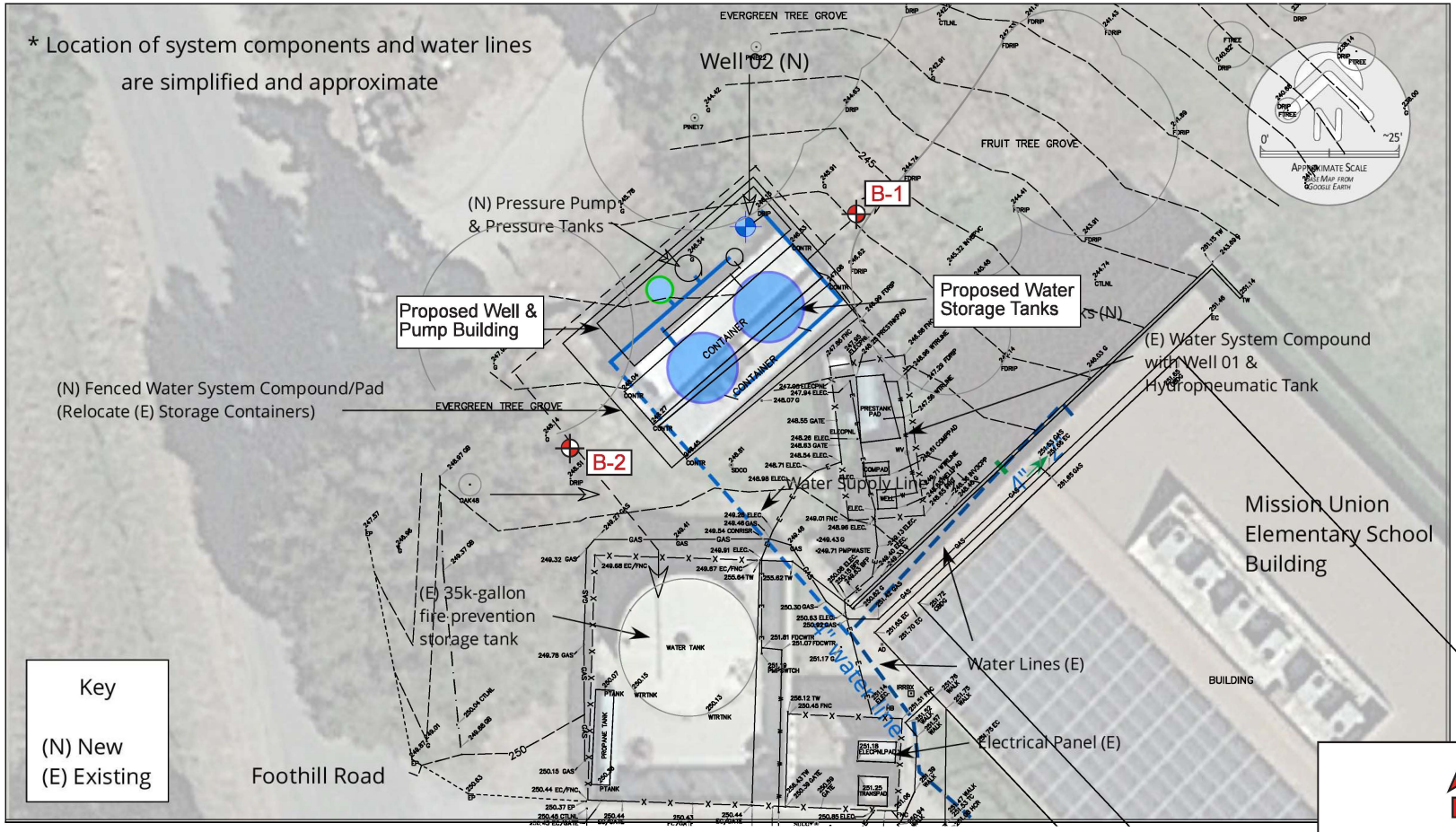
N

Base Map from USGS

Pacific Crest ENGINEERING INC

Regional Site Map
Mission Union Elementary School
Soledad, California

Figure No. 1
Project No. 2345
Date: 6/16/23



LEGEND

B-2 Approximate location of test boring

Base Map: Figure 4, Weber Hayes Associates, August 2022

Pacific Crest ENGINEERING INC

Site Map Showing Test Borings
Mission Union Elementary School Water Tank
Soledad, California

Figure No. 2
Project No. 2345
Date: 6/16/23

KEY TO SOIL CLASSIFICATION - COARSE GRAINED SOILS
UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2487 (Modified)

MAJOR DIVISIONS		FINES	GRADE/TYPE OF FINES	SYMBOL	GROUP NAME *
GRAVEL	More than 50% of coarse fraction is larger than No. 4 sieve size	<5%	Cu ≥ 4 and 1 ≤ Cc ≤ 3	GW	Well-Graded Gravel / Well-Graded Gravel with Sand
			Cu < 4 and/or 1 > Cc > 3	GP	Poorly Graded Gravel/Poorly Graded Gravel with Sand
		5-12%	ML or MH	GW - GM	Well-Graded Gravel with Silt / Well- Graded Gravel with Silt and Sand
				GP - GM	Poorly Graded Gravel with Silt / Poorly Graded Gravel with Silt and Sand
			CL, CI or CH	GW - GC	Well-Graded Gravel with Clay / Well-Graded Gravel with Clay and Sand
				GP - GC	Poorly Graded Gravel with Clay / Poorly Graded Gravel with Clay and Sand
		>12%	ML or MH	GM	Silty Gravel / Silty Gravel with Sand
			CL, CI or CH	GC	Clayey Gravel/Clayey Gravel with Sand
			CL - ML	GC - GM	Silty, Clayey Gravel/Silty, Clayey Gravel with Sand
SAND	50% or more of coarse fraction is smaller than No. 4 sieve size	<5%	Cu ≥ 6 and 1 ≤ Cc ≤ 3	SW	Well-Graded Sand / Well-Graded Sand with Gravel
			Cu < 6 and/or 1 > Cc > 3	SP	Poorly Graded Sand / Poorly Graded Sand with Gravel
		5-12%	ML or MH	SW - SM	Well-Graded Sand with Silt / Well- Graded Sand with Silt and Gravel
				SP - SM	Poorly Graded Sand with Silt / Poorly Graded Sand with Silt and Gravel
			CL, CI or CH	SW - SC	Well-Graded Sand with Clay / Well-Graded Sand with Clay and Gravel
				SP - SC	Poorly Graded Sand with Clay / Poorly Graded Sand with Clay and Gravel
		>12%	ML or MH	SM	Silty Sand / Silty Sand with Gravel
			CL, CI or CH	SC	Clayey Sand / Clayey Sand with Gravel
			CL - ML	SC - SM	Silty, Clayey Sand / Silty, Clayey Sand with Gravel

* The term "with sand" refers to materials containing 15% or greater sand particles within a gravel soil, while the term "with gravel" refers to materials containing 15% or greater gravel particles within a sand soil.

US STANDARD SIEVE SIZE:	3 inch	¾ inch	No. 4	No. 10	No. 40	No. 200	0.002 µm
	COARSE	FINE	COARSE	MEDIUM	FINE		
COBBLES AND BOULDERS	GRAVEL		SAND			SILT	CLAY

RELATIVE DENSITY

DESCRIPTION	STANDARD PENETRATION (BLOWS/FOOT)
VERY LOOSE	0 - 4
LOOSE	5 - 10
MEDIUM DENSE	11 - 30
DENSE	31 - 50
VERY DENSE	> 50

MOISTURE

DESCRIPTION	CRITERIA
DRY	Absence of moisture, dusty, dry to the touch
MOIST	Damp, but no visible water
WET	Visible free water, usually soil is below the water table

Pacific Crest ENGINEERING INC

Boring Log Explanation - CGS
Mission Union Elementary School
Soledad, California

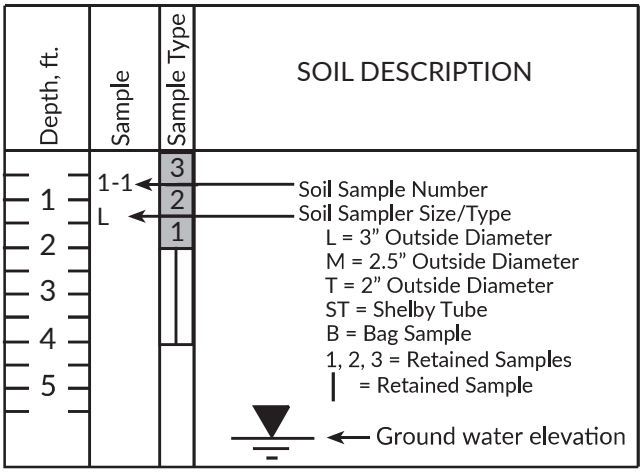
Figure No. 3
Project No. 2345
Date: 6/16/23

KEY TO SOIL CLASSIFICATION - FINE GRAINED SOILS (FGS)
UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2487 (Modified)

MAJOR DIVISIONS		SYMBOL	FINES	COARSENESS	SAND/GRAVEL	GROUP NAME
SILT AND CLAY	*LL < 35% Low Plasticity	**CL** Lean Clay PI > 7 Plots Above A Line -OR- **ML** Silt PI > 4 Plots Below A Line	<30% plus No. 200	<15% plus No. 200		Lean Clay / Silt
				15-30% plus No. 200	% sand ≥ % gravel	Lean Clay with Sand / Silt with Sand
					% sand < % gravel	Lean Clay with Gravel / Silt with Gravel
			≥30% plus No. 200	% sand ≥ % gravel	< 15% gravel	Sandy Lean Clay / Sandy Silt
					≥ 15% gravel	Sandy Lean Clay with Gravel / Sandy Silt with Gravel
				% sand < % gravel	< 15% sand	Gravelly Lean Clay / Gravelly Silt
					≥ 15% sand	Gravelly Lean Clay with Sand / Gravelly Silt with Sand
		CL - ML 4 < PI < 7	<30% plus No. 200	<15% plus No. 200		Silty Clay
				15-30% plus No. 200	% sand ≥ % gravel	Silty Clay with Sand
					% sand < % gravel	Silty Clay with Gravel
			≥30% plus No. 200	% sand ≥ % gravel	< 15% gravel	Sandy Silty Clay
					≥15% gravel	Sandy Silty Clay with Gravel
				% sand < % gravel	< 15% sand	Gravelly Silty Clay
					≥ 15% sand	Gravelly Silty Clay with Sand
	35% ≤ *LL < 50% Intermediate Plasticity	**CI**	<30% plus No. 200	<15% plus No. 200		Clay
				15-30% plus No. 200	% sand ≥ % gravel	Clay with Sand
					% sand < % gravel	Clay with Gravel
			≥30% plus No. 200	% sand ≥ % gravel	< 15% gravel	Sandy Clay
					≥ 15% gravel	Sandy Clay with Gravel
				% sand < % gravel	< 15% sand	Gravelly Clay
					≥ 15% sand	Gravelly Clay with Sand
	*LL > 50% High Plasticity	**CH** Fat Clay Plots Above A Line -OR- **MH** Elastic Silt Plots Below A Line	<30% plus No. 200	<15% plus No. 200		Fat Clay or Elastic Silt
				15-30% plus No. 200	% sand ≥ % gravel	Fat Clay with Sand Elastic Silt with Sand
					% sand < % gravel	Fat Clay with Gravel / Elastic Silt with Gravel
			≥30% plus No. 200	% sand ≥ % gravel	< 15% gravel	Sandy Fat Clay / Sandy Elastic Silt
					≥ 15% gravel	Sandy Fat Clay with Gravel / Sandy Elastic Silt with Gravel
				% sand < % gravel	< 15% sand	Gravelly Fat Clay / Gravelly Elastic Silt
					≥ 15% sand	Gravelly Fat Clay with Sand / Gravelly Elastic Silt with Sand

* LL = Liquid Limit
* PI = Plasticity Index

BORING LOG EXPLANATION



MOISTURE

DESCRIPTION	CRITERIA
DRY	Absence of moisture, dusty, dry to the touch
MOIST	Damp, but no visible water
WET	Visible free water, usually soil is below the water table

CONSISTENCY

DESCRIPTION	UNCONFINED SHEAR STRENGTH (KSF)	STANDARD PENETRATION (BLOWS/FOOT)
VERY SOFT	< 0.25	< 2
SOFT	0.25 - 0.5	2 - 4
FIRM	0.5 - 1.0	5 - 8
STIFF	1.0 - 2.0	9 - 15
VERY STIFF	2.0 - 4.0	16 - 30
HARD	> 4.0	> 30

Pacific Crest ENGINEERING INC

Boring Log Explanation - FGS
Mission Union Elementary School
Soledad, California

Figure No. 4
Project No. 2345
Date: 6/16/23

LOGGED BY MJM | DATE DRILLED 4/13/23 | BORING DIAMETER 8" HS | BORING NO. B1

DRILL RIG Exploration Geoservices - Mobile B61 | HAMMER TYPE Wireline - Downhole Hammer

Depth (feet)	Sample	Sample Type	Soil Description	USCS	Field Blow Counts	SPT "N" Value	Pocket Pen. (tsf)	Moisture Content (%)	Dry Density (pcf)	% Passing #200	Plasticity Index	Additional Lab Results
1	1-1 L		**CLAYEY SAND WITH GRAVEL:** Dark grayish brown (10YR 4/2), fine to medium grained, low plasticity, trace sub-angular to sub-rounded gravels up to 1" in diameter, mica flakes, trace organics, moist, loose	SC	6 6							
2		1			6	8		8.4	109.1	20.5	11	
3	1-2 T		Moist, loose		2 3							
4					4	7		8.7				
5	1-3 L				4 9							
6		1	**SAND WITH GRAVEL:** Brown (10YR 4/3), poorly graded, fine to medium grained sand, gravels are sub-angular to angular and up to 1½" in diameter,non-plastic, mica rich, moist, medium dense	SP	15	16		3.2	108.6	4.0		
7												
8												
9			Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh									
10	1-4 T		Slight decrease in fines, mechanically fractured gravel about 2" in diameter near 11', moist, dense		5 15							
11					16	31		4.8				
12												
13												
14			Lorem ipsum dolor sit amet,									
15	1-5 L		**SILTY SAND:** Brown (10YR 4/3), poorly graded, fine to medium grained, trace sub-angular to sub-rounded gravels up to ½" diameter, mica flakes, moist, medium dense	SM	8 10							
16		2 1			10	13		8.4	103.8	17.4		
17												
18												
19												
20	1-6 T		Moist, medium dense		6 9							
21					10	19		7.3				
22												
23												

Pacific Crest ENGINEERING INC

Log of Test Borings
Mission Union Elementary School
Soledad, California

Figure No. 5
Project No. 2345
Date: 6/16/23

LOGGED BY MJM | DATE DRILLED 4/14/23 | BORING DIAMETER 8" HS | BORING NO. 1

DRILL RIG Exploration Geoservices - Mobile B61 | HAMMER TYPE Wireline - Downhole Hammer

Depth (feet)	Sample	Sample Type	Soil Description	USCS	Field Blow Counts	SPT "N" Value	Pocket Pen. (tsf)	Moisture Content (%)	Dry Density (pcf)	% Passing #200	Plasticity Index	Additional Lab Results
24			**SILTY SAND:** Brown (10YR 4/3), poorly graded, fine to medium grained trace sub-angular to sub-rounded gravels up to 1" in diameter, mica flakes, moist, medium dense	SM								
25	1-7 L				14							
26		2			16							
		1			18	22		5.1	115.5			
27												
28												
29												
30	1-8 T		Slight increase in gravel content, moist, dense		16							
31					17							
					16	33		4.0				
32												
33												
34												
35	1-9 L		**SAND WITH SILT AND GRAVEL:** Brown (10YR 4/3), poorly graded, fine to medium grained, gravels are mechanically fractured and up to 2" in diameter mica flakes, moist, dense	SP -SM	15							
36		1			30	39		4.8	118.7	10.9		33.0% Gravel 56.1% Sand
37												
38												
39												
40	1-10 T		**SILTY SAND:** Brown (10YR 4/3), poorly graded, fine grained, mica flakes, moist, medium dense	SM	10							
41					11							
					12	23		4.0		25.3		
42												
43												
44												
45	1-11 L		**SAND WITH GRAVEL:** Brown (10YR 4/3), well graded, gravels are sub-angular to sub-rounded and up to 1½" in diameter, mica flakes, moist, dense	SP	20							
					30							37.4% Gravel
46		1			46	49		3.3	121.7	5.6		57.0% Sand

Pacific Crest ENGINEERING INC

Log of Test Borings
Mission Union Elementary School
Soledad, California

Figure No. 6
Project No. 2345
Date: 6/16/23

LOGGED BY MJM | DATE DRILLED 4/14/23 | BORING DIAMETER 8" HS | BORING NO. 1

DRILL RIG Exploration Geoservices - Mobile B61 | HAMMER TYPE Wireline - Downhole Hammer

Depth (feet)	Sample	Sample Type	Soil Description	USCS	Field Blow Counts	SPT "N" Value	Pocket Pen. (tsf)	Moisture Content (%)	Dry Density (pcf)	% Passing #200	Plasticity Index	Additional Lab Results
47			**SAND WITH GRAVEL:** Brown (10YR 4/3), well graded, gravels are sub-angular to sub-rounded and up to 1½" in diameter, mica flakes, moist, dense	SP								
48												
49												
50	1-12 T		Moist, dense		14							
51					14 23	37		4.5				
52			Boring terminated at 51½ feet. No groundwater encountered.									
53												
54												
55												
56												
57												
58												
59												
60												
61												
62												
63												
64												
65												
66												
67												
68												
69												

Pacific Crest ENGINEERING INC

Log of Test Borings
Mission Union Elementary School
Soledad, California

Figure No. 7
Project No. 2345
Date:6/16/23

LOGGED BY MJM DATE DRILLED 4/13/23 BORING DIAMETER 8" HS BORING NO. B2

DRILL RIG Exploration Geoservices - Mobile B61 HAMMER TYPE Wireline - Downhole Hammer

Depth (feet)	Sample	Sample Type	Soil Description	USCS	Field Blow Counts	SPT "N" Value	Pocket Pen. (tsf)	Moisture Content (%)	Dry Density (pcf)	% Passing #200	Plasticity Index	Additional Lab Results
1	2-1 L		**GRAVEL WITH CLAY AND SAND:** Very dark grayish brown, (10 YR 3/2), fine to medium gravel, trace sub-angular to sub-rounded gravels, up to 1" in diameter, trace rootlets, moist, loose	GP -GC	8							
2		2			8							LL = 23%
		1			6	9		6.3	105.9	11.8	8	PL = 15%
3	2-2 T		**SAND WITH SILT:** Dark grayish brown, fine to medium grained, trace sub-angular to sub-rounded gravels up to ½" in diameter, mica flakes, moist, loose	SP -SM	4							
					4							
4					4	8		6.8				
5	2-3 L		Moist, medium dense		6							
6		2			12							
		1			20	21		6.4	108.2	11.3		
7	2-4 T		Slight increase in silt gravel fraction near 8 feet, mica rich gravels are up to 3/4" in diameter, moist, medium dense		7							
					7							
8					8	15		8.9				
9			**SAND WITH SILT AND GRAVEL:** Brown (10 YR 4/3), fine to medium grained sand, gravels are sub-angular to angular and up to 1½" in diameter, large mechanically fractured gravel about 2½" in diameter in shoe of sampler, fines are non-plastic, gravels are mica rich, moist, dense	SP -SM								
10	2-5 L				18							
					20							
11		1			28	31		5.5	115.6	8.0		2½" rock fragment
12	2-6 T		Slight decrease in gravels near 12', moist, medium dense		16							
					16							
13					14	30		4.5				
14												
15	2-7 L		**SILTY SAND:** Brown (10YR 4/3), fine to medium grained, non-plastic, trace gravels are sub-rounded to sub-angular and up to 1" in diameter, moist, medium dense	SM	16							
					16							Gradation
16		1			14	20		6.9	107.8			
17												
18												
19												
20	2-8 T		Lack of gravels, moist, loose		4							
					5							
21					4	9		8.4		20.6		
22			Boring terminated at 21½ feet. No groundwater encountered.									
23												

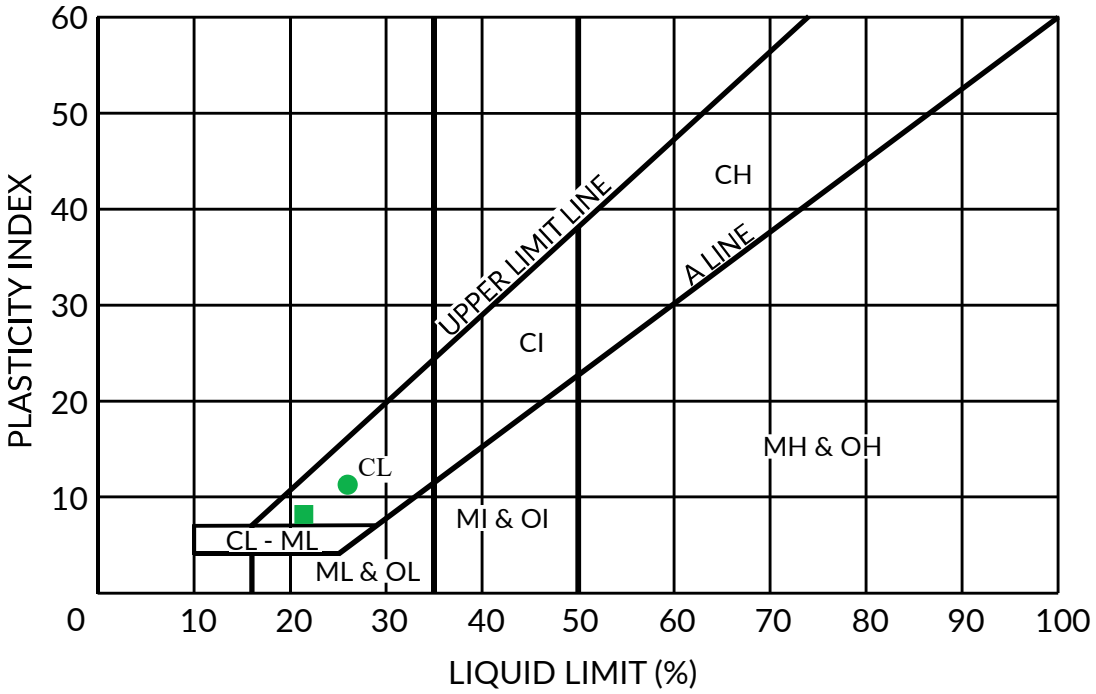
Pacific Crest ENGINEERING INC

Log of Test Borings
Mission Union Elementary School
Soledad, California

Figure No. 8
Project No. 2345
Date: 6/16/23

ATTERBERG LIMITS - ASTM D4318

PLASTICITY CHART



*This chart has been modified to include the intermediate classifications CI, MI and OI for clays and silts with liquid limits between 35 and 50.

SYMBOL	SAMPLE #	LL (%)	PL (%)	PI
●	**1-1-1**	**26**	**15**	**11**
■	**2-1-1**	**23**	**15**	**8**

APPENDIX B

Liquefaction Results

GEOLOGISMIKI
Geotechnical Software

SPT BASED LIQUEFACTION ANALYSIS REPORT

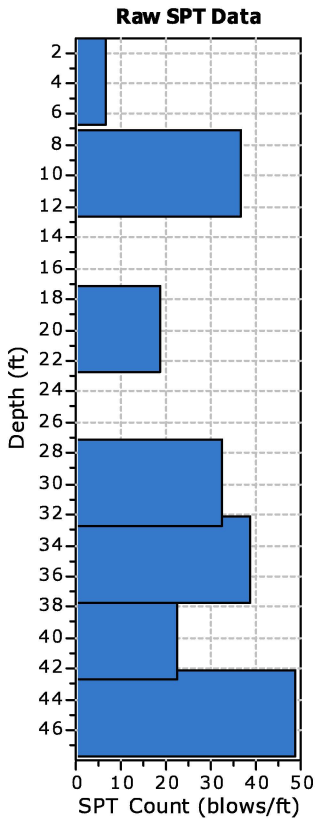
Project title : Mission Union Elemetnary School

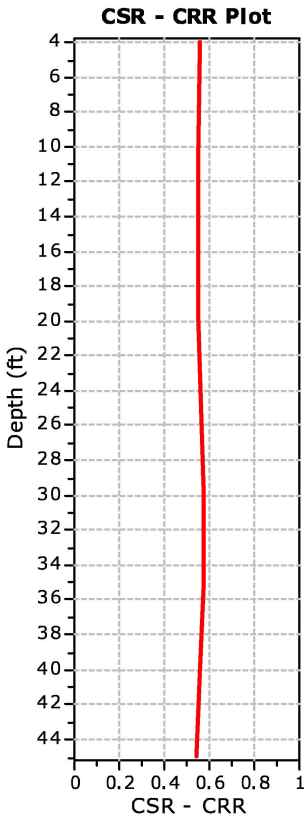
SPT Name: Site Model

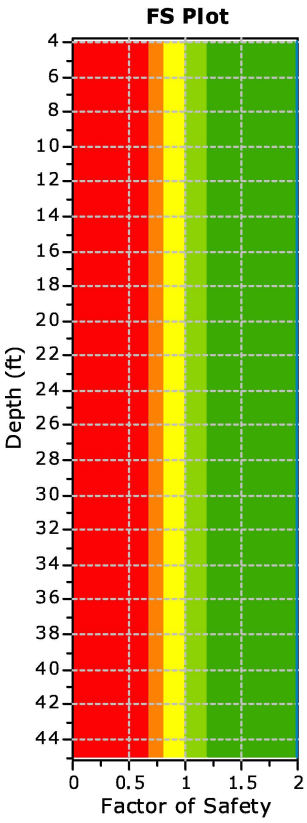
Location : Soeldad, California

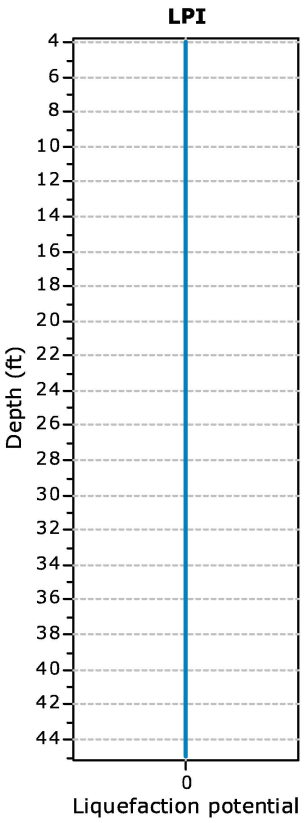
:: Input parameters and analysis properties ::

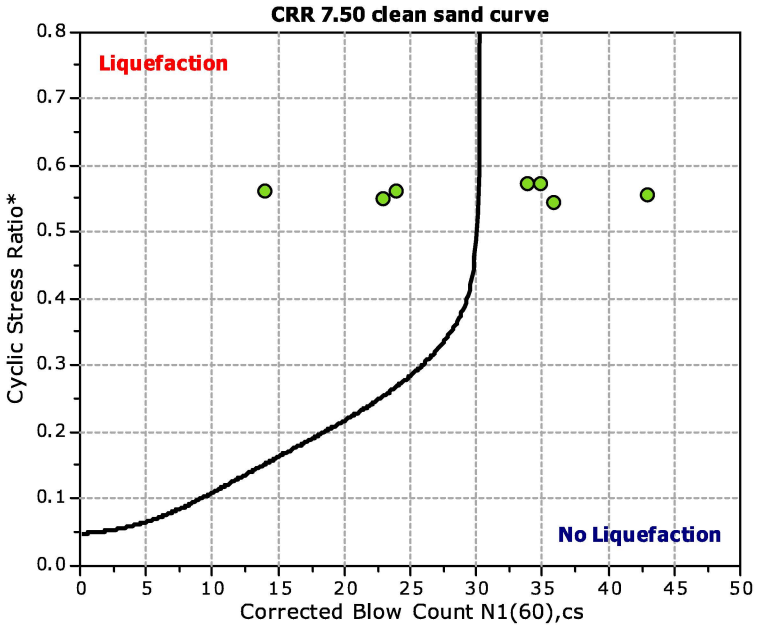
Analysis method:	NCEER 1998	G.W.T. (in-situ):	70.00 ft
Fines correction method:	NCEER 1998	G.W.T. (earthq.):	70.00 ft
Sampling method:	Standard Sampler	Earthquake magnitude M_w:	8.12
Borehole diameter:	200mm	Peak ground acceleration:	0.71 g
Rod length:	3.00 ft	Eq. external load:	0.00 tsf
Hammer energy ratio:	1.00		











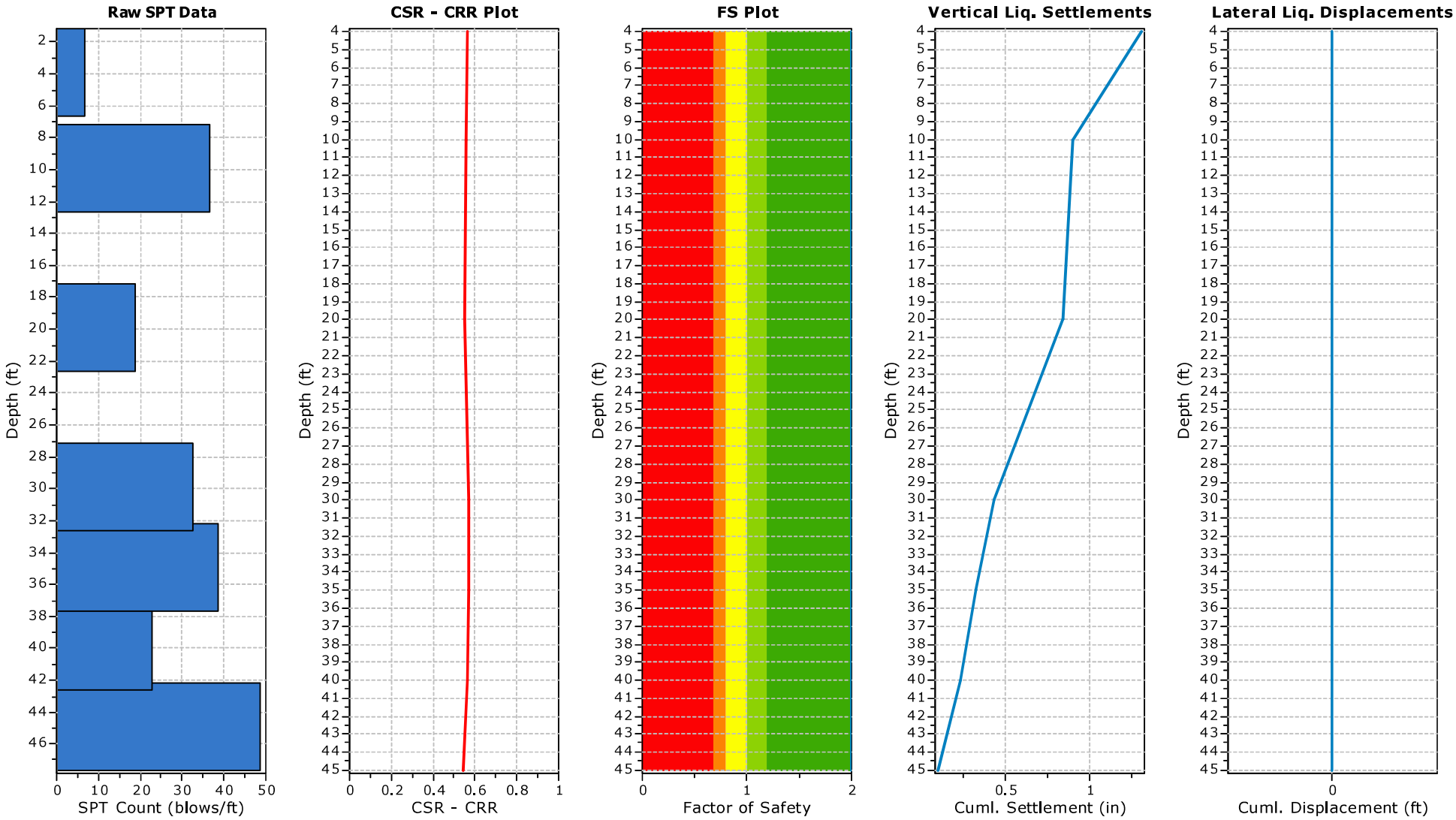
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Overall Liquefaction Assessment Analysis Plots ::



:: Field input data ::

Test Depth (ft)	SPT Field Value (blows)	Fines Content (%)	Unit Weight (pcf)	Infl. Thickness (ft)	Can Liquefy
4.00	7	20.00	115.00	6.00	Yes
10.00	37	4.00	115.00	8.00	Yes
20.00	19	15.00	110.00	13.00	Yes
30.00	33	15.00	115.00	7.00	Yes
35.00	39	10.00	120.00	6.00	Yes
40.00	23	25.00	115.00	4.50	Yes
45.00	49	5.00	120.00	7.00	Yes

Abbreviations

Depth: Depth at which test was performed (ft)
SPT Field Value: Number of blows per foot
Fines Content: Fines content at test depth (%)
Unit Weight: Unit weight at test depth (pcf)
Infl. Thickness: Thickness of the soil layer to be considered in settlements analysis (ft)
Can Liquefy: User defined switch for excluding/including test depth from the analysis procedure

:: Cyclic Resistance Ratio (CRR) calculation data ::

Depth (ft)	SPT Field Value	Unit Weight (pcf)	σ_v (tsf)	u_o (tsf)	σ'_{vo} (tsf)	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60}$	Fines Content (%)	α	β	$(N_1)_{60cs}$	$CRR_{7.5}$
4.00	7	115.00	0.23	0.00	0.23	1.70	1.00	1.15	0.75	1.00	10	20.00	3.61	1.08	14	4.000
10.00	37	115.00	0.57	0.00	0.57	1.36	1.00	1.15	0.75	1.00	43	4.00	0.00	1.00	43	4.000
20.00	19	110.00	1.13	0.00	1.13	0.97	1.00	1.15	0.95	1.00	20	15.00	2.50	1.05	23	4.000
30.00	33	115.00	1.70	0.00	1.70	0.79	1.00	1.15	1.00	1.00	30	15.00	2.50	1.05	34	4.000
35.00	39	120.00	2.00	0.00	2.00	0.73	1.00	1.15	1.00	1.00	33	10.00	0.87	1.02	35	4.000
40.00	23	115.00	2.29	0.00	2.29	0.68	1.00	1.15	1.00	1.00	18	25.00	4.29	1.11	24	4.000
45.00	49	120.00	2.59	0.00	2.59	0.64	1.00	1.15	1.00	1.00	36	5.00	0.00	1.00	36	4.000

Abbreviations

σ_v: Total stress during SPT test (tsf)
u_o: Water pore pressure during SPT test (tsf)
σ'_{vo}: Effective overburden pressure during SPT test (tsf)
C_N: Overburden corretion factor
C_E: Energy correction factor
C_B: Borehole diameter correction factor
C_R: Rod length correction factor
C_S: Liner correction factor
$N_{1(60)}$: Corrected N_{SPT} to a 60% energy ratio
α, β: Clean sand equivalent clean sand formula coefficients
$N_{1(60)cs}$: Corected $N_{1(60)}$ value for fines content
$CRR_{7.5}$: Cydic resistance ratio for M=7.5

:: Cyclic Stress Ratio calculation (CSR fully adjusted and normalized) ::

Depth (ft)	Unit Weight (pcf)	$\sigma_{v,eq}$ (tsf)	$u_{o,eq}$ (tsf)	$\sigma'_{vo,eq}$ (tsf)	r_d	α	CSR	MSF	$CSR_{eq,M=7.5}$	K_{sigma}	CSR^*	FS	
4.00	115.00	0.23	0.00	0.23	0.99	1.00	0.458	0.82	0.562	1.00	0.562	2.000	●
10.00	115.00	0.57	0.00	0.57	0.98	1.00	0.452	0.82	0.554	1.00	0.554	2.000	●
20.00	110.00	1.13	0.00	1.13	0.96	1.00	0.442	0.82	0.541	0.99	0.548	2.000	●
30.00	115.00	1.70	0.00	1.70	0.92	1.00	0.425	0.82	0.521	0.91	0.573	2.000	●
35.00	120.00	2.00	0.00	2.00	0.89	1.00	0.411	0.82	0.504	0.88	0.572	2.000	●
40.00	115.00	2.29	0.00	2.29	0.85	1.00	0.393	0.82	0.481	0.86	0.562	2.000	●
45.00	120.00	2.59	0.00	2.59	0.80	1.00	0.371	0.82	0.455	0.84	0.544	2.000	●

:: Cyclic Stress Ratio calculation (CSR fully adjusted and normalized) ::

Depth (ft)	Unit Weight (pcf)	$\sigma_{v,eq}$ (tsf)	$u_{o,eq}$ (tsf)	$\sigma'_{vo,eq}$ (tsf)	r_d	α	CSR	MSF	$CSR_{eq,M=7.5}$	K_{sigma}	CSR^*	FS

Abbreviations

$\sigma_{v,eq}$: Total overburden pressure at test point, during earthquake (tsf)
$u_{o,eq}$: Water pressure at test point, during earthquake (tsf)
$\sigma'_{vo,eq}$: Effective overburden pressure, during earthquake (tsf)
r_d : Nonlinear shear mass factor
α: Improvement factor due to stone columns
CSR : Cyclic Stress Ratio (adjusted for improvement)
MSF : Magnitude Scaling Factor
$CSR_{eq,M=7.5}$: CSR adjusted for M=7.5
K_{sigma}: Effective overburden stress factor
CSR^*: CSR fully adjusted (user FS applied) ***
FS: Calculated factor of safety against soil liquefaction

*** User FS: 1.00

:: Liquefaction potential according to Iwasaki ::

Depth (ft)	FS	F	wz	Thickness (ft)	I_L
4.00	2.000	0.00	9.39	6.00	0.00
10.00	2.000	0.00	8.48	6.00	0.00
20.00	2.000	0.00	6.95	10.00	0.00
30.00	2.000	0.00	5.43	10.00	0.00
35.00	2.000	0.00	4.67	5.00	0.00
40.00	2.000	0.00	3.90	5.00	0.00
45.00	2.000	0.00	3.14	5.00	0.00

Overall potential I_L : 0.00

I_L = 0.00 - No liquefaction
I_L between 0.00 and 5 - Liquefaction not probable
I_L between 5 and 15 - Liquefaction probable
I_L > 15 - Liquefaction certain

:: Vertical settlements estimation for dry sands ::

Depth (ft)	$(N_1)_{60}$	τ_{av}	p	G_{max} (tsf)	α	b	γ	ε_{15}	N_c	ε_{Nc} (%)	Δh (ft)	ΔS (in)
4.00	10	0.11	0.15	422.91	0.13	15457.64	0.00	0.00	21.59	0.29	6.00	0.415
10.00	43	0.26	0.39	972.00	0.15	8920.30	0.00	0.00	21.59	0.03	8.00	0.054
20.00	20	0.50	0.75	1103.65	0.17	5963.32	0.00	0.00	21.59	0.13	13.00	0.414
30.00	30	0.72	1.14	1545.48	0.19	4654.90	0.00	0.00	21.59	0.07	7.00	0.110
35.00	33	0.82	1.34	1692.58	0.20	4222.43	0.00	0.00	21.59	0.06	6.00	0.090
40.00	18	0.90	1.53	1596.23	0.21	3895.50	0.00	0.00	21.59	0.13	4.50	0.138
45.00	36	0.96	1.73	1943.36	0.22	3617.86	0.00	0.00	21.59	0.05	7.00	0.092

:: Vertical settlements estimation for dry sands ::

Depth (ft)	$(N_1)_{60}$	τ_{av}	p	G_{max} (tsf)	α	b	γ	ε_{15}	N_c	ε_{Nc} (%)	Δh (ft)	ΔS (in)

Cumulative settlemetns: 1.314

Abbreviations

τ_{av}: Average cydic shear stress
p: Average stress
G_{max}: Maximum shear modulus (tsf)
α, b: Shear strain formula variables
γ: Average shear strain
ε_{15}: Volumetric strain after 15 cydes
N_c: Number of cydes
ε_{Nc}: Volumetric strain for number of cydes N_c (%)
Δh: Thickness of soil layer (in)
ΔS: Settlement of soil layer (in)

APPENDIX C

Geologic Report

June 16, 2023 Project No. 2345-M289-B31

Craig Drizin
Principal Engineer
Weber Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Subject: **Geological Investigation**
Drinking Water Storage Tanks and Water System Upgrades
APN 165-031-008
36825 Foothill Road
Soledad, California 93960

Dear Mr. Drizin,

In accordance with your authorization, we have performed a geological investigation for the proposed drinking water storage tanks and water system upgrades to be constructed at Mission Union Elementary School in Soledad, California. The accompanying report presents our findings and recommendations along with the supporting evidence. The findings and recommendations presented in this report are contingent upon our review of the plans during the design phase of the project and geological observation where warranted during the construction phase of the project.

Sincerely,

PACIFIC CREST ENGINEERING INC.

Erik N. Zinn
Principal Geologist
P.G. #6854, C.E.G. #2139

TABLE OF CONTENTS

Plates 1 and 2 are located at the back of the report. **NOTE: Plates must accompany text of report for report to be considered complete.**

I. INTRODUCTION

The purpose of this investigation was to evaluate the geologic feasibility of constructing the proposed water tanks and supporting infrastructure on this site. We have investigated the potential geologic hazards relevant to the proposed development.

We were provided with the following documents for this project:

An electronic copy of "Topographic Survey – Mission Union Elementary School – 36825 Foothill Road, Soledad – Monterey County – California" prepared by Mid Coast Engineers, Job No. 22060TP1, dated May 18, 2022, intended publication scale 1"=20'.

An electronic copy of "Schematic and Map of Water System Improvements – Mission Union Elementary School, Soledad, CA", Figure 4, prepared by Weber Hayes Associates, dated August 202, intended publication scale 1"= 15 ½'.

For purposes of this report, "site" refers to the area proposed for the water tanks and associated pump building.

SCOPE OF GEOLOGICAL INVESTIGATION

Work performed during this study included:

1. A review of geologic and geotechnical engineering literature pertinent to the subject property, including:

    - Map Showing Relative Earthquake-Induced Landslide Susceptibility of Monterey County, California, Rosenberg, 2001.
    - Map Showing Liquefaction Susceptibility of Monterey County, California, Rosenberg, 2001.
    - Map Showing Relative Fault Hazards of Monterey County, California, Rosenberg, 2001.
    - Geographic Information System – Geologic Hazards Map for Monterey County, "Monterey County GIS" http://www.co.monterey.ca.us/government/departments-a-h/housing-community-development/monterey-county-gis-maps
    - Geologic Resources And Constraints – Monterey County, California, California, Rosenberg, 2001.

2. Examination and interpretation historical vertical stereo pair aerial photographs.

3. Review of small-diameter boring data obtained by our firm.

4. Analysis and interpretation of the geologic data and preparation of this report.

PROJECT LOCATION

The site is in the northwestern-most corner of the Mission Union Elementary school campus, at 36825 Foothill Road in Soledad, California. Please refer to the Topographic Index Map (Figure 1) in Appendix A for the general vicinity of the project site. Coordinates for site are as follows:

Latitude = 36.39037 degrees
Longitude = -121.36519 degrees

PROPOSED IMPROVEMENTS

It is our understanding, based on information provided to us Weber, Hayes and Associates, that the planned improvements will include: installation of two (2) 5,000-gallon polyurethane potable water storage tanks, construction of a new well and pump building to the northwest of the new 5,000-gallon storage tanks, and installation of water lines between the new tanks and, an existing 35,000-gallon storage tank and the nearby classrooms. We understand that the tanks and associated pump building will be founded on a structural slab. The tanks will have seismic strapping anchored into the concrete foundation. Minor grading on the order of maximum cuts and fills of 2 feet will be required to create a flat pad for the improvements.

II. REGIONAL GEOLOGIC SETTING

The subject site lies in the lower Salinas Valley, on the eastern flank of the Sierra De Salinas range, in the central portion of the Coast Ranges physiographic province of California . This portion of the Coast Ranges is formed by a series of rugged, linear ridges and valleys following the pronounced northwest to southeast structural grain of central California geology. The Sierra De Salinas is mostly underlain by a large, elongate prism of granitic and metamorphic basement rocks, known collectively as the Salinian Block. These rocks are separated from contrasting basement rock types to the northeast and southwest by the San Andreas and San Gregorio-Nacimiento strike-slip fault systems, respectively. Overlying the granitic basement rocks is a sequence of dominantly marine sedimentary rocks of Paleocene to Pliocene age and non-marine sediments of Pliocene to Pleistocene age (Figure 2).

Throughout the Cenozoic Era, this portion of California has been dominated by tectonic forces associated with lateral or "transform" motion between the North American and Pacific lithospheric plates, producing long, northwest-trending faults such as the San Andreas and San Gregorio, with horizontal displacements measured in tens to hundreds of miles. Accompanying the northwest direction of the horizontal (strike-slip) movement of the plates have been episodes of compressive stress, reflected by repeated episodes of uplift, deformation, erosion and subsequent redeposition of sedimentary rocks. Ongoing tectonic activity is most evident in the formation of a series of uplifted marine and fluvial terraces in this region. The Loma Prieta earthquake of 1989 is the most recent reminder of the geologic unrest in the region.

The Quaternary history of the lower Salinas Valley has been dominated by fluvial, marine and eolian deposition because the central Monterey Bay region has been relatively stable, while the northern Monterey Bay region has been tectonically uplifted. The earth materials in the vicinity of the study area are mostly fluvial and alluvial fan sediments shed off of the Sierra De Salinas to the east and graded to one or more Sangamon high stands of sea level (Dupré and Tinsley, 1980).

III. REGIONAL SEISMIC SETTING

California's broad system of strike-slip faulting has had a long and complex history. Some of these faults present a seismic hazard to the proposed development. The most important of these are the Rinconada, San Andreas, Monterey Bay-Tularcitos, and San Gregorio faults (Figures 2, 3 and Plate 2). These faults are either active or considered potentially active (Working Group On Northern California Earthquake Potential (WGONCEP), 1996; 1999 Working Group on California Earthquake Probabilities (WGOCEP), 1999; 2002 Working Group On California Earthquake Probabilities (WGOCEP), 2003; Cao et al., 2003). Each fault is discussed below. Locations of epicenters associated with the faults are shown in Figure 3. The intensity of seismic shaking that could affect the water tank site in the event of a future earthquake on one of these faults will be discussed in a later section.

RELIZ FAULT

A geologist named Lew Rosenberg prepared what we consider to be a cogent summary of the Reliz fault as part of his geological resources and constraints work for the County of Monterey (2001). We see no reason to further distill his summary from that report (Rosenberg, 2001). The following is an excerpt from his report:

Nickell (1931, p. 314) named the Reliz Canyon fault for an exposure near Reliz Canyon and considered it a branch of the King City fault. Schombel (1943, p. 469) also mapped the Reliz fault and showed the northern end as trending into the King City fault at an oblique angle. Snetsinger (1962) reported offset terraces near the mouth of the Arroyo Seco that he regarded the result of repeated movement along the Reliz fault. The fault is well exposed in a roadcut on the north side of the iron bridge that crosses the Arroyo Seco. North of Paraiso Springs, the Reliz fault is largely concealed beneath alluvial fans. Evidence for this concealed part of the Reliz fault includes deformed Paso Robles Formation beds, magnetic anomalies discovered as part of a geophysical survey, and changes in water well yields across the fault (Tinsley, 1975).

RINCONADA FAULT

Rosenber (2001) also did an excellent summary of the Rinconada Fault geological history, so we have excerpted his description from the same report as for the Reliz Fault:

The Rinconada fault zone as currently (2001) defined includes the Rinconada fault extending from the Big Pine fault to King City and the Reliz fault extending from near Greenfield to Spreckels. This fault zone is a significant tectonic element in the Coast Ranges because it is a through-going structure that has experienced right-lateral strike-slip displacement with estimates ranging from 11 miles (Durham, 1965) to 25 miles (Dibblee, 1976).

Locally, there are indications of late Quaternary movement along this zone such as steeply dipping Paso Robles Formation beds near Spreckels (Tinsley, 1975, p. 140), right-lateral offset of streams near Espinosa Canyon (Dibblee, 1976, p. 29–30), apparent truncation of probable late Pleistocene age alluvial fan deposits and surfaces near Williams Hill (Hart, 1985, p. 4), and approximately 16 feet of vertical offset of alluvial fan surfaces which have an estimated age of 300,000 to 400,000 years (Klaus, 1999).

Although definitive geologic evidence of Holocene surface rupture has not been found on the Rinconada fault, it is regarded as an earthquake source for the CDMG/USGS Probabilistic Seismic Hazards Assessment because of its slip rate (3 mm/yr), length (117 miles), and calculated maximum magnitude of 7.3 (Petersen and others, 1996, p. A-7).

San Andreas Fault

The San Andreas fault is active and represents the major seismic hazard in northern California (WGONCEP, 1996). The main trace of the San Andreas fault trends northwest-southeast and extends over 700 miles from the Gulf of California through the Coast Ranges to Point Arena, where the fault extends offshore.

Geologic evidence suggests that the San Andreas fault has experienced right-lateral, strike-slip movement throughout the latter portion of Cenozoic time, with cumulative offset of hundreds of miles. Surface rupture during historical earthquakes, fault creep, and historical seismicity confirm that the San Andreas fault and its branches, the Hayward, Calaveras, and San Gregorio faults, are all active today.

Historical earthquakes along the San Andreas fault and its branches have caused significant seismic shaking in the Monterey County area. The two largest historical earthquakes on the San Andreas to affect the area were the moment magnitude (M_w) 7.9 San Francisco earthquake of 18 April 1906 (actually centered near Olema) and the M_w 6.9 Loma Prieta earthquake of 17 October 1989. The San Francisco earthquake caused severe seismic shaking and structural damage to many buildings in Monterey County. The Loma Prieta earthquake appears to have caused more intense seismic shaking than the 1906 event in localized areas of the nearby Santa Cruz Mountains, even though its regional effects were not as extensive. There were also significant earthquakes in northern California along or near the San Andreas fault in 1838, 1865 and possibly 1890 (Sykes and Nishenko, 1984; WGONCEP, 1996).

Geologists have recognized that the San Andreas fault system can be divided into segments with “characteristic” earthquakes of different magnitudes and recurrence intervals (Working Group On California Earthquake Probabilities, 1988 and 1990). A more recent study by the Working Group On Northern California Earthquake Potential (WGONCEP) in 1996 has redefined the segments and the characteristic earthquakes for the San Andreas fault system in northern and central California. Two “locking” overlapping segments and one creeping segment of the San Andreas fault system represent the greatest potential hazard to the subject property.

The nearest segment of the San Andreas fault, dubbed the “creeping zone” segment by the WGONCEP (1996), runs roughly between the town of San Juan Bautista and the Carrizo Plains. This segment is treated as fully creeping by the WGONCEP (1996) and is considered to be adequately modeled with background seismicity events no greater than M_w ~6.

The overlapping locking segments are located slightly north of the subject property. The first segment is defined by the rupture that occurred from the Mendocino triple junction to San Juan Bautista along the San Andreas fault during the great M_w 7.9 earthquake of 1906. The WGONCEP (1996) has hypothesized that this "1906 rupture" segment experiences earthquakes with comparable magnitudes in independent cycles about two centuries long.

The second segment is defined by the rupture zone of the M_w 6.9 Loma Prieta earthquake, despite the fact that the oblique slip and focal depth of this event do not fit the typical, right-lateral strike-slip event on the San Andreas fault. Although it is uncertain whether this "Santa Cruz Mountains" segment has a characteristic earthquake independent of great San Andreas fault earthquakes, the WGONCEP (1996) has assumed an “idealized” earthquake of M_w 7.0 with the same right-lateral slip as the 1989 Loma Prieta earthquake, but having an independent segment recurrence interval of 138 years and a multi-segment recurrence interval of 400 years.

The 2002 WGOCEP (2003) segmentation model is largely similar to that adopted by WGONCEP, although they have added far more complexity to the model, and have reduced the forecasted magnitudes for the different segments. Cao et al. appears to have largely adopted the earthquake magnitudes issued by the 2002 WGOCEP. The magnitudes for the sundry segments are as follows: Parkfield segment - Mw 6.5, Creeping Segment - Mw 6.2, Santa Cruz Mountains - Mw 7.0, Peninsula segment - Mw 7.1, North Coast North Segment - Mw 7.3, North Coast South Segment - Mw 7.4. The most significant change in modeling the San Andreas Fault Zone by 2002 WGOCEP and Cao et al. (2003) is the elimination of a the penultimate event, the 1906 Mw 7.9 earthquake.

Monterey Bay – Tularcitos Fault Zone

The Monterey Bay-Tularcitos fault zone is 6 to 9 miles wide, about 25 miles long, and consists of many en échelon faults identified during shipboard seismic reflection surveys (Greene, 1977). The fault zone trends northwest-southeast and intersects the coast in the vicinity of Seaside and Ford Ord. At this point, several onshore fault traces have been tentatively correlated with offshore traces in the heart of the Monterey Bay-Tularcitos fault zone (Greene, 1977; Clark et al., 1974; Burkland and Associates, 1975). These onshore faults are, from southwest to northeast, the Tularcitos-Navy, Berwick Canyon, Chupines, Seaside, and Ord Terrace faults. Only the larger of these faults, the Tularcitos-Navy and Chupines, are shown on Figure 2. It must be emphasized that these correlations between onshore and offshore portions of the Monterey Bay-Tularcitos fault zone are only tentative; for example, no concrete geologic evidence for connecting the Navy and Tularcitos faults under the Carmel Valley alluvium has been observed, nor has a direct connection between these two faults and any offshore trace been found.

Outcrop evidence indicates a variety of strike-slip and dip-slip movement associated with onshore and offshore traces. Earthquake studies suggest the Monterey Bay-Tularcitos fault zone is predominantly right-lateral, strike-slip in character (Greene, 1977). Stratigraphically, both offshore and onshore fault traces in this zone have displaced Quaternary beds and, therefore, are considered potentially active (Buchanan-Banks et al., 1978). One offshore trace, which aligns with the trend of the Navy fault, has displaced Holocene beds and is therefore active by definition (Buchanan-Banks et al., 1978).

Seismically, the Monterey Bay-Tularcitos fault zone may be historically active. The largest historical earthquakes *tentatively* located in the Monterey Bay-Tularcitos fault zone are two events, estimated at 6.2 on the Richter Scale, in October 1926 (Greene, 1977). Because of possible inaccuracies in locating the epicenters of these earthquakes, it is possible that they actually occurred on the nearby San Gregorio fault zone (Greene, 1977).

Another earthquake in April 1890 might be attributed to the Monterey Bay-Tularcitos fault zone (Burkland and Associates, 1975); this earthquake had an estimated Modified Mercalli Intensity of VII (Table 1) for Monterey County on a whole.

The WGONCEP (1996) has assigned an earthquake of M_w 7.1 with an effective recurrence interval of 2,600 years to the Monterey Bay-Tularcitos fault zone, based on Holocene offshore offsets. Petersen et al. (1996) have a similar earthquake magnitude, but for a recurrence interval of 2,841 years. Their earthquake is based on a composite slip rate of 0.5 millimeters per year (after Rosenberg and Clark, 1995).

Cao et al. (2003) has developed a model for the Monterey Bay fault zone that combines slip rates of the different segments, resulting in a composite slip rate of 0.5 mm per year and a forecasted earthquake of Mw 7.3, with no stated recurrence interval. The Cao et al. (2003) model adopted

TABLE 1 - Modified Mercalli Intensity Scale	
The modified Mercalli scale measures the intensity of ground shaking as determined from observations of an earthquake's effect on people, structures, and the Earth's surface. Richter magnitude is not reflected. This scale assigns to an earthquake event a Roman numeral from I to XII as follows:	
I	Not felt by people, except rarely under especially favorable circumstances.
II	Felt indoors only by persons at rest, especially on upper floors. Some hanging objects may swing.
III	Felt indoors by several. Hanging objects may swing slightly. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV	Felt indoors by many, outdoors by few. Hanging objects swing. Vibration like passing of heavy trucks; or sensation of a jolt like a heavy ball striking the walls. Standing automobiles rock. Windows, dishes, doors rattle. Wooden walls and frame may creak.
V	Felt indoors and outdoors by nearly everyone; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset; some dishes and glassware broken. Doors swing; shutters, pictures move. Pendulum clocks stop, start, change rate. Swaying of tall trees and poles sometimes noticed.
VI	Felt by all. Damage slight. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Knickknacks and books fall off shelves; pictures off walls. Furniture moved or overturned. Weak plaster and masonry cracked.
VII	Difficult to stand. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary buildings; considerable in badly designed or poorly built buildings. Noticed by drivers of automobiles. Hanging objects quiver. Furniture broken. Weak chimneys broken. Damage to masonry; fall of plaster, loose bricks, stones, tiles, and unbraced parapets. Small slides and caving in along sand or gravel banks. Large bells ring.
VIII	People frightened. Damage slight in specially designed structures; considerable in ordinary substantial buildings, partial collapse; great in poorly built structures. Steering of automobiles affected. Damage or partial collapse to some masonry and stucco. Failure of some chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed pilings broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX	General panic. Damage considerable in specially designed structures; great in substantial buildings, with some collapse. General damage to foundations; frame structures, if not bolted, shifted off foundations and thrown out of plumb. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground; liquefaction.
X	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Landslides on river banks and steep slopes considerable. Water splashed onto banks of canals, rivers, lakes. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI	Few, if any masonry structures remain standing. Bridges destroyed. Broad fissures in ground; earth slumps and landslides widespread. Underground pipelines completely out of service. Rails bent greatly.
XII	Damage nearly total. Waves seen on ground surfaces. Large rock masses displaced. Lines of sight and level distorted. Objects thrown upward into the air.

implicitly assumes that all the assessed segments in the Monterey Bay fault zone each have an independent slip rate of 0.1 mm per year (based upon the one slip rate developed by Rosenberg and Clark, 1995 for the Tularcitos segment), and essentially assigns the composite slip rate to the Tularcitos trace of the Monterey Bay fault zone

San Gregorio Fault

The San Gregorio fault, as mapped by Greene (1977), Weber and Lajoie (1974), and Weber et al. (1995) skirts the coastline of Santa Cruz County northward from Monterey Bay, and trends onshore at Point Año Nuevo. Northward from Año Nuevo, it passes offshore again, to connect with the San Andreas fault near Bolinas. Southward from Monterey Bay, it may trend onshore north of Big Sur (Greene, 1977) to connect with the Palo Colorado fault, or continue southward through Point Sur to connect with the Hosgri fault in south-central California. Based on these two proposed correlations, the San Gregorio fault zone has a length of at least 100 miles and possibly as much as 250 miles.

The landward extension of the San Gregorio fault at Point Año Nuevo shows evidence of late Pleistocene (Buchanan-Banks et al., 1978) and Holocene displacement (Weber and Cotton, 1981). Although stratigraphic offsets indicate a history of horizontal and vertical displacements, the San Gregorio is considered predominantly right-lateral strike slip by most researchers (Greene, 1977; Weber and Lajoie, 1974; and Graham and Dickinson, 1978).

In addition to stratigraphic evidence for Holocene activity, the historical seismicity in the region is partially attributed to the San Gregorio fault (Greene, 1977). Due to inaccuracies of epicenter locations, even the magnitude 6+ earthquakes of 1926, tentatively assigned to the Monterey Bay fault zone, may have actually occurred on the San Gregorio fault (Greene, 1977).

The NCEP (1996) has divided the San Gregorio fault into the "San Gregorio" and "San Gregorio, Sur Region" segments. The segmentation boundary is located west of the Monterey Bay, where the fault appears to have a right step-over. The San Gregorio fault has been assigned a slip rate that results in a M_w 7.3 earthquake with a recurrence interval of 400 years. This is based on the preliminary results of a paleoseismic investigation at Seal Cove by Lettis and Associates (see NCEP, 1996) and on regional mapping by Weber et al. (1995). The Sur Region segment has been assigned a slip rate that results in a M_w 7.0 earthquake with an effective recurrence interval of 400 years (coinciding with the recurrence interval for the other segment). The Sur Region earthquake was derived from an assumed slip rate similar to that of the Hosgri fault.

2002 WG and Cao et al. (2003) has adopted a model similar to the NCEP (1996), essentially renaming the San Gregorio segment the “San Gregorio North” segment, and downgrading the forecasted earthquake on this segment to a Mw 7.2, and renaming the San Gregorio, Sur Region segment the San Gregorio South segment, retaining the forecasted earthquake of Mw 7.0.

IV. SITE GEOLOGIC SETTING

The Geologic Site Map And Cross Section (Plate 1) graphically depict relevant geologic information for the subject property. See also the Local Geologic Index Map (Plate 2) for information of a more general nature.

Topography

The site occupies a very gently sloping lot on the school grounds that descends to the east (Figure 1 and Plate 1) From a regional perspective, the property is located atop an old abandoned alluvial fan (Plate 2).

Earth Materials

Rosenberg (2001, Plate 2)has mapped the site as lying upon an undifferentiated Holocene alluvial fan, up against an older alluvial fan labeled as "alluvial fan deposits of Chualar", which is consistent with our findings. Based upon the data procured from the small diameter borings advanced by our firm in April 2023, the site is underlain by more than 50 feet of interbedded and interfingering, flat-lying sand, silt and gravel, all belonging to the Holocene alluvial fan formation (after Rosenberg, 2001).

Our firm has selected Site Class D in developing the seismic shaking site coefficients and seismic ground motion values, based on the procedures outlined in publication AWWA D100-21 in conjunction with the applicable sections of publication ASCE 7-16. See the Geotechnical Investigation report to which this report is appended for more details.

Drainage and Groundwater

The site lies on the gently sloping fan surface and there are no drainage facilities guiding storm water toward or away from the site. The Project Civil Engineer will presumably develop drainage from the new development.

No groundwater was encountered up to 51 ½ feet below the ground surface for this project, based upon the deepest small-diameter boring advanced by our firm. This is notable, given that our borings were drilled in the spring after an unusually wet storm season.

Nonetheless, the deep groundwater conditions encountered reflect a brief snapshot in time. It must be anticipated that perched and regional groundwater conditions may vary in the future from those encountered in April 2023 and could fluctuate with variations in rainfall, runoff, irrigation and other conditional changes. We do think, though, that it is unlikely for the water table to rise to the extent that it would completely saturate the upper 50 feet of sediments and contribute to an elevated liquefaction hazard.

V. GEOLOGIC HAZARDS

In our opinion, the primary geologic hazard that could potentially affect the site is intense seismic shaking.

Surface Fault Ground Rupture Hazard

We considered the possibility of surface fault ground rupture related to active faulting, but the nearest mapped active or potentially active fault trace (of the Reliz Fault) is located 1 ¼ mile to the west of the site (see Plate 2). We did not observe any geomorphic evidence of active faulting, such as tonal lineaments, vegetative lineaments, linear swales, etc., at that tie. Therefore it is our opinion that the potential surface fault ground rupture hazard to occur within the design life of the water tanks is low.

Seismic Shaking Hazard

Seismic shaking at the site will be intense during the next major earthquake along local fault systems, particularly the Reliz fault southwest of the site, in the Salinas Valley at the base of the Santa Lucia Range front. It is important that recommendations regarding seismic shaking be used in the design for the proposed development.

Our firm has developed seismic site coefficients and seismic ground motion parameters for the project using the procedures outlined in publication AWWA D100-21 in conjunction with applicable sections of ASCE 7-16. The reader should refer to the "Seismic Shaking and Seismic Design Parameters" section of the Geotechnical Investigation report to which this report is appended.

Liquefaction and Lateral Spreading

The site is depicted as being within a low liquefaction hazard zone on the Monterey County GIS Hazard Maps and Map Showing Liquefaction Susceptibility of Monterey County (Rosenberg, 2001). The density of the soils encountered in the small-diameter borings and the lack of any groundwater within the upper 50 feet of soil appears to corroborate this designation. Consequently, it is our opinion that the potential for liquefaction to occur during the design life of the water tanks is low.

Liquefaction induced lateral spreading occurs when a liquefied soil mass fails toward an open slope face or fails on an inclined topographic slope. Since the site has a low potential for liquefaction, the potential for lateral spreading is also considered low.

Seismically Induced Settlement

Seismically induced settlement occurs when intergranular void spaces compress during a loading event. The impacts of this process were evaluated by our firm for the upper 50 feet of soil column under seismic "dynamic" loading to assess this hazard. For further details and the final assessment, refer to the "Sesimically Induced Settlement" section of the Geotechnical Investigation report to which this report is appended.

LANDSLIDING

The site is located on a gently inclined fan surface and there is no evidence of landslides cutting the Holocene age fan surface anywhere near the site. The inclination of the fan surface is simply to low to accommodate any form of landsliding. Therefore, it is our opinion that potential for landsliding to occur within the future design life of the water tanks is low.

VI. FINDINGS

Based on the information gathered and analyzed in the steps outlined above, it is our opinion that the site is geologically suitable for the proposed construction of water tanks and supporting infrastructure and will be subject to “low ” and “lowest possible” risks as defined in Appendix B, provided our recommendations are followed. Appendix B should be reviewed in detail by the design team and developer and all property owners to determine whether a "low" and “lowest possible” risk as defined in the appendix are acceptable. If this level of risk is unacceptable to the design team, developer and the property owners, then the geologic hazards in question should be mitigated to reduce the corresponding risks to an acceptable level.

In our opinion, the primary geologic hazard that could potentially affect the site is intense seismic shaking. This hazard presents a greater than “lowest possible risk” and should be mitigated to bring it down to that level. If the development design complies with the seismic shaking parameters provided in the Geotechnical Investigation report and the recommendations issued regarding that hazard, then the risk can be lowered to the appropriate level through mitigation.

There is no geological evidence whatsoever of faulting anywhere near the site. The nearest mapped active or potentially active fault trace (of the Reliz Fault) is located 1 ¼ mile to the west of the site (see Plate 2). Therefore, it is our opinion that the potential surface fault ground rupture hazard to occur within the design life of the water tanks is low, corresponding to a “lowest possible risk”.

The site is depicted as being within a low liquefaction hazard zone on the Monterey County GIS Hazard Maps and Map Showing Liquefaction Susceptibility of Monterey County (Rosenberg, 2001). The density of the soils encountered in the small-diameter borings and the lack of any groundwater within the upper 50 feet of soil appears to corroborate this designation. Consequently, it is our opinion that the potential for liquefaction to occur during the design life of the water tanks is low, corresponding to a ”lowest possible risk” for the project.

Liquefaction induced lateral spreading occurs when a liquefied soil mass fails toward an open slope face or fails on an inclined topographic slope. Since the site has a low potential for liquefaction, the potential for lateral spreading is also considered low, corresponding to a “lowest possible risk” for the project.

The possibility of seismically-induced settlement were considered to be potentially high for the site. Our firm evaluated the upper 50 feet of soil under seismic “dynamic” loading to characterized this hazard. The potential settlements were calculated and recommendations were issued for this process by our firm. If the proposed development complies with the recommendations for this hazard, it will mitigate the risk to an acceptable level of “lowest possible risk”. For further details and the final assessment, refer to the “Sesimically Induced Settlement” section of the Geotechnical Investigation report to which this report is appended.

The site is simply too gently sloped and complete bereft of any evidence on landsliding on the Holocene fan surface. Therefore, it is our opinion that potential for landsliding to occur within the future design life of the water tanks is low, corresponding to a "lowest possible risk".

We do not have grading and drainage plans to review at this time, but it is our understanding that there will be very little grading done for the proposed development. In our opinion, collected stormwater should be guided to away from the development area and disposed of in a manner that have little impact on the proposed and existing structures at the site.

VII. RECOMMENDATIONS

1. All analyses should consider the different seismic shaking parameters given in the seismic shaking hazards section of the Geotechnical Investigation report. The project engineers and designer should review the seismic shaking parameters and choose a value appropriate for their particular analyses.

2. Surface water drainage is the responsibility of the project civil engineer. The following recommendations should be considered by the Project Civil Engineer of record for the project:
    a. Surface water must not be allowed to pond or be trapped adjacent to foundations, or on building pads and parking areas.
    b. All roof eaves should be guttered, with the outlets from the downspouts provided with adequate capacity to carry the storm water away from structures to reduce the possibility of soil saturation and erosion. The connection should be in a closed conduit which discharges at an approved location away from structures and graded areas.
    c. Slope failures can occur where surface drainage is allowed to concentrate on unprotected slopes. Appropriate landscaping and surface drainage control around the project area is imperative to minimize the potential for shallow slope failures and erosion. Stormwater discharge locations should not be located at the top or on the face of any slope.
    d. Final grades, including impervious surfaces, should be provided with positive gradient away from all foundation elements. Soil grades should slope away from foundations. Concentrations of surface runoff should be handled by providing appropriate drainage measures, such as paved or lined ditches, catch basins, etc.
    e. Irrigation activities at the site should be done in a controlled and reasonable manner.
    f. The storm drainage should be closely observed through the first season of significant precipitation, in order to assess their performance and resolve any issues that arise if warranted.
    g. The building and surface drainage facilities must not be altered, nor any filling or excavation work performed in the area without first consulting Pacific Crest Engineering Inc. Surface drainage improvements developed by the Project Civil Engineer of Record must always be maintained by the property owner, as improper drainage provisions can produce undesirable affects.

3. We recommend that our firm be provided the opportunity to review the final design and specifications in order that our recommendations may be properly interpreted and implemented in the design and specification. If our firm is not accorded the privilege of making the recommended review, we can assume no responsibility for misinterpretation of our recommendations.
4. We recommend that a representative from our firm be retained to observe all cuts and pier holes made during grading for the foundation, prior to construction of the footings. This includes key ways excavated for any engineered fills.

VIII. INVESTIGATIVE LIMITATIONS

~~1.~~ This geological report was prepared specifically for Mission Union Elementary School for the specific project and location described in the body of this report. This report and the recommendations included herein should be utilized for this specific project and location exclusively. This Geological Investigation should not be applied to nor utilized on any other project or project site.

2. The recommendations of this report are based upon the assumption that the geological conditions do not deviate from those disclosed in this report. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that planned at the time, our firm should be notified so that supplemental recommendations can be provided.

3. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project and incorporated into the plans, and that the necessary steps are taken to ensure that the Contractors and Subcontractors carry out such recommendations in the field.

4. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural process or the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or partially, by changes outside of our control. This report should therefore be reviewed in light of future planned construction and then current applicable codes. This report should not be considered valid after a period of two (2) years without our review.

5. This report was prepared upon your request for our services in accordance with currently accepted standards of professional geological practice. No warranty as to the contents of this report is intended, and none shall be inferred from the statements or opinions expressed.

6. The scope of our services mutually agreed upon for this project did not include any environmental assessment or study for the presence of hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site.

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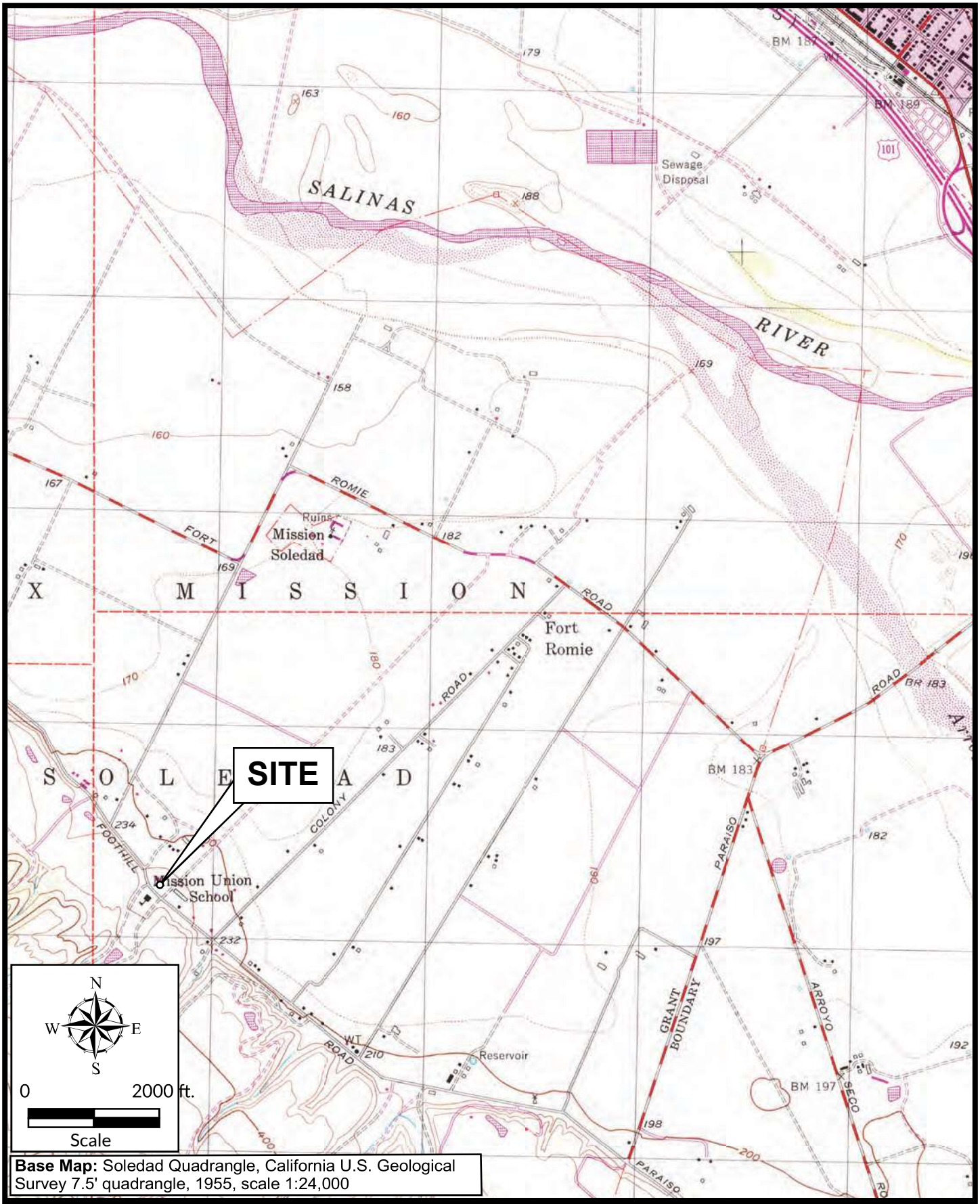
APPENDIX A

FIGURES

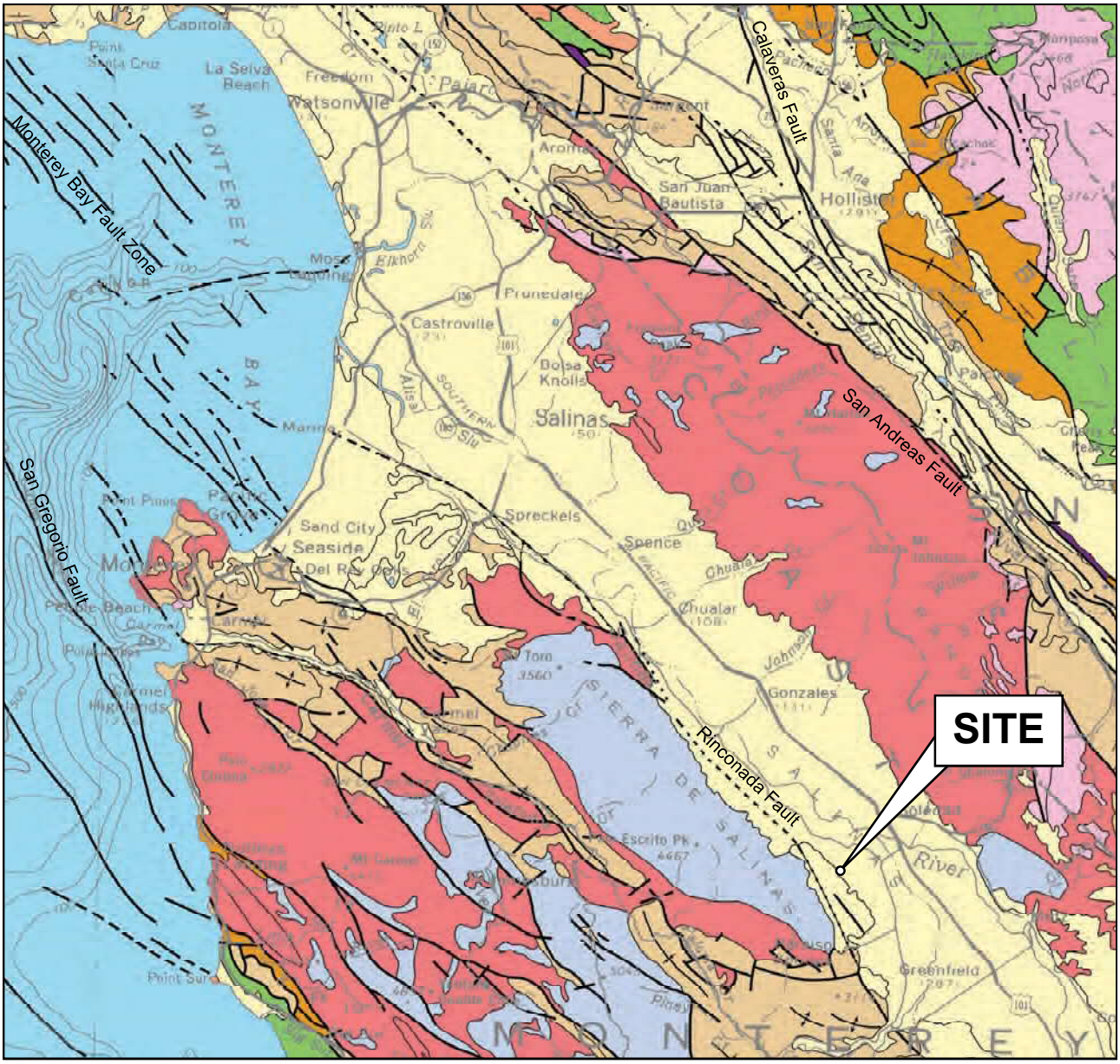


Base Map: Soledad Quadrangle, California U.S. Geological Survey 7.5' quadrangle, 1955, scale 1:24,000

Pacific Crest ENGINEERING INC

Topographic Index Map
Mission Union Elementary School
36825 Foothill Road
Soledad, California

FIGURE #
1
JOB #
2345



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Legend

Geologic Units

- Quaternary Deposits
- Quaternary Volcanics
- Tertiary Sedimentary Rocks
- Tertiary Volcanic Rocks
- Pre-Tertiary Sedimentary Rocks
- Pre-Tertiary Volcanic Rocks
- Grantic Intrusive Rocks
- Franciscan Complex
- Ultramafic Rocks
- Pre-Tertiary Metamorphic Rock
- Pre-Cambrian Metamorphic and Igneous Rocks

Symbols

- contact
- fault, certain
- fault,approx. located
- fault, concealed or inferred
- anticline
- monocline
- syncline

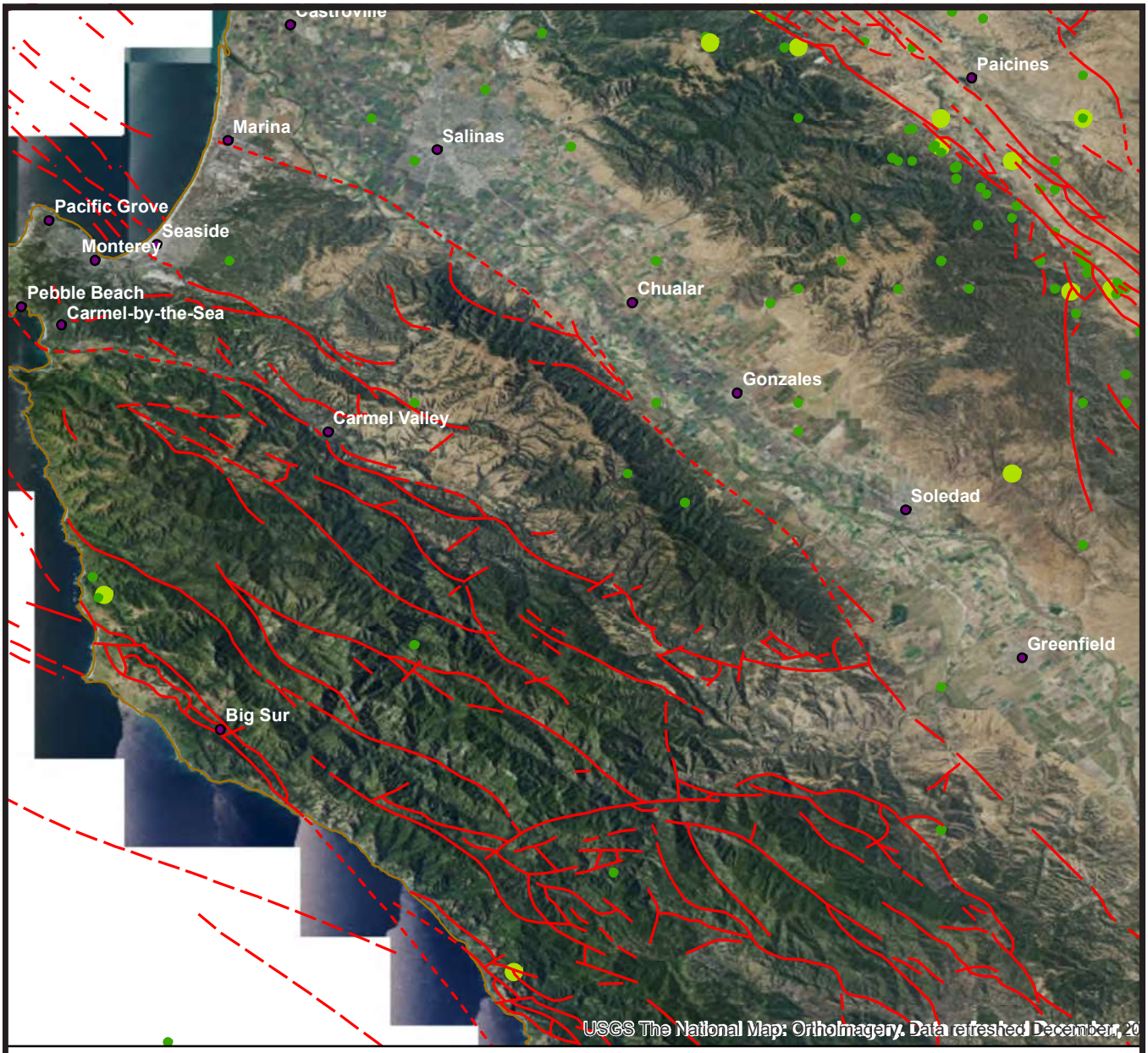
N W E S

Miles
0 5 10 20
Scale 1:500,000

Pacific Crest ENGINEERING INC

Regional Geologic Index Map
Mission Union Elementary School
36825 Foothill Road
Soledad, California

FIGURE # 2
JOB # 2345



Seismicity Information: Magnitude 4 and greater earthquakes, compiled from various sources, 1769 to 2000; available at www.consrv.cagov/CGS/rghm/quakes/cgs2000_fnl.txt
Fault Information: Jennings, C.W., 1977, Geologic map of California: California Department of Conservation, Division of Mines and Geology, scale 1:750,000

EXPLANATION

Symbols

- fault, certain
- fault,approx. located
- fault, concealed or inferred

Earthquake Magnitude

- 4.0 to 4.99
- 5.0 to 5.99
- 6.0 to 6.99
- 7.0 +

N
W E
S

SCALE 1:500,000
5 2.5 0 5
Miles

Pacific Crest ENGINEERING INC

Regional Seismicity Map
Mission Union Elementary School
36825 Foothill Road
Soledad, California

FIGURE #
3
JOB #
2345

BASE MAP: Flood Insurance Rate Map, City of Soledad - Monterey County, California, community-panel #625 of 2050, Map #06053C0625G. Federal Emergency Management Agency, effective April 2, 2009.

EXPLANATION OF ZONE DESIGNATIONS

Zone A — No Base Flood Elevations Determined

Zone X — Areas determined to be outside the 0.2% annual chance floodplain

Special Flood Hazard Areas Subject to Inundation by 1% Annual Chance Flood

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equated or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

1% annual chance floodplain boundary

N
W E
S

SCALE 1:48,000

3000 3500 4000 4500 feet

Pacific Crest ENGINEERING INC

FEMA FIRM Index Map
Mission Union Elementary School
36825 Foothill Road
Soledad, California

FIGURE # 4
JOB # 2345

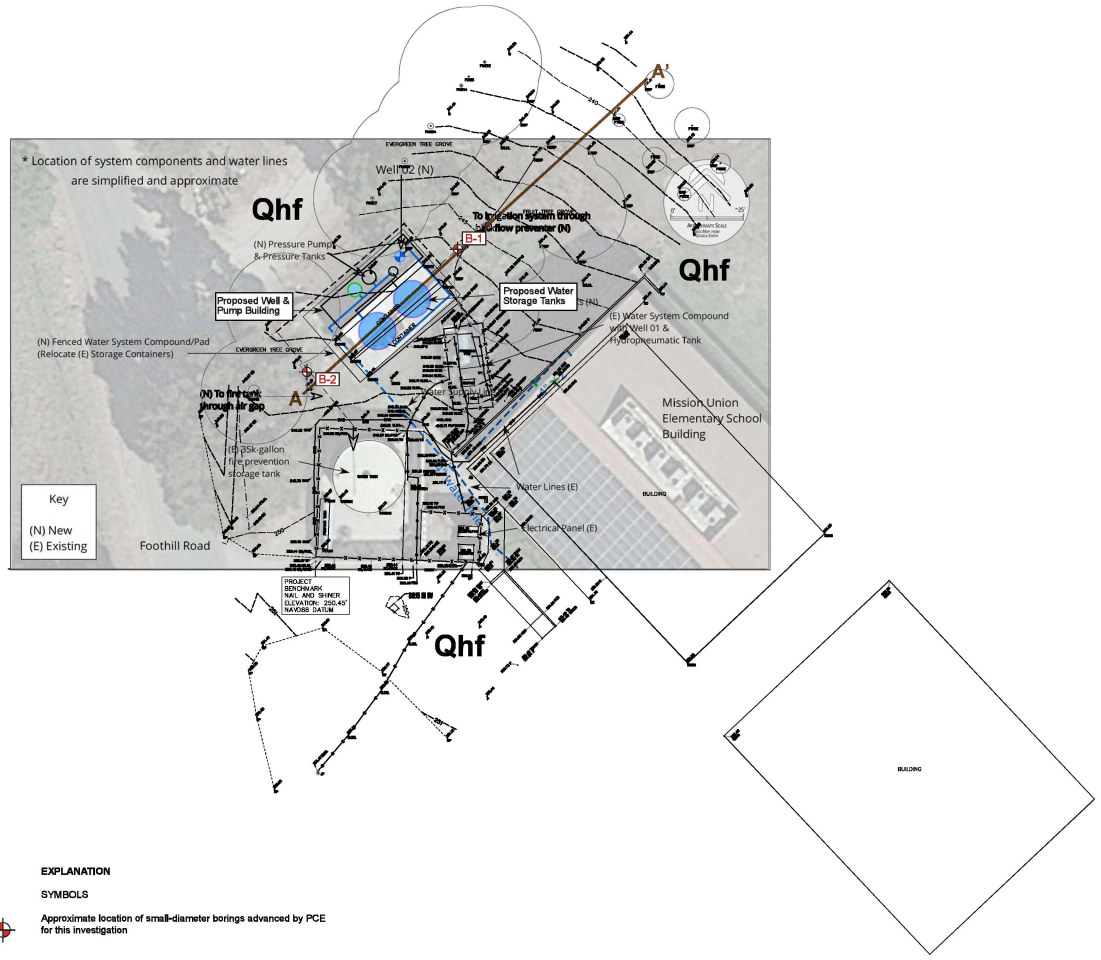
APPENDIX B

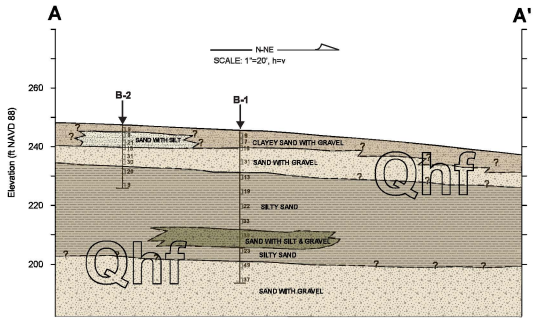
SCALE OF ACCEPTABLE RISKS FROM GEOLOGIC HAZARDS

SCALE OF ACCEPTABLE RISKS FROM SEISMIC GEOLOGIC HAZARDS		
Risk Level	**Structure Types**	**Extra Project Cost Probably Required to Reduce Risk to an Acceptable Level**
Extremely low[1]	Structures whose continued functioning is critical, or whose failure might be catastrophic: nuclear reactors, large dams, power intake systems, plants manufacturing or storing explosives or toxic materials.	No set percentage (whatever is required for maximum attainable safety).
Slightly higher than under "Extremely low" level.[1]	Structures whose use is critically needed after a disaster: important utility centers; hospitals; fire, police and emergency communication facilities; fire station; and critical transportation elements such as bridges and overpasses; also dams.	5 to 25 percent of project cost.[2]
Lowest possible risk to occupants of the structure.[3]	Structures of high occupancy, or whose use after a disaster would be particularly convenient: schools, churches, theaters, large hotels, and other high rise buildings housing large numbers of people, other places normally attracting large concentrations of people, civic buildings such as fire stations, secondary utility structures, extremely large commercial enterprises, most roads, alternative or non-critical bridges and overpasses.	5 to 15 percent of project cost.[4]
An "ordinary" level of risk to occupants of the structure.[3,5]	The vast majority of structures: most commercial and industrial buildings, small hotels and apartment buildings, and single family residences.	1 to 2 percent of project cost, in most cases (2 to 10 percent of project cost in a minority of cases).[4]

1 Failure of a single structure may affect substantial populations.
2 These additional percentages are based on the assumptions that the base cost is the total cost of the building or other facility when ready for occupancy. In addition, it is assumed that the structure would have been designed and built in accordance with current California practice. Moreover, the estimated additional cost presumes that structures in this acceptable risk category are to embody sufficient safety to remain functional following an earthquake.
3 Failure of a single structure would affect primarily only the occupants.
4 These additional percentages are based on the assumption that the base cost is the total cost of the building or facility when ready for occupancy. In addition, it is assumed that the structures would have been designed and built in accordance with current California practice. Moreover the estimated additional cost presumes that structures in this acceptable-risk category are to be sufficiently safe to give reasonable assurance of preventing injury or loss of life during and following an earthquake, but otherwise not necessarily to remain functional.
5 "Ordinary risk": Resist minor earthquakes without damage: resist moderate earthquakes without structural damage, but with some non-structural damage; resist major earthquakes of the intensity or severity of the strongest experienced in California, without collapse, but with some structural damage as well as non-structural damage. In most structures it is expected that structural damage, even in a major earthquake, could be limited to repairable damage. (Structural Engineers Association of California)
Source: *Meeting the Earthquake,* Joint Committee on Seismic Safety of the California Legislature, Jan. 1974, p.9.

SCALE OF ACCEPTABLE RISKS FROM NON-SEISMIC GEOLOGIC HAZARDS[6]		
Risk Level	Structure Type	Risk Characteristics
Extremely low risk	Structures whose continued functioning is critical, or whose failure might be catastrophic: nuclear reactors, large dams, power intake systems, plants manufacturing or storing explosives or toxic materials.	1. Failure affects substantial populations, risk nearly equals nearly zero.
Very low risk	Structures whose use is critically needed after a disaster: important utility centers; hospitals; fire, police and emergency communication facilities; fire station; and critical transportation elements such as bridges and overpasses; also dams.	1. Failure affects substantial populations. Risk slightly higher than 1 above.
Low risk	Structures of high occupancy, or whose use after a disaster would be particularly convenient: schools, churches, theaters, large hotels, and other high rise buildings housing large numbers of people, other places normally attracting large concentrations of people, civic buildings such as fire stations, secondary utility structures, extremely large commercial enterprises, most roads, alternative or non-critical bridges and overpasses.	1. Failure of a single structure would affect primarily only the occupants.
"Ordinary" risk	The vast majority of structures: most commercial and industrial buildings, small hotels and apartment buildings, and single family residences.	1. Failure only affects owners /occupants of a structure rather than a substantial population. 2. No significant potential for loss of life or serious physical injury. 3. Risk level is similar or comparable to other ordinary risks (including seismic risks) to citizens of coastal California. 4. No collapse of structures; structural damage limited to repairable damage in most cases. This degree of damage is unlikely as a result of storms with a repeat time of 50 years or less.
Moderate risk	Fences, driveways, non-habitable structures, detached retaining walls, sanitary landfills, recreation areas and open space.	1. Structure is not occupied or occupied infrequently. 2. Low probability of physical injury. 3. Moderate probability of collapse.
[6] Non-seismic geologic hazards include flooding, landslides, erosion, wave runup and sinkhole collapse		





EXPLANATION

SYMBOLS

B-2 — Approximate location of small-diameter borings advanced by PCE for this investigation

A——A' — Line of geologic cross section (see elsewhere on this plate)

EARTH MATERIALS

Qhf — Holocene Fan Deposits (after Rosenberg, 2001)

EXPLANATION

Earth materials contact; dashed where approximate, queried where uncertain

B-2 — Small-diameter borings or soundings advanced by Pacific Crest Engineering for this project (see forthcoming report by Pacific Crest Engineering for logs)

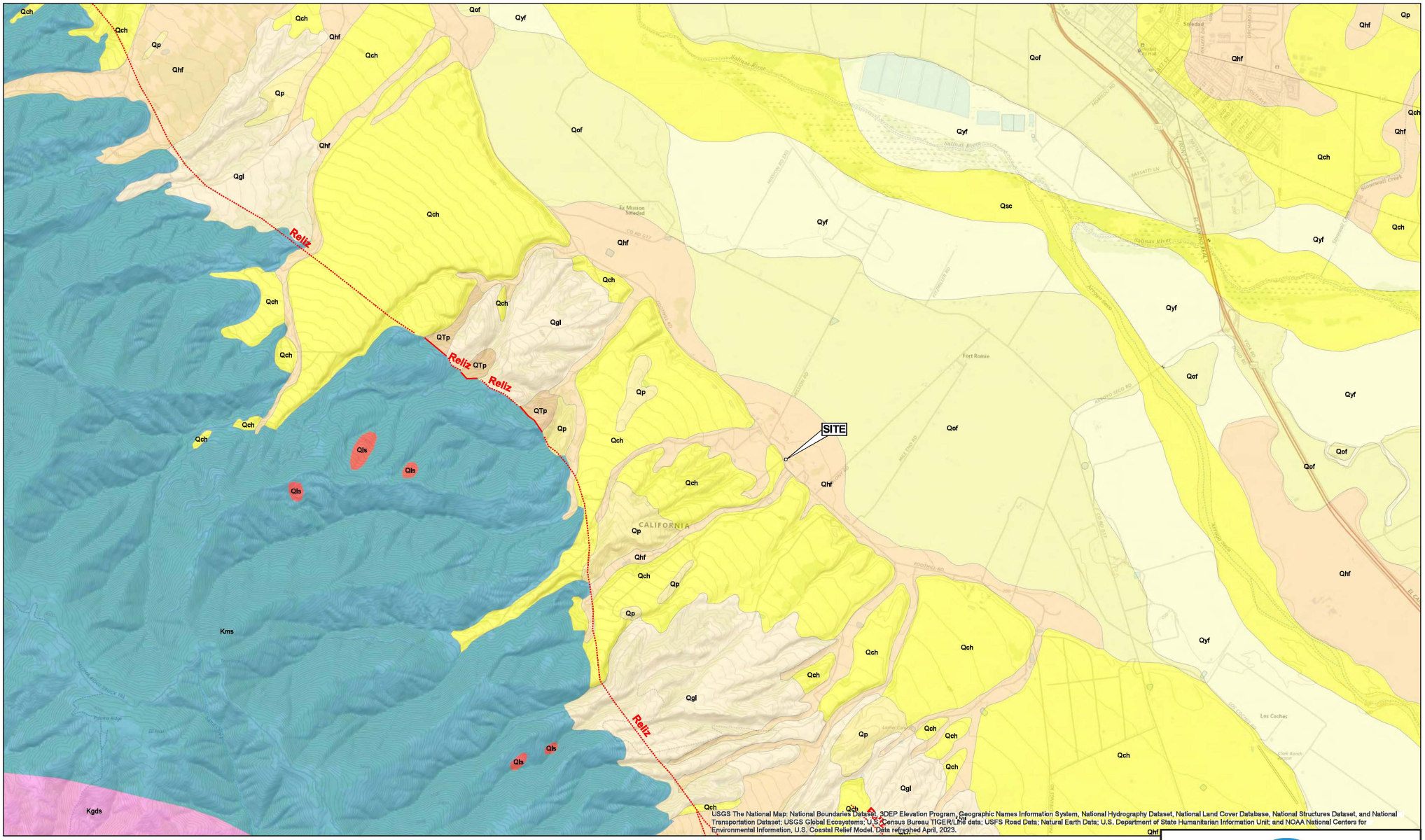
Qhf — Holocene fan deposits (after Rosenberg, 2001)

BASE MAP: Site survey layer excerpted from "Topographic Survey - Mission Union Elementary School - 36825 Foothill Road, Soledad - Monterey County - California", prepared by Mid Coast Engineering, dated 18 May 2022, intended publication scale 1"=20'. Proposed developments layer digitally excerpted from "Schematic and Map of Water System Improvements - Mission Union Elementary School, Soledad, CA", Figure 4, prepared by Weber Hayes Associates, dated August 2022.

Pacific Crest ENGINEERING INC

SITE PLAN AND CROSS-SECTION A-A'
MISSION UNION ELEMENTARY SCHOOL
36825 Foothill Road
Soledad, California

Date: 16 June 2023	Revised:
Job #2345	
Scale: 1"=20'	**Plate 1**
Drawn by: ENZ/mp	



N
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2,000 1,000 0 2,000
Feet

EXPLANATION

Earth Materials

- Qls - Landslide deposits
- Qsc - Stream channel deposits
- Qyf - Younger flood-plain deposits
- Qof - Older flood-plain deposits
- Qhf - Holocene alluvial fan deposits
- Qch - Alluvial fan deposits of Chualar
- Qgl - Alluvial fan deposits of Gloria
- Qpl - Alluvial fan deposits of Placentia
- QTp - Paso Robles Formation, undifferentiated
- Kgds - Porphyritic granodiorite of Sand Creek
- Kms - Schist of Sierra de Salinas

Symbols

- fault - certain
- fault - concealed
- earth materials contact

PROFESSIONAL GEOLOGIST
ERIK N. ZINN
No. 6854
STATE OF CALIFORNIA

CERTIFIED ENGINEERING GEOLOGIST
ERIK N. ZINN
No. 2139
STATE OF CALIFORNIA

Pacific Crest
ENGINEERING INC

LOCAL GEOLOGIC INDEX MAP

Mission Elementary School Water Tanks
36285 Foothill Road
Soledad, California

Date: 16 June 2023	Revised:
Job #2345	
Scale: 1"=2000'	**Plate 2**
Drawn by: ENZ/enz	

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Appendix F

Assembly Bill 52 Consultation Letter

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Mission Union School District

"Where every child is brilliant."

Superintendent/Principal, Mrs. Sandra Shreve
36825 Foothill Road, Soledad, CA 93960 (831) 678-3524

August 30, 2023

[redacted]

Subject: **Notification of Proposed Project Under AB 52 Amendment to CEQA for the Mission Union School Water Systems Improvement Project (proposed project)**

Dear Chairperson [redacted],

The Mission Union School District (District) is the lead agency for the Mission Union School Water Systems Improvement Project (proposed project). The proposed project consists of installing a new well with a deeper well screen interval to reach deeper groundwater that is not affected by nitrate contamination. The proposed project also includes a new potable water storage tank and water pump. The Area of Potential Effect (APE) is portion of the overall 6-acre Mission Union Elementary School campus in unincorporated Monterey County, outside of Soledad, California. A map showing the proposed project area is attached. The proposed project includes the following components:

Water Supply Well

This well is anticipated to reach groundwater between 394 and 700 feet below ground surface, which would not contain elevated nitrate concentrations. The new well would be constructed with stainless steel wire wrapped screen from approximately 394 to 700-feet below ground surface (bgs). The proposed project would filter the deeper groundwater through a second stainless-steel screen (approximately 354 to 395 bgs, roughly the same depth as the existing well) to offset potential increases in iron and magnesium from pumping deeper groundwater. The new well would be constructed close to the existing well and housed in a new structure.

Water Pumps and Storage Tank

A submersible well pump will pump water from the well into the top of the new water storage tanks. An air gap will be created by placing the tank overflow below the inlet connection. The appropriate water storage capacity is being determined based on actual water usage, but is anticipated that 10,000-gallons of water storage would be sufficient for the proposed project. As discussed previously, a flow meter was installed near the existing well head on July 27, 2022. The flow meter monitors the amount of water that Mission School uses for domestic and irrigation purposes. Water will flow from the bottom of the storage tanks to a duplex pressure pump, which will pressurize the potable water distribution system. The pressure pump outlet manifold will be connected to pressure tanks to maintain water system pressure when the pressure pump is not running.

Water Lines

A dedicated water line will run from the well outlet directly to the fire prevention storage tank. This dedicated water line will bypass the potable water storage tank, pressure pumps, and pressure tanks described above. This configuration was chosen for simplicity and the ability to deliver a sustained high flow rate directly from the well to the fire prevention storage tank. In addition, a second dedicated water line will run from the well outlet directly to the irrigation system through a backflow preventer. This dedicated water line will bypass the potable water storage tank, pressure pumps, and pressure tanks discussed above. This configuration was chosen to limit the amount of water storage required, as it appears the maximum irrigation demand is significant. Water would be stored based on the domestic water usage's MDD.

The Native American Heritage Commission (NAHC) has provided the [redacted] in a consultation list of tribes that are traditionally and culturally affiliated within the geographic area of the above listed proposed project. The result of the NAHC Sacred Lands File check was negative. The District is interested in obtaining additional information regarding the presence of cultural resources within or adjacent to proposed project locations and in learning of any concerns you or other tribal members may have regarding this proposed project. Please provide your comments and if you feel that other groups or individuals should be contacted, please let me know at:

Mission Union School District
Attention: Sandra Shreve, Superintendent
36825 Foothill Rd., Soledad, CA 93960-965
(831) 678-3524
sshreve@missionusd.org

Please consider this letter and preliminary project information as the notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52). Please respond within 30 days, pursuant to PRC 21080.3.1 (d) if you would like to consult on this proposed project. Additionally, with your response, please provide a designated contact person.

Very Respectfully,

Sandra Shreve

Sandra Shreve, Superintendent, Mission Union School District