PUBLIC REVIEW DRAFT

INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

FOR THE

WEST POINT REGULATING RESERVOIR ENLARGEMENT PROJECT

CALAVERAS COUNTY WATER DISTRICT
WEST POINT, CA

AUGUST 19, 2025

Prepared for:

Calaveras County Water District
120 Toma Ct
San Andreas, CA 95249

Prepared by:

BaseCamp Environmental, Inc.
802 W. Lodi Avenue
Lodi, CA 95240

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TABLE OF CONTENTS

		Page
MITIGATED NEGATIVE DECLARATION		
A.	General Project Information	iv
B.	Environmental Factors Potentially Affected	v
C.	Lead Agency Determination	v
Chapter 1.0	INTRODUCTION	
1.1	Project Brief	1-1
1.2	Purpose of Initial Study	1-1
1.3	Project Background	1-3
1.4	Environmental Evaluation Checklist Terminology	1-4
1.5	Summary of Environmental Effects and Mitigation Measures	1-5
Chapter 2.0	PROJECT DESCRIPTION	
2.1	Project Location	2-1
2.2	Project Details	2-1
2.3	Permits and Approvals	2-2
Chapter 3.0	ENVIRONMENTAL EVALUATION FORM	
3.1	Aesthetics	3-1
3.2	Agriculture and Forestry Resources	3-3
3.3	Air Quality	3-5
3.4	Biological Resources	3-9
3.5	Cultural Resources	3-20
3.6	Energy	3-27
3.7	Geology and Soils	3-28
3.8	Greenhouse Gas Emissions	3-34
3.9	Hazards and Hazardous Materials	3-35
3.10	Hydrology and Water Quality	3-38
3.11	Land Use and Planning	3-41
3.12	Mineral Resources	3-42
3.13	Noise	3-43
3.14	Population and Housing	3-48
3.15	Public Services	3-49

3.16 Recreation 3-51
3.17 Transportation 3-52
3.18 Tribal Cultural Resources 3-53
3.19 Utilities and Service Systems 3-56
3.20 Wildfire 3-58
3.21 Mandatory Findings of Significance 3-59

Chapter 4.0 REFERENCES

4.1 Document Preparers 4-1
4.2 References Cited 4-1
4.3 Persons Consulted 4-3

Chapter 5.0 NOTES RELATED TO EVALUATION OF ENVIRONMENTAL IMPACTS 5-1

APPENDICES

A. Air Quality Modeling Results
B. Biological Assessment
C. Wetland Delineation
D. Cultural Resources Report
E. Noise Report

LIST OF TABLES

1-1 Summary of Environmental Impacts and Mitigation Measures 1-11
3-1 CCAPCD Significance Thresholds and Project Air Pollutant Emissions 3-7
3-2 Summary of Existing Background Noise Measurement Data 3-46
3-3 Exterior Noise Level Standards 3-47

LIST OF FIGURES

1-1 Regional Location Map 1-6
1-2 Street Map 1-7
1-3 USGS Map 1-8
1-4 Aerial Map 1-9

1-5	Existing Topography	1-10
2-1	Grading Plan	2-4
2-2	Grading Sections	2-5
3-1	Terrestrial Vegetation Types	3-62
3-2	Existing Waters of the U.S.	3-63
3-3	Existing Waters of the State	3-64
3-4	Post-Project Waters of the U.S.	3-65
3-5	Post-Project Waters of the State	3-66
3-6	Boring Locations	3-67
3-7	Fault Map	3-68
3-8	Geologic Map	3-69
3-9	Noise Monitoring Sites	3-70
3-10	Noise Impacts	3-71

LIST OF ACRONYMS AND ABBREVIATIONS USED IN THIS DOCUMENT

AB	Assembly Bill
ARB	California Air Resources Board
BMP	Best Management Practice
CalEEMod	California Emissions Estimator Model
Cal Fire	California Department of Forestry and Fire Protection
CCAPCD	Calaveras County Air Pollution Control District
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CO_2e	carbon dioxide equivalent
CPUD	Calaveras Public Utility District
dBA	A-weighted decibels
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	Environmentally Sensitive Area
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
IS/MND	Initial Study/Mitigated Negative Declaration
NO_x	nitrogen oxide
PM_{10}	particulate matter 10 microns or less in diameter
RCEM	Road Construction Emissions Model
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
WTP	Water Treatment Plant

MITIGATED NEGATIVE DECLARATION

A. General Project Information

Project Title:	West Point Regulating Reservoir Enlargement
Lead Agency Name and Address:	Calaveras County Water District 120 Toma Ct San Andreas, CA 95249
Contact Person and Phone Number:	Jesse Franco Black Water Engineering 559-375-1522
Project Location:	West Point Regulating Reservoir 1121 Winton Road, West Point, CA
Project Sponsor Name and Address:	Calaveras County Water District 120 Toma Ct. San Andreas, CA 95249
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	Enlargement of existing storage reservoir from 50 acre-feet to 150 acre-feet, replacement of concrete spillway and other facilities.
Surrounding Land Uses and Setting:	The project is located at existing reservoir site north of Winton Road, near the Bummerville Road intersection. The project vicinity is mainly forested land outside the immediate reservoir vicinity; there are several rural residences located adjacent to the CCWD ownership.
Other Public Agencies Whose Approval is Required:	State Water Resources Control Board (approval of environmental package), California Division of Safety of Dams Calaveras County (grading permit), Calaveras County Air Pollution Control District (Fugitive Dust Prevention and Control Plan approval), Central Valley Regional Water Quality Control Board (Construction General Permit).

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?	No tribes have requested consultation. See Appendix C regarding tribal outreach.

B. Environmental Factors Potentially Affected

The environmental factors checked below may be significantly affected by this project, involving at least one impact that is a "Potentially Significant Impact" prior to mitigation. Mitigation measures that would avoid potential effects or reduce them to a less than significant level have been prescribed for each of these effects, as described in the checklist and narrative on the following pages, and in the Summary Table at the end of Chapter 1.0.

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

C. Lead Agency Determination

On the basis of this initial evaluation:

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

✓ I find 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 and/or mitigation measures that would reduce potential effects to a less than significant level have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment,

and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find 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 applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

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

CALAVERAS COUNTY WATER DISTRICT

_____ _____

Kevin Williams, District Engineer Date

1.0 INTRODUCTION

1.1 Project Brief

This document is an Initial Study/Mitigated Negative Declaration (IS/MND) for the CCWD West Point Regulating Reservoir Enlargement Project The project is 1.1 miles east of the community of West Point in the unincorporated area of Calaveras County (Figures 1-1 through 1-4). The IS/MND has been prepared in compliance with the requirements of the California Environmental Quality Act (CEQA). For the purposes of CEQA, the Calaveras County Water District (CCWD) is the Lead Agency for the project.

The District's 2004 Water System Improvements Final Feasibility Report and the 2005 West Point Water System Master Plan presented recommended water supply, storage and distribution improvements for the West Point service area. Among the several elements not yet constructed is enlargement of the West Point Regulating Reservoir to increase its capacity. The enlargement and related improvements the current project addressed in this document.

The West Point Regulating Reservoir is the only storage pond for the West Point Water System. During drought periods water storage is not sufficient to meet water demands, requiring the District to purchase Mokelumne River water. The proposed project would approximately triple the capacity of the reservoir, from the existing 50 AF to 150 AF, reducing the District's dependence on purchase of Mokelumne River water via a separate system. Grant funding for engineering and environmental studies has been obtained from FEMA and Cal-OES.

The KASL Engineering 2018 West Point Master Plan for the District provides Conceptual Design and analyzes alternatives for meeting the objective reservoir capacity of 150 AF. The District's selected alternative involves a combination of excavation within the reservoir footprint, raising the existing dam and expansion of the reservoir footprint. These changes will also require modification or replacement of the existing spillway, piping, drainage channel, and other features; the existing concrete lined channel will need to be replaced with box culvert where it intersects the fill for the enlarged dam. The project may fill to be obtained from a nearby suitable borrow site, which will also require environmental clearances. The reservoir will be dewatered for the proposed work; interim water supply will be provided to the West Point area: these project elements will need to be considered in environmental studies. The project and its CEQA document would require approval from the CCWD Board of Directors.

1.2 Purpose of Initial Study

CEQA requires that public agencies document and consider the potential environmental effects of the agency's actions that meet CEQA's definition of a "project." Briefly summarized, a "project" is an action that has the potential to result in direct or indirect physical changes in the environment. A project includes the agency's direct activities as

well as activities that involve public agency approvals or funding. Guidelines for an agency's implementation of CEQA are found in the CEQA Guidelines (California Code of Regulations Title 14, Division 6, Chapter 3).

Provided that a project is not exempt from CEQA, the first step in the agency's consideration of its potential environmental effects is the preparation of an Initial Study. The purpose of an Initial Study is to determine whether the project would involve "significant" environmental effects, as defined by CEQA, and to describe any feasible mitigation measures that would avoid significant effects or reduce them to a level that is less than significant. If the Initial Study does not identify significant effects, then the agency ordinarily prepares a Negative Declaration. If the Initial Study notes significant effects but also identifies mitigation measures that would reduce these significant effects to a level that is less than significant, then the agency ordinarily prepares a Mitigated Negative Declaration. If a project involves significant effects that cannot be readily mitigated, then the agency must prepare an Environmental Impact Report. The agency may also decide to proceed directly with the preparation of an Environmental Impact Report without first preparing an Initial Study.

The proposed project is a "project" as defined by CEQA and is not exempt from CEQA consideration. The CCWD has determined that the project may potentially have significant environmental effects and therefore requires preparation of an Initial Study. This Initial Study describes the proposed project and its environmental setting, discusses the potential environmental effects of the project, and identifies feasible mitigation measures that would eliminate any potentially significant environmental effects of the project or reduce them to a level that would be less than significant. The Initial Study considers the project's potential for significant environmental effects in the following subject areas:

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

This Initial Study concludes that the project would have some potentially significant environmental effects, but that recommended mitigation measures would reduce all of these effects to a level that would be less than significant. As of the distribution of the IS/MND for public review, the CCWD has accepted and will implement all the mitigation measures recommended by the Initial Study. As a result, the CCWD has prepared a Mitigated Negative Declaration and notified the public of the CCWD's intent to adopt the Initial Study/Mitigated Negative Declaration. A copy of the CCWD's Notice of Intent, which indicates the time available for comment, is inside the cover of this document.

1.3 Project Background

The Calaveras County Water District (District), a California special district, is a water utility based in San Andreas, California. The primary purpose of the not-for-profit District, formed in 1946, is the provisions of water and sewer service to the residents of the Calaveras County. The District is also engaged in the development of hydroelectric power for financial support and development of water supplies. The District includes all of Calaveras County; its boundaries encompass approximately 1,037 square miles of land, ranging from the San Joaquin Valley floor in the west to the crest of Sierra Nevada range. The District provides water service to about 13,080 municipal and residential / commercial customers in six service areas, and sewer service to about 4,848 customers in 12 service areas, distributed throughout the County.

The Calaveras County Water District (CCWD or District) owns and operates the West Point water system, which serves potable water to approximately 600 residential and commercial customers in the unincorporated communities of West Point, Wilseyville, Bummerville and Railroad Flat. The water supply system includes diversions from Bear Creek and the Middle Fork of the Mokelumne River, the West Point Regulating Reservoir providing raw water storage of approximately 50 acre-feet and the West Point Treatment Plant pumping facility.

The West Point WTP provides treated water with a capacity of up to one million gallons per day (MGD), which is adequate to serve existing customers, with additional capacity available to serve existing and new customers projected through the year 2100. Treated water storage has been recently expanded at the West Point WTP which adequately meets existing and projected Maximum Day Plus Fire Flows and Peak Hour Demands. Water is distributed to the served communities via downstream distribution systems

As the sponsoring agency, the District is the Lead Agency for the project under the California Environmental Quality Act (CEQA) and will be responsible for working with FEMA and any other involved federal agencies in delivering National Environmental Policy Act (NEPA) clearance for the project. Federal agency involvement will require that biological and cultural resources studies be prepared in accordance with NEPA and applicable federal statutes, including Section 106 of the National Historic Preservation Act and Section 7 of the Fish and Wildlife Coordination Act.

Environmental compliance will need to carefully consider and document the existing environmental resources and sensitivities of the project site and surroundings, including federal (and state) biological and cultural resource studies. It appears from topographic maps and aerial photos that there are several existing residences in the immediate vicinity of the reservoir; these residences will require careful consideration of aesthetic and air emissions and noise during construction.

Environmental documents will need to address the concerns of various federal and state agencies with permit and approval jurisdiction of the project, including:

<u>Federal</u>

US Army Corps of Engineer

Federal Emergency Management Agency

California

Department of Fish and Wildlife
Department of Forestry and Fire Protection
State Historic Preservation Office
Native American Heritage Commission
Division of Dam Safety
Regional Water Control Board
SWRCB Water Rights
SWRCB Drinking Water
Calaveras Air Pollution Control District

1.4 Environmental Evaluation Checklist Terminology

The project's potential environmental effects are evaluated in the Environmental Evaluation Checklist presented in Chapter 3.0 of this IS/MND. The checklist includes a list of environmental considerations against which the project is evaluated. For each question, the CCWD determines whether the project would involve 1) a Potentially Significant Impact, 2) a Less Than Significant Impact with Mitigation Incorporated, 3) a Less Than Significant Impact, or 4) No Impact.

> A Potentially Significant Impact occurs when there is substantial evidence that the project would involve a substantial adverse change to the physical environment, i.e., the environmental effect may be significant, and mitigation measures have not been defined that would reduce the impact to a level that would be less than significant. If there is a Potentially Significant Impact entry in the Initial Study, then an EIR is required. No Potentially Significant Impacts are identified in this Initial Study.
>
> An environmental effect that is Less Than Significant with Mitigation Incorporated is a Potentially Significant Impact that can be avoided or reduced to a level that is less than significant with the application of defined mitigation measures.
>
> A Less Than Significant Impact occurs when the project would involve an environmental impact, but the impact would not cause a substantial adverse change to the physical environment that would require mitigation.
>
> A determination of No Impact is self-explanatory.

This IS/MND identifies certain potentially significant environmental effects that would be mitigated by implementation of existing provisions of law and standards of practice related to land use planning and environmental protection. Such provisions are identified and considered in the environmental impact analysis, and the degree to which they would reduce potential environmental effects is discussed. These protections are considered part of the existing regulatory environment and are assumed to counter the potential environmental effects of the project as discussed. The need for additional mitigation measures described in this Initial Study occurs when such existing environmental

protections are not adequate to avoid potential environmental effects or to reduce them to a level that is less than significant.

1.5 Summary of Environmental Effects and Mitigation Measures

Table 1-1, which follows Figure 1-4, summarizes the results of the environmental analysis contained in the Environmental Evaluation Checklist in Chapter 3.0 of this IS/MND. The potential environmental impacts of the proposed project are listed in the left-most column of this table. The level of significance of each impact is indicated in the second column. Feasible mitigation measures that are considered necessary to avoid or minimize the impacts are shown in the third column, and the significance of the impact after mitigation measures are applied is shown in the fourth column.

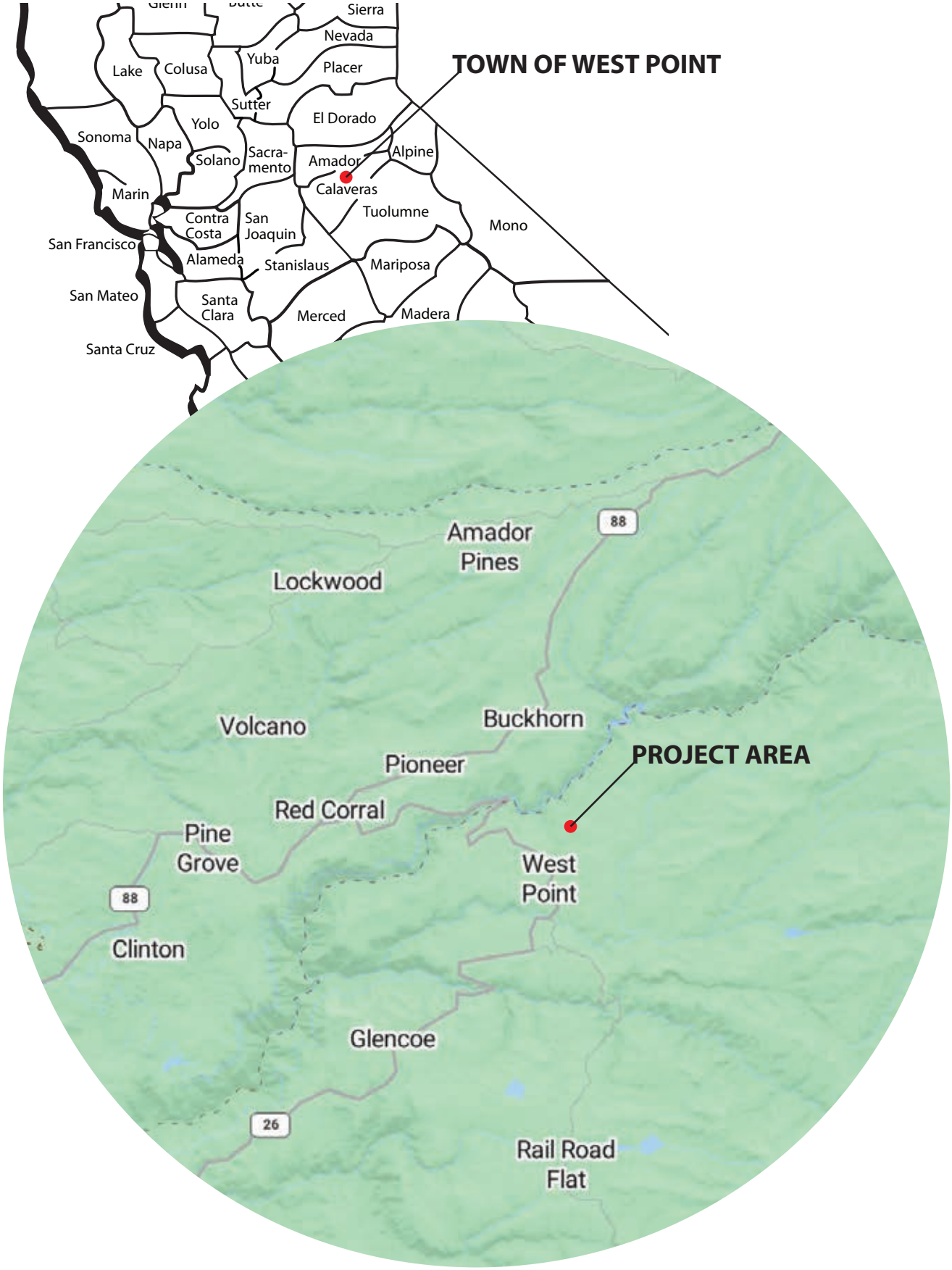

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Figure 1-1
REGIONAL LOCATION MAP

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Figure 1-2
STREET MAP

Figure 1-3
USGS MAP

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Figure 1-4
AERIAL PHOTO

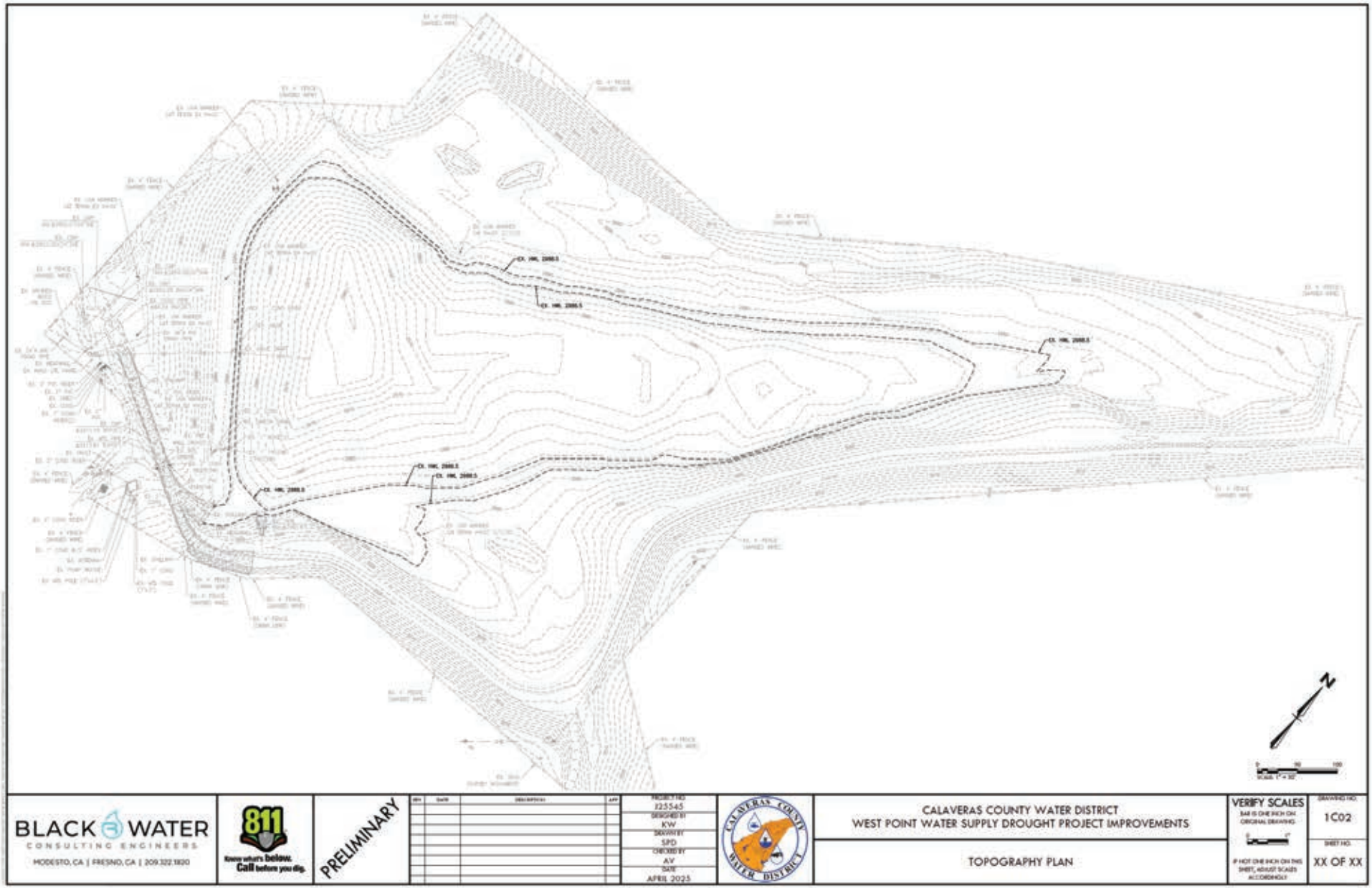

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Figure 1-5
EXISTING TOPOGRAPHY

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
3.1 AESTHETICS			
a) Scenic Vistas	NI	None required.	-
b) Scenic Routes and Resources	NI	None required.	-
c) Visual Character and Quality	LS	None required.	-
d) Light and Glare	NI	None required.	-
3.2 AGRICULTURE AND FORESTRY RESOURCES			
a) Agricultural Land Conversion	NI	None required.	-
b) Agricultural Zoning and Williamson Act	NI	None required.	-
c) Forest Land Zoning	NI	None required.	-
d) Forest Land Conversion	NI	None required.	-
e) Indirect Conversion of Farmland and Forest Land	NI	None required.	-
3.3 AIR QUALITY			
a) Air Quality Plan Consistency	LS	None required.	-
b) Cumulative Emissions	NI	None required.	-
c) Exposure of Sensitive Receptors	LS	None required.	-
d) Odors	NI	None required.	-
3.4 BIOLOGICAL RESOURCES			
a) Special-Status Species	PS	BIO-1: A pre-construction survey for special-status species should be performed by a qualified biologist to ensure that special-status species are not present. The focal species	LS

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
		are scalloped moonwort, watershield, yellow-lip pansy monkeyflower, southern long-toed salamander, foothill yellow-legged frog, California red-legged frog, and western pond turtle. If any listed species are detected, construction should be delayed, and protection measures including avoidance measures, initiated defined by a qualified biologist in consultation with the appropriate wildlife agency (CDFW and/or USFWS). With the implementation of this mitigation measure, adverse impacts upon special-status species would be reduced to a less-than-significant level. BIO-2: A qualified biologist, in consultation with CDFW and/or USFWS, should develop measures to avoid "take" of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site. BIO-3: A pre-construction bat survey should be performed by a qualified biologist to ensure that bats are not roosting in trees that will be felled or near construction activities where a bat colony could be adversely affected. The focal species are silver-haired bat, hoary bat, long-legged myotis, Townsend's big-eared bat. If any bat roosts or colonies are detected, construction should be delayed, and the appropriate wildlife agency (CDFW and/or USFWS) should be consulted, avoidance measures initiated, and project impacts and mitigation reassessed. With the implementation of this mitigation measure, adverse impacts upon bat populations would be reduced to a less-than-significant level.	

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
b) Riparian and Other Sensitive Habitats	NI	None required.	-
c) Wetlands and Waters of the U.S.	NI	None required.	-
d) Fish and Wildlife Movement	NI	None required.	-
e) Local Biological Requirements	NI	None required.	-
f) Conflict with Habitat Conservation Plans	NI	None required.	-
3.5 CULTURAL RESOURCES			
a) Historical Resources	NI	None required.	-
b) Archaeological Resources	PS	CULT-1: If buried cultural resources are inadvertently discovered during ground-disturbing activities, work shall stop within 30 feet of the find until a qualified archaeologist can assess the significance of the find. If necessary, the archaeologist will develop appropriate treatment measures in consultation with the Calaveras Public Utility District and other agencies as appropriate. Treatment measures may include, but are not limited to, preservation in place or excavation under supervision of a qualified archaeologist.	LS
c) Human Burials	LS	None required.	-
3.6 ENERGY			
a) Project Energy Consumption	LS	None required.	-
b) Consistency with Energy Plans	NI	None required.	-
3.7 GEOLOGY AND SOILS			

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
a-i) Fault Rupture Hazards	NI	None required.	-
a-ii) Seismic Ground Shaking	LS	None required.	-
a-iii) Other Seismic Hazards	NI	None required.	-
a-iv) Landslides	NI	None required.	-
b) Soil Erosion	LS	None required.	-
c) Unstable Soils	LS	None required.	-
d) Expansive Soils	LS	None required.	-
e) Adequacy of Soils for Wastewater Disposal	NI	None required.	-
f) Paleontological Resources and Unique Geologic Features	PS	GEO-1: If buried paleontological resources are inadvertently discovered during ground-disturbing activities, work shall stop within 30 feet of the find until a qualified paleontologist can assess the significance of the find. If necessary, the paleontologist will develop appropriate treatment measures in consultation with the Calaveras Public Utility District and other agencies as appropriate. Treatment measures may include, but are not limited to, preservation in place or excavation under supervision of a qualified paleontologist.	LS
3.8 GREENHOUSE GAS EMISSIONS			
a) Project GHG Emissions	LS	None required.	-
b) Consistency with GHG Reduction Plans	NI	None required.	-
3.9 HAZARDS AND HAZARDOUS MATERIALS			
a) Hazardous Material Transport, Use and Storage	LS	None required.	-

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
b) Release of Hazardous Materials by Upset or Accident	LS	None required.	-
c) Hazardous Materials Releases near Schools	NI	None required.	-
d) Hazardous Materials Sites	NI	None required.	-
e) Airport Operations	NI	None required.	-
f) Emergency Response and Evacuation	NI	None required.	-
g) Wildland Fire Hazards	LS	None required.	-
3.10 HYDROLOGY AND WATER QUALITY			
a) Violation of Water Quality Standards	LS	None required.	-
b) Groundwater Supplies and Recharge	NI	None required.	-
c-i) Erosion	NI	None required	-
c-ii, iii) Drainage Patterns and Runoff	NI	None required.	-
c-iv) Flood Flows	NI	None required.	-
d) Release of Pollutants in Flood Zone	NI	None required.	-
e) Conflict with Water Quality or Sustainable Groundwater Plans	LS	None required.	-
3.11 LAND USE AND PLANNING			
a) Division of Established Communities	NI	None required.	-
b) Conflict with Applicable Plans, Policies and Regulations Avoiding or Mitigating Environmental Effects	LS	None required.	-

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
3.12 MINERAL RESOURCES			
a, b) Loss of Mineral Resource Availability	NI	None required.	-
3.13 NOISE			
a) Exposure to Noise Exceeding Local Standards	LS	None required.	-
b) Groundborne Vibrations	LS	None required.	-
c) Exposure to Airport/Airstrip Noise	NI	None required.	-
3.14 POPULATION AND HOUSING			
a) Unplanned Population Growth	NI	None required.	-
b, c) Displacement of Housing and People	NI	None required.	-
3.15 PUBLIC SERVICES			
a-i) Fire Protection	NI	None required.	-
a-ii) Police Protection	NI	None required.	-
a-iii) Schools	NI	None required.	-
a-iv) Parks	NI	None required.	-
a-v) Other Public Facilities	NI	None required.	-
3.16 RECREATION			
a, b) Recreational Facilities	NI	None required.	-
3.17 TRANSPORTATION			
a) Conflict with Transportation Plans, Ordinances and Policies	NI	None required.	-

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
b) Conflict with CEQA Guidelines Section 15064.3(b)	NI	None required.	-
c) Traffic Hazards	NI	None required.	-
d) Emergency Access	NI	None required.	-
3.18 TRIBAL CULTURAL RESOURCES			
a-i, ii) Tribal Cultural Resources	PS	Mitigation Measure CULT-1.	LS
3.19 UTILITIES AND SERVICE SYSTEMS			
a) Construction or Relocation of Infrastructure	LS	None required.	-
b) Water Supply	NI	None required.	-
c) Wastewater Systems	NI	None required.	-
d, e) Solid Waste Services	NI	None required.	-
3.20 WILDFIRE			
a) Emergency Response and Emergency Evacuation Plans	NI	None required.	-
b) Exposure of Project Occupants to Pollutants	NI	None required.	-
c) Installation and Maintenance of Infrastructure	NI	None required.	-
d) Risks from Runoff, Post-Fire Slope Instability, or Drainage Changes	NI	None required.	-
3.21 MANDATORY FINDINGS OF SIGNIFICANCE			
a) Findings on Biological and Cultural Resources	PS	Mitigation measures in Sections 3.4 and 3.5.	LS

TABLE 1-1
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
b) Findings on Individually Limited but Cumulatively Considerable Impacts	NI	None required.	-
c) Findings on Adverse Effects on Human Beings	LS	None required.	-

Notes: NI = No Impact; LS = Less Than Significant; PS = Potentially Significant

2.0 PROJECT DESCRIPTION

2.1 Project Location

The project site is the existing West Point Regulating Reservoir in Calaveras County, approximately 1.1 miles northeast of the community of West Point (see Figures 1-1 through 1-4). The existing reservoir is north of Winton Road at its intersection with Bummerville Road. The project site is shown on the U.S. Geological Survey's West Point, California, 7.5-minute quadrangle map as within Section 35, Township 7 North, Range 13 East, Mt. Diablo Base and Meridian. The latitude of the project site is approximately 38° 24′ 39″ North, and the longitude is approximately 120° 30′ 19″ West.

2.2 Project Details

The West Point Drought Water Supply project will involve modifications to the existing 35-foot high, 500-foot-long dam and reservoir to increase water storage capacity and enhance system performance. The proposed improvements include raising and enlarging the earthen dam towards the upstream side of the existing dam and excavating within the reservoir basin to increase capacity from 50 acre-feet (AF) to approximately 150 AF.

The dam embankment will be raised from elevation 2,991 to 3,003. The proposed high-water level within the reservoir will be at elevation 2,999. Upstream and downstream slopes will be 3 horizontal to 1 vertical (3H:1V). The low point in the reservoir will be unchanged at approximately elevation 2,961.

The existing concrete spillway will be redesigned and reconstructed. The conceptual plan for the spillway is a reinforced concrete open channel spillway measuring 3 feet deep by 10 feet wide.

Two borrow pits and one soil disposal area may be used for embankment material as part of the enlargement. The two borrow pits are located at the junction of Stephen P. Teale Highway and Associated Office Road in Sandy Gulch, CA, 3.1 acres, (APN 08025032) and on Smitty Lane near Winton Road in West Point, CA, 1.3 acres, (APN 08025032). The disposal area is located at 4027 Railroad Flat Road, in Wilseyville, CA, 3.9 acres, (APN 10019036).

Plans for expansion include the excavation of the bottom of the reservoir and expansion to the northeast with the construction of embankments, retaining walls, a wide-box culvert, and access roads around the outside of the embankment toe (Figure 2). In addition, the outlet pipe, which currently is located at the low point of the reservoir, is under consideration to be modified with a floating screen to reduce debris influx and improve oxygen levels. The existing bottom outlet piping will be retained and functional if for any reason the reservoir needs to be drawn down to minimum elevations.

Soils removed as part of the project will either be retained on site and used in the building of embankments or transported off site to the disposal area. The expanded reservoir will maintain a 15-foot-wide top embankment width, a 14-foot-wide spillway outfall with open channel section, and a minimum 12-foot-wide access roadway constructed around the outside of the embankment toe.

For the purposes of this IS/MND, assumed excavation and embankment construction volumes of 86,000 CY and 68,000 CY, respectively. Both of these activities would occur within the proposed reservoir footprint. Excavation volumes would exceed embankment construction volumes by approximately 20,000 cubic yards. Of this amount, it is possible that the entire amount would be used or stored on the project site; however, for the purposes of air quality emissions analysis, it was assumed that approximately half of that, or 10,000 CY, would be exported to a CCWD-owned storage site within three miles of the site.

Initially, the definition of the "project site" included two potential off-site borrow areas located in the West Point vicinity. As the geotechnical analysis of the project has proceeded, it appears that adequate embankment fill can be obtained from the reservoir site itself, and it is unlikely that import of additional embankment fill will not be necessary.

2.3 Permits and Approvals

The project would occur entirely on CCWD property. As such, the project and this IS/MND would require approval from the CCWD Board of Directors. The Board of Directors must consider adoption of the IS/MND prior to its decision on the project.

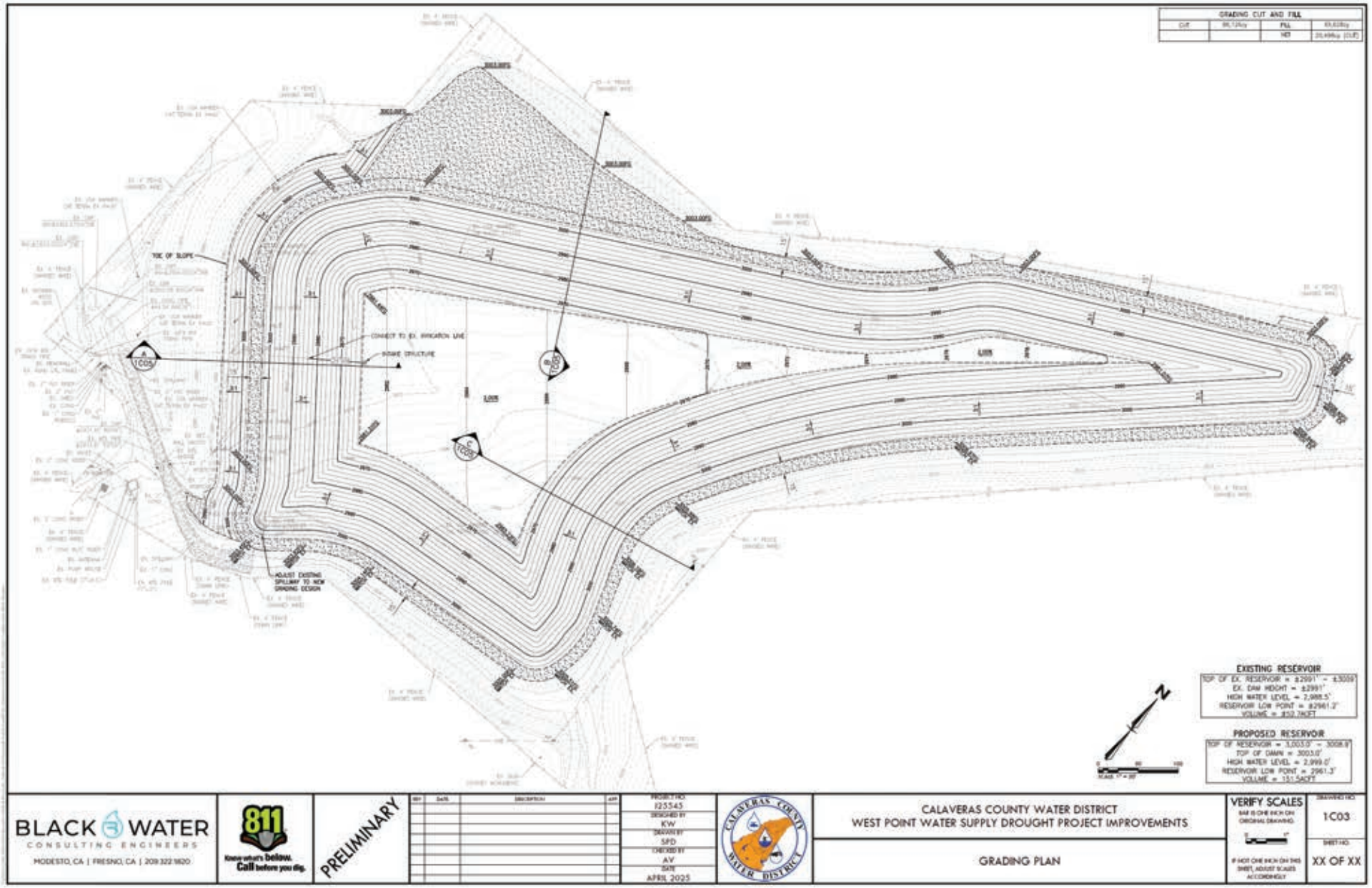
Should the project be approved, it is expected to require approvals or permits from other agencies. Specifically, the project would require a grading permit from Calaveras County and approval of a Fugitive Dust Prevention and Control Plan from the Calaveras County Air Pollution Control District (APCD).

The project geotechnical report when it is completed will be submitted to the California Division of Safety of Dams (DSOD) as part of the project design package. The geotechnical report has been completed to the 60% level and may require additional data collection and analysis in order to advance to the 90% design and obtain DSOD approval.

The project will require permits from resource management agencies, including the U.S. Army Corps of Engineers (Clean Water Act Section 404), the State Water Resources Control Board (Clean Water Act Section 401 (Water Quality Certification) and the California Department of Fish and Wildlife (Lake and Streambed Alteration) permits.

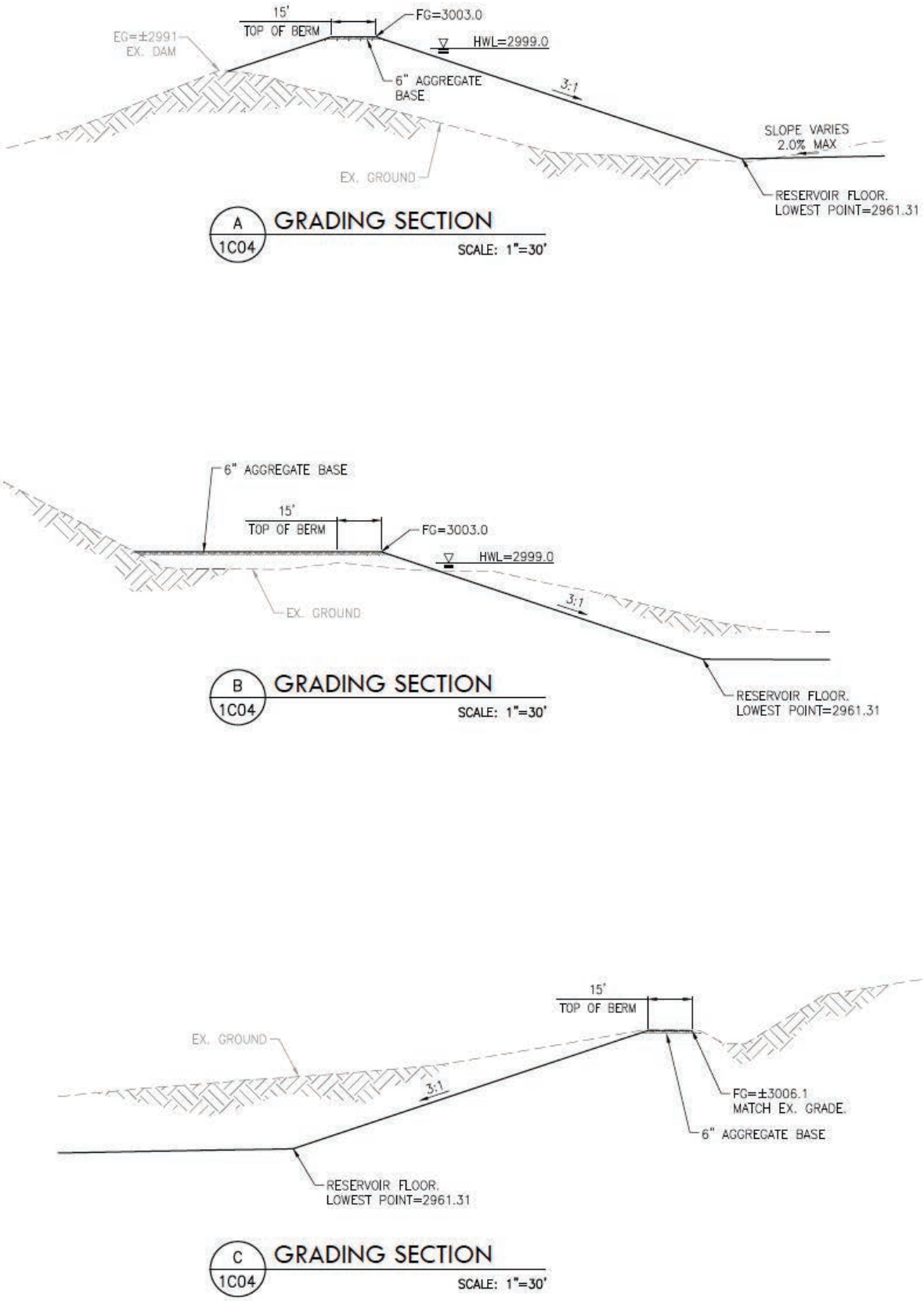
It is anticipated that the project would be funded largely by the SWRCB through its Drinking Water State Revolving Fund (DWSRF) program. An application for DWSRF funding will be presented to the SWRCB, including an Environmental Package that evaluates the potential environmental impacts of the proposed project under CEQA and NEPA, along with a Technical Package and a Financial Security Package. The Environmental Package will include the adopted version of this IS/MND for purposes of compliance with CEQA and other information related to compliance with NEPA. The SWRCB must approve the application, and a finalized agreement must be executed before

funding is disbursed. The SWRCB also has approval authority for a Construction General Permit that would need to be obtained for the project (see Section 3.7, Geology and Soils).



BaseCamp Environmental

Figure 2-1
GRADING PLAN



SOURCE: Black Water Consulting and Engineering

Figure 2-2
GRADING SECTIONS

3.0 ENVIRONMENTAL EVALUATION CHECKLIST

The following environmental evaluation considers the potential environmental effects of City approval of the proposed project, as described in Chapter 2.0, Project Description. The format of this evaluation is based on the Environmental Checklist presented in CEQA Guidelines Appendix G.

3.1 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?	☐	☐	☐	✓

Environmental Setting

The project site is the premises of the existing CCWD West Point Regulating Reservoir. The facilities are in the Sierra Nevada foothills of northern Calaveras County, and the overall landscape is mostly forested. This portion of Amador County has very little development generally, outside of small communities. The existing reservoir and the area proposed for expansion is bordered on two sides by existing low-density rural residential development.

The only scenic vista identified by the County General Plan consists of the Ebbetts Pass National Scenic Byway. The 58-mile stretch of State Route (SR) 4 and 89 known as the Scenic Byway is partially in Calaveras and Alpine Counties; 24 miles of the road is within Calaveras County from east of Arnold to the Alpine County line (Calaveras County 2018).

The project site is located more than 10 miles from the Ebbetts Pass National Scenic Byway. Nearby SR 26 is not assigned a State scenic designation. No other designated scenic highways are in the project vicinity.

The project site is not visible from any nearby publicly accessible vantage points, such as public roads. The project site is immediately visible from adjoining rural residential parcels. Mixed views of the reservoir surface and tree growth on surrounding lands are available to the adjoining residences.

The existing reservoir is, together with existing tree cover between the homes and the reservoir, an important foreground feature in views from the rear yards of these residences.

The project site has no existing lighting. Some night lighting associated with surrounding residences and CCWD water system facilities is visible from the reservoir. Lighting near the project site is limited to exterior lighting at these residences for the purposes of safety, security, and emergencies.

Environmental Impacts and Mitigation Measures

a) Scenic Vistas.

The project would have no impact on scenic vistas.

b) Scenic Routes and Resources.

There are no officially designated scenic resources on the project site. The project is within a forested area that may be considered scenic. However, project construction would occur exclusively on the WTP and reservoir sites. No trees would be removed as a result of the project.

The eastern portion of SR 4 in Calaveras County, which is part of the Ebbetts Pass byway, is also an officially designated State Scenic Highway (Caltrans 2019). As this segment of SR 4 is more than 10 miles away, and with intervening forested mountain land, the project site is not visible from this scenic highway. The project would have no impact on scenic resources or scenic highways.

c) Visual Character and Quality.

A recent change to the Environmental Checklist in CEQA Guidelines Appendix G emphasizes aesthetic and visual resource impacts on public views in non-urbanized areas. As defined in Appendix G, “public views” are views that are experienced from publicly accessible vantage points. Although not specifically defined, “publicly accessible vantage points” are assumed to include, though not necessarily limited to, public roads, parks, trails, and vista turnouts.

The project is in a relatively lightly-developed area with restricted access. Views of the existing reservoir are not available from public roads in the area, but the site is visible from adjacent residential lots. Views from these areas would be substantially affected during tree removal and grading associated with reservoir enlargement, but the existing 50 acre-foot reservoir would be replaced by the larger 150 acre-foot reservoir. Existing tree cover surrounding the reservoir would be removed or thinned as a part of the project. The long-term view of the reservoir would be modified by the enlargement of the water feature and reduction of existing forest cover.

The changes to the reservoir would not involve a visual intrusion on the existing landscape as viewed from the adjacent residential uses. Project impacts on visual character and quality would be less than significant.

d) Light and Glare.

The project does not propose the installation of lighting. Materials used by the project are not expected to generate glare, and in any case would not affect views from public roads or from areas outside the project site. The project would have no impact related to light or glare.

3.2 AGRICULTURE AND FORESTRY RESOURCES

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?	☐	☐	☐	✓

Environmental Setting

The project is within a forested area of Calaveras County. Timberland in Calaveras County is under both public and private ownership and is concentrated in the eastern portion of the County generally at elevations above 2,500 feet. Timber production values have fluctuated widely in the County. In 1999, timber production represented more than half of the total agricultural production value countywide (Calaveras County 2019). However, in 2022, timber production value in the County was $91,137, less than 0.5% of the total value of agricultural production of Calaveras County and a 96% decrease from the 2021 value. One of the contributing factors of this decrease was brought on by lack of demand from the housing market (Calaveras County 2022).

The Important Farmland Maps, prepared by the California Department of Conservation as part of its Farmland Mapping and Monitoring Program, designate the viability of lands for farmland use, based on the physical and chemical properties of the soils. The maps categorize farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. Collectively, these three categories are referred to as "Farmland" by CEQA Guidelines Appendix G. There are also designations for other agricultural land, grazing land and for urban/built-up areas, among others. According to the 2020 Important Farmland Map of Calaveras County, the project is on land designated Grazing Land (FMMP 2020). According to the FMMP map, there is no Farmland in the project vicinity.

Environmental Impacts and Mitigation Measures

a) Farmland Conversion.

As noted, the project site is in an area designated as Grazing Land. Some nearby lands in and around West Point Project are designated Urban and Built-Up land. CEQA Guidelines Appendix G defines Farmland as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. None of these designations apply to the project site or vicinity. The project would have no impact on Farmland conversion.

b) Agricultural Zoning and Williamson Act.

The project site and surrounding area is zoned RA to accommodate forestry, agricultural and residential uses. Public works and utilities are allowed with a Conditional Use Permit. The project would be confined to the existing regulating reservoir site and would not interfere with any existing agricultural or forestry use in the vicinity.

The Williamson Act is State legislation that seeks to preserve farmland by offering property tax breaks to farmers who sign a contract pledging to keep their land in agricultural use. There are no lands in the project area subject to Williamson Act contracts. The project would have no impact related to agricultural zoning or Williamson Act contracts.

c) Forest Land Zoning.

As noted in b) above, the project is within an RA zone, which allows for forestry activities by right and allows for public works and utilities. The project involves improvements to an existing water reservoir; proposed enlargement of the reservoir would not introduce a new use type to the site, or any potential for conflicts with the RA zone. The project would have no impact on forest land zoning.

d) Forest Land Conversion.

The project is within a forested area. However, the proposed facilities would be in an area that has already been developed with the existing regulating reservoir and other CCWD water system facilities. It is expected that a substantial number of trees would be need to be removed within the expanded area to be inundated; outside of the project footprint, the surrounding forested area would remain in timber management.

The project site is owned by CCWD, a public agency, and is intended for water resource development. This site does not appear to meet the definition of timber land as defined by the Public Resources Code:

Enlargement of the existing reservoir use will require permanent removal of the existing tree cover. Whether the project will involve timber land conversion as defined by the Public Resources Code will need to be determined, and if require a timber conversion permit will need to be obtained.

e) Indirect Conversion of Farmland and Forest Land.

The project would involve improvements to an existing reservoir and WTP. As noted, there is no designated Farmland in the project vicinity, so the project would have no impact regarding indirect conversion of Farmland. The project would not involve the installation of infrastructure, such as roads, that could encourage the conversion of the existing forested area to non-forest use. The project would have no impact on the indirect conversion of forest land.

3.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	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 Attainment Plan?	☐	☐	✓	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	✓
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	✓	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	✓

Environmental Setting

Relatively few sources of air pollutant emissions are located within Calaveras County. However, air quality impacts occur through the transport of pollutants from the more developed Central Valley to the County. Therefore, while sources of emissions within the County may be limited, the transport of emissions from outside of the County can negatively impact air quality within the County. The most visible impacts to air quality originating within the County are a result of open burning of vegetation related to property owners, industrial activities, and state agencies (Calaveras County 2018).

The Calaveras County Air Pollution Control District (CCAPCD) is responsible for protecting public health by managing the County's air quality, and for achieving or maintaining ambient air quality standards set under both federal and California Clean Air Acts. Except for ozone and particulate matter less than 10 micrometers (PM_{10}), the Air Basin is in attainment of, or unclassified for, all federal and State ambient air quality standards. Ozone is not emitted directly into the air but is formed when reactive organic gases (ROG) and nitrogen oxides (NOx) react in the atmosphere in the presence of sunlight. PM_{10} is a mixture of solid and liquid particles suspended in air, including dust, pollen, soot, smoke, and liquid droplets.

In addition to the criteria pollutants, the ARB has identified other air pollutants as toxic air contaminants (TACs) - pollutants that are carcinogenic (i.e., cause cancer) or that may cause other adverse short-term or long-term health effects. Diesel particulate matter, considered a carcinogen, is the most common TAC, as it is a product of combustion in diesel engines. It is present at some concentration in all developed areas of the state. Other TACs are less common and are typically associated with industrial operations.

Environmental Impacts and Mitigation Measures

a) Air Quality Plan Consistency.

In order to evaluate air pollutant emissions from development projects, the CCAPCD established project-level significance thresholds for emissions of ROG, NO_x, and PM_{10}. The significance thresholds, expressed in pounds per day, serve as air quality standards in the evaluation of air quality impacts associated with proposed development projects. Thus, if a proposed project's emissions exceed the CCAPCD thresholds, the projects could have a significant effect on regional air quality and attainment of federal and State ambient air quality standards and may require mitigation. Table 3-1 shows the CEQA thresholds for significance for construction pollutant emissions within the CCAPCD together with estimated ROG, Nox and PM10 emissions for the project.

TABLE 3-1
CCAPCD SIGNIFICANCE THRESHOLDS AND
PROJECT AIR POLLUTANT EMISSIONS

	ROG	NO_x	PM_{10}
Construction Significance Thresholds	**150**	**150**	**150**
Project Construction Emissions	5.32	32.28	47.44
Above Threshold?	*No*	*No*	*No*

Note: All figures are in pounds per day. Construction emissions are maximum daily summer values.
Sources: EPA technical memos, CalEEMod version 2022.1, CCAPCD undated.

Potential project emissions of the criteria pollutants shown in the table were calculated by Environmental Permitting Specialists (EPS) based on assumed excavation and embankment construction volumes of 86,000 CY and 68,000 CY, respectively. Both of these activities would occur within the proposed reservoir footprint. Excavation volumes would exceed embankment construction volumes by approximately 20,000 cubic yards. Of this amount, it is possible that the entire amount would be used or stored on the project site; however, for the purposes of air quality emissions analysis, it was assumed that approximately half of that, or 10,000 CY, would be exported to a CCWD-owned storage site within three miles of the site. Estimated emissions based on these assumptions are shown in the table.

As indicated in Table 3-1, estimated construction emissions would be substantially below the significance thresholds established by CCAPCD for criteria pollutant emissions addressed by the thresholds. As the significance thresholds were established in part to ensure consistency with the objectives of air quality attainment plans adopted by the CCAPCD, project construction emissions would not conflict with these plans.

While project construction emissions would not be significant, the project would still be required to comply with applicable CCAPCD rules and regulations, which would further reduce potential air quality impacts. These regulations contain measures to reduce fugitive

dust emissions during construction. Dust control provisions are routinely included in site improvement plans and specifications, along with construction contracts.

After construction work is completed, the project would not generate any substantial air pollutant emissions from operations. Project impacts related to air quality plans would be less than significant.

b) Cumulative Emissions.

As noted in a) above, the project would not generate any substantial emissions once construction work is completed. Future attainment of federal and State ambient air quality standards is a function of successful implementation of the CCAPCD's attainment plans. Consequently, the application of significance thresholds for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

Pursuant to the CCAPCD's guidance, if project-specific emissions are less than the thresholds of significance for criteria pollutants, the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant. As the project would not generate any substantial operational emissions, it would not have a cumulatively considerable net increase of any criteria pollutant and therefore would have no impact on this issue.

c) Exposure of Sensitive Receptors.

"Sensitive receptors" are people particularly sensitive to air pollutants, including children, the elderly, and people with health issues. They also include land uses where such people may congregate, such as residences, schools, parks and playgrounds, nursing homes, and hospitals. There are several residences in the immediate vicinity of the project site EPS quantified potential diesel particulate emissions from use of construction equipment in constructing the enlarged reservoir and the associated cancer and health risks posed to nearby residences associated with these emissions. The calculated health risks of these project emissions to nearby residences are substantially below State standards of significance. As a result, the project would not involve any significant health risks associated with construction emission. As noted, project operations would not generate any substantial air pollutant emissions impacts on sensitive receptors. Project impacts on sensitive receptors would be less than significant.

d) Odors and Other Emissions.

The project does not involve any features that would generate any new or increased odors associated with WTP operations. Construction equipment could generate exhaust that would be considered odorous. However, exposure would be limited, and the exhaust emissions would quickly dissipate.

Construction emissions would likely include diesel particulate matter, which is a TAC. However, these emissions would have adverse effects on sensitive receptors only with long-term exposure, and diesel particulate emissions would cease once construction work

is completed. No diesel particulate matter would be generated by project operations. The project would have no impact related to odors or other emissions.

3.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Adversely impact, either directly or through habitat modifications, any endangered, rare, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?	☐	✓	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or 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 Conservation Community Plan, or other	☐	☐	☐	✓

approved local, regional, or state habitat conservation plan?

Information for this section is provided mainly from a field survey, biological assessment and aquatic resources delineation report for the project prepared by Graening and Associates in 2025, The biological assessment is shown in Appendix B of this IS/MND.

Environmental Setting

The Graening Biological Assessment provides information about the biological resources within the project area, the regulatory environment affecting such resources, any potential project-related impacts upon these resources, and finally, to identify mitigation measures and other recommendations to reduce the significance of these impacts, if any Graening's specific scope of services performed for this assessment consisted of the following tasks:

- Compile all readily-available historical biological resource information about the Project Area;
- Spatially query state and federal databases for any occurrences of special-status species or habitats within the project area and vicinity;
- Perform a reconnaissance-level field survey of the project area, including photographic documentation;
- Inventory all flora and fauna observed during the field survey;
- Characterize and map the habitat types present within the project area, including any potentially-jurisdictional water resources;
- Evaluate the likelihood for the occurrence of any special-status species;
- Assess the potential for the project to adversely impact any sensitive biological resources;
- Recommend mitigation measures designed to avoid or minimize project-related impacts; and
- Prepare and submit a report summarizing all of the above tasks.

The project area is located within the cis-montane Sierra Nevada mountains geographic subregion, which is contained within the Sierra Nevada Mountains geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012). The Study Area is in Climate Zone 2b "Warmer-Summer Intermountain Climate", characterized by milder summers and longer and colder winters than in the Central Valley. The topography of the area is a broad valley incised by a small stream, but it has been altered by the creation of the existing reservoir. The general direction of surface runoff in the area is into the reservoir and then to the southwest in an unnamed channel. The elevation ranges from approximately 2,950 feet to 3,060 feet above mean sea level. The land uses of the area

include the water supply reservoir, open space, rural estates, forestry open space, transportation corridors, and grazing land.

Consulting biologist Dr. Geo Graening conducted a reconnaissance-level field survey on March 27, 2025. Survey efforts emphasized the search for any special-status species that had documented occurrences in the CNDDB within the vicinity of the Project Area and those species on the USFWS species list. Additional methodology information is shown in IS/MND Appendix B.

The locations of any special-status species sighted were marked on aerial photographs and/or georeferenced with a geographic positioning system (GPS) receiver. Habitat types occurring in the project area were mapped on aerial photographs, and information on habitat conditions and the suitability of the habitats to support special-status species was also recorded (see Figure 3-1). The project area was also informally assessed for the presence of potentially-jurisdictional water features, including riparian zones, isolated wetlands and vernal pools, and other biologically-sensitive aquatic habitats.

The boundaries of potentially jurisdictional water resources within the Project Area were identified mapped and measured in the field. were classified using the CNPS vegetation classification system. Preliminary wetland delineation methods consisted of an abbreviated, visual assessment of the three requisite wetland parameters (hydrophytic vegetation, hydric soils, hydrologic regime) defined in the US Army Corps of Engineers Wetlands Delineation Manual. Wildlife habitats were classified according to the CDFW's California Wildlife Habitat Relationships System.

All plants detected during the field survey of the project area are listed in Appendix B. The following animals were detected within the project area during the field survey: moths and butterflies; ants; Canada goose; great blue heron; red-winged blackbird; Stellar's jay; spotted towhee; northern flicker; black phoebe; song sparrow; hermit thrush; yellow-rumped warbler; acorn woodpecker; golden-crowned sparrow; chipping sparrow; black tailed deer; and Pacific chorus frog. No federally-listed species were detected. No special-status species were detected.

General vegetation communities occurring in the Project Area were mapped (Figure 3-1) specifically, including the following terrestrial natural communities:

- Pinus ponderosa - Calocedrus decurrens - Pseudotsuga menziesii Forest & Woodland Alliance (Ponderosa pine - Incense Cedar - Douglas fir forest and woodland)
- Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni) Forest & Woodland Alliance (Mixed oak forest and woodland)
- Arctostaphylos viscida Shrubland Alliance (Whiteleaf manzanita chaparral)
- Ceanothus cuneatus Shrubland Alliance (Buck brush chaparral)
- Typha (angustifolia, domingensis, latifolia) Herbaceous Alliance (Cattail marshes)

- Juncus - Carex Herbaceous Alliance (Rush - sedge marshes)
- Salix gooddingii - Salix laevigata Forest & Woodland Alliance (Goodding's willow - red willow riparian woodland and forest)

In addition to these natural communities, the project area contains open water (in the reservoir) and ruderal/developed areas (the roads, the dam, etc.).

The CNDDB reported no special-status habitats within the project area. The CNDDB reported the following special-status habitats in a 10-mile radius outside of the Project Area: Central Valley Drainage Hardhead/Squawfish Stream; Central Valley Drainage Resident Rainbow Trout Stream; Ione chaparral; Sacramento-San Joaquin Foothill/Valley Ephemeral Stream.

No critical habitat for any federally-listed species occurs within the project area. The following special-status habitats were detected within the Project Area during the field survey: riparian habitat and wetlands.

Wildlife movement corridors link remaining areas of functional wildlife habitat that are separated primarily by human disturbance, but natural barriers such as rugged terrain and abrupt changes in vegetation cover are also possible. Wilderness and open lands have been fragmented by urbanization, which can disrupt migratory species and separate interbreeding populations. Corridors allow migratory movements and act as links between the separated populations. The Bear Creek river corridor functions as a wildlife corridor; Bear Creek also contains fishery resources.

The project area is not located within any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Special Status Plant Species

During the field survey, no special-status plant on wildlife species were detected within the project area. The aquatic habitats within the project area have the potential for harboring three special-status plant species: scalloped moonwort, watershield, and yellow-lip pansy monkeyflower.

The CNDDB reported no special-status species occurrences within the project area. No special status plants were reported by the USFWS within a 10-mile buffer of the project area boundary, the CNDDB reported several special-status species occurrences, summarized in the table in Appendix B along with any additional CNPS plant species.

Special Status Wildlife Species

A USFWS wildlife species list was generated online using the USFWS' IPaC Trust Resource Report System (see Appendix B). This list is generated using a regional and/or watershed approach and does not necessarily indicate that the project area provides suitable habitat. The following listed species should be considered in the impact assessment:

- Gray Wolf (*Canis lupus*) Endangered

- California Spotted Owl (*Strix occidentalis occidentalis*) Proposed Threatened
- Northwestern Pond Turtle (*Actinemys marmorata*) Proposed Threatened
- California Red-legged Frog (*Rana draytonii)* Threatened
- Foothill Yellow-legged Frog (*Rana boylii, South Sierra Distinct Population Segment*) Endangered
- Western Spadefoot (*Spea hammondii*) Proposed Threatened
- Monarch Butterfly (*Danaus plexippus*) Proposed Threatened

Numerous migratory bird species protected under the Migratory Bird Species Act have potential to occur the project area and are considered in the following impact analysis

The aquatic habitats within the Project Area have the potential for harboring four special-status animal species: southern long-toed salamander (Ambystoma macrodactylum sigillatum), foothill yellow-legged frog, California red-legged frog, and western pond turtle (Emys marmorata).

The forest habitats within the project area have the potential for harboring special-status bat and bird species, specifically: silver-haired bat (Lasionycteris noctivagans), hoary bat (Lasiurus cinereus), long-legged myotis (Myotis volans), Townsend's big-eared bat (Corynorhinus townsendii), great gray owl (Strix nebulosa), and sharp-shinned hawk (Accipiter striatus).

Wetlands and Waters

The USFWS National Wetland Inventory reported three water features within the project area (see Figures 3-2 and 3-3) the reservoir; the stream feeding in to the reservoir; and the stream leaving the reservoir. A formal assessment for the presence of potentially jurisdictional water resources within the project area was also conducted during the field survey and reported in a separate report, also shown in Appendix B. The waters inventoried by Graening are shown on Figures 3-2 and 3-3 listed.

Upper channel: 3,846 sq. ft.; 0.088 acre; 445 linear feet; this is the unnamed intermittent channel that flows into the reservoir; it has a cobble bottom and is surrounded by riparian forest

Spillway: 3,449 sq. ft.; 0.079 acre; 280 linear feet; this is a shallow, concrete-lined, trapezoidal canal; devoid of vegetation

Lower channel: 394 sq. ft.; 0.009 acre; 59 linear feet; it has a cobble/bedrock bottom; it is fed by the spillway via a pipe culvert; cattails and reeds (Juncus) dominate.

Marsh, lacustrine: 48,485 sq. ft.; 1.113 acres; this is a series of emergent wetlands that are dominated by cattails

Marsh palustrine: 1,790 sq. ft.; 0.041 acre; this is a small, seasonal emergent wetland that is dominated by sedges and reeds

Marsh, upper: 4,221 sq. ft.; 0.097 acre; this is seasonal emergent wetland that is dominated by cattails and is created by the road over the upper channel; a pipe culvert connects it to the downstream channel

Marsh, lower: 165 sq. ft.; 0.004 acre; this is a seasonal emergent marsh that is between the spillway and the pipe culvert leading to the lower channel.

Open water: 154,515 sq. ft.; 3.547 acres This is the open water of West Point Regulating Reservoir at max. pool height (OHWM).

Southside riparian: 10,197 sq. ft.; 0.234 acre; this is a narrow band of riparian forest on the southside of the upper channel; it is dominated by willows and alders

Northside riparian: coordinates 13,096 sq. ft.; 0.301 acre; this is a narrow band of riparian forest on the northside of the upper channel; it is dominated by willows and alders

REGULATORY SETTING

Special-status Species Regulations

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service implement the Federal Endangered Species Act of 1973 (FESA) (16 USC §1531 et seq.). Threatened and endangered species on the federal list (50 CFR §17.11, 17.12) are protected from "take" (direct or indirect harm), unless a FESA Section 10 Permit is granted or a FESA Section 7 Biological Opinion with incidental take provisions is rendered. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC §1536[3], [4]). Therefore, project-related impacts to these species or their habitats would be considered significant and would require mitigation. Species that are candidates for listing are not protected under FESA; however, USFWS advises that a candidate species could be elevated to listed status at any time, and therefore, applicants should regard these species with special consideration.

The California Endangered Species Act of 1970 (CESA) (California Fish and Game Code §2050 et seq., and CCR Title 14, §670.2, 670.51) prohibits "take" (defined as hunt, pursue, catch, capture, or kill) of species listed under CESA. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Section 2081 establishes an incidental take permit program for state-listed species. Under CESA, California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of threatened and endangered species designated under

state law (CFG Code 2070). CDFW also maintains lists of species of special concern, which serve as "watch lists." Pursuant to requirements of CESA, an agency reviewing proposed projects within its jurisdiction must determine whether any state-listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation.

California Fish and Game Code Sections 4700, 5050, and 5515 designates certain mammal, amphibian, and reptile species "fully protected," making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The California Native Plant Protection Act of 1977 (CFG Code §1900 et seq.) requires CDFW to establish criteria for determining if a species or variety of native plant is endangered or rare. Section 19131 of the code requires that landowners notify CDFW at least 10 days prior to initiating activities that will destroy a listed plant to allow the salvage of plant material.

Many bird species, especially those that are breeding, migratory, or of limited distribution, are protected under federal and state regulations. Under the Migratory Bird Treaty Act of 1918 (16 USC §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbances must be reduced or eliminated during the nesting cycle. California Fish and Game Code (§3503, 3503.5, and 3800) prohibits the possession, incidental take, or needless destruction of any bird nests or eggs. Fish and Game Code §3511 designates certain bird species "fully protected", making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The Bald and Golden Eagle Protection Act (16 USC §668) specifically protects bald and golden eagles from harm or trade in parts of these species.

California Environmental Quality Act (CEQA) (Public Resources Code §15380) defines "rare" in a broader sense than the definitions of threatened, endangered, or fully protected. Under the CEQA definition, CDFW can request additional consideration of species not otherwise protected. CEQA requires that the impacts of a project upon environmental resources must be analyzed and assessed using criteria determined by the lead agency. Sensitive species that would qualify for listing but are not currently listed may be afforded protection under CEQA. The CEQA Guidelines (§15065) require that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines (§15380) provide for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Plant species on the California Native Plant Society CRPR Lists 1A, 1B, or 2 are typically considered rare under CEQA. California "Species of Special Concern" is a category conferred by CDFW on those species that are indicators of regional habitat changes or are considered potential future protected species. While they do not have statutory protection, Species of Special Concern are typically considered rare under CEQA and thereby warrant specific protection measures.

Water Resource Protection

Real property that contains water resources are subject to various federal and state regulations and activities occurring in these water resources may require permits, licenses, variances, or similar authorization from federal, state and local agencies, as described next.

The Federal Water Pollution Control Act Amendments of 1972 (as amended), commonly known as the Clean Water Act (CWA), established the basic structure for regulating discharges of pollutants into "waters of the United States". Waters of the US includes essentially all surface waters, all interstate waters and their tributaries, all impoundments of these waters, and all wetlands adjacent to these waters. CWA Section 404 requires approval prior to dredging or discharging fill material into any waters of the US, especially wetlands. The permitting program is designed to minimize impacts to waters of the US, and when impacts cannot be avoided, requires compensatory mitigation. The US Army Corps of Engineers (USACE) is responsible for administering Section 404 regulations. Substantial impacts to jurisdictional wetlands may require an Individual Permit. Small-scale projects may require only a Nationwide Permit, which typically has an expedited process compared to the Individual Permit process. Mitigation of wetland impacts is required as a condition of the CWA Section 404 Permit and may include on-site preservation, restoration, or enhancement and/or off-site restoration or enhancement. The characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands to achieve no net loss of wetlands.

Under CWA Section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. The California State Water Resources Control Board is responsible for administering CWA Section 401 regulations.

California Fish and Game Code (§1601 - 1607) protects fishery resources by regulating "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW requires notification prior to commencement, and issuance of a Lake or Streambed Alteration Agreement, if a proposed project will result in the alteration or degradation of ''waters of the State"(Figures 3-3). The limit of CDFW jurisdiction is subject to the judgment of the Department; currently, this jurisdiction is interpreted to be the "stream zone", defined as "that portion of the stream channel that restricts lateral movement of water" and delineated at "the top of the bank or the outer edge of any riparian vegetation, whichever is more landward". CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Streambed Alteration Agreement. Projects that require a Streambed Alteration Agreement may also require a CWA 404 Section Permit and/or CWA Section 401 Water Quality Certification.

Tree Protection

At the State level, on private timberland, tree removal is subject to the conditions and requirements set forth in the Z'berg-Nejedly Forest Practice Act and the California Forest

Practice Rules. If development of a project will result in the removal of commercial tree species, one of the following permits is needed: Less than 3 Acre Conversion Exemption; Christmas Tree; Dead, Dying or Diseased, Fuelwood, or Split Products Exemption; a Public Agency, Public and Private Utility Right of Way Exemption; a Notice of Exemption from Timberland Conversion Permit for Subdivision; or an Application for Timberland Conversion Permit. The forested CCWD lands may or may not be subject to these requirements. This will need to be determined during further review of the project.

Environmental Impacts and Mitigation Measures

The limits of grading encompass an area of approximately 11.7 acres.

a) Special-Status Species.

The project site aquatic habitats have the potential for harboring three special-status plant species: scalloped moonwort, watershield, and yellow-lip pansy monkeyflower. The aquatic habitats have the potential for harboring four special-status animal species: southern long-toed salamander, foothill yellow-legged frog, California red-legged frog, and western pond turtle. The forest habitats within the project area have the potential for harboring the following special-status bat and bird species: silver-haired bat, hoary bat, long-legged myotis, Townsend's big-eared bat, great gray owl, and sharp-shinned hawk. During the field survey, no listed species or special-status species were observed within the project area. However, special-status species could be undetected or they could migrate into project areas between the time that the field survey was completed and the start of construction. This is a potentially significant impact before mitigation.

Special-status bird and bat species were reported in databases (CNDDB and USFWS) in the vicinity of the project area. The project area contains suitable nesting and roosting habitat for various bird and bat species. If construction activities are conducted during the nesting season or the bat roosting birds, nesting birds or roosting bats could be directly impacted by tree removal and indirectly impacted by noise, vibration, and other construction-related disturbance. Project construction is considered a potentially significant adverse impact to nesting birds and roosting bats. With the implementation of Mitigation Measure Bio-1, adverse impacts upon special-status species would be reduced to a less-than-significant level.

Level of Service: Potentially significant

<u>Mitigation Measures</u>:

BIO-1: A pre-construction survey for special-status species should be performed by a qualified biologist to ensure that special-status species are not present. The focal species are scalloped moonwort, watershield, yellow-lip pansy monkeyflower, southern long-toed salamander, foothill yellow-legged frog, California red-legged frog, and western pond turtle. If any listed species are detected, construction should be delayed, and protection measures including avoidance measures, initiated defined by a qualified biologist in

consultation with the appropriate wildlife agency (CDFW and/or USFWS). With the implementation of this mitigation measure, adverse impacts upon special-status species would be reduced to a less-than-significant level.

BIO-2: A qualified biologist, in consultation with CDFW and/or USFWS, should develop measures to avoid "take" of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site.

BIO-3: A pre-construction bat survey should be performed by a qualified biologist to ensure that bats are not roosting in trees that will be felled or near construction activities where a bat colony could be adversely affected. The focal species are silver-haired bat, hoary bat, long-legged myotis, Townsend's big-eared bat. If any bat roosts or colonies are detected, construction should be delayed, and the appropriate wildlife agency (CDFW and/or USFWS) should be consulted, avoidance measures initiated, and project impacts and mitigation reassessed. With the implementation of this mitigation measure, adverse impacts upon bat populations would be reduced to a less-than-significant level.

The Project Area is not within any designated listed species' critical habitat.

b) Riparian and Other Sensitive Natural Communities.

The Project Area contains special-status habitats that will be impacted: riparian habitat and wetlands. This is a significant impact before mitigation.

Southside Riparian: 0.234 acre of riparian forest will be removed, but 0.270 acres of riparian forest is proposed to be created around new reservoir perimeter

Northside Riparian: 0.301 acre of riparian forest will be removed, but 0.347 acres of riparian forest is proposed to be created around new reservoir perimeter

The project will also require a California Fish and Game Code Section 1600 lake or streambed alteration agreement for impacts to water resources and to riparian habitat. Avoidance and minimization measures, as well as compensatory mitigation for loss of jurisdictional waters and riparian, is required by federal and state permits to maintain the policy of "No Net Loss" of wetlands and other protected water resources. Compensatory mitigation would consist of any combination of in-lieu fee payment to a mitigation bank, habitat enhancement or creation, or land dedication, at mitigation ratios determined by USACE. The applicability and value of these mitigations will be determined during the

CDFW Section 1600 process. The acquisition of these permits, and the performance of avoidance, minimization, and mitigation measures would reduce impacts to water resources to a less than significant level.

c) State and Federally Protected Wetlands.

There are jurisdictional Waters of the U.S. and wetlands in the site. There are also areas in the site meeting the criteria of Waters of the State, including wetlands. The project would have potentially significant impacts on State or federally protected Waters or wetlands, as listed below. Project implementation will cause the following direct impacts to aquatic resources:

Channels

Channel, Upper: inundation of 398 feet of channel

Spillway: modifications to concrete spillway may shorten this artificial channel by 10 feet

Channel, Lower: project will have no effect on this feature

Wetlands

Marsh, Lacustrine: gain of 0.867 acre of lacustrine wetlands

Marsh, Palustrine: loss (by inundation) of 0.041 acre of palustrine wetland

Marsh, Upper: project will have no effect on this feature

Marsh, Lower: project will have no effect on this feature

Open Water

Open water: 3.952 acres of open water will be created

Riparian Zone

Southside: 0.234 acre of riparian forest will be removed, but 0.270 acres of riparian forest is proposed to be created around new reservoir perimeter

Northside: 0.301 acre of riparian forest will be removed, but 0.347 acres of riparian forest is proposed to be created around new reservoir perimeter

The project will require a Jurisdictional Determination and/or a Section 404 permit from the US Army Corps of Engineers. The project will also require a California Fish and Game Code Section 1600 lake or streambed alteration agreement for impacts to water resources

and to riparian habitat. Avoidance and minimization measures, as well as compensatory mitigation for loss of jurisdictional waters and riparian, is required by federal and state permits to maintain the policy of "No Net Loss" of wetlands and other protected water resources. Compensatory mitigation would consist of any combination of in-lieu fee payment to a mitigation bank, habitat enhancement or creation, or land dedication, at mitigation ratios determined by USACE. The acquisition of these permits, and the performance of avoidance, minimization, and mitigation measures would reduce impacts to water resources to a less than significant level.

d) Fish and Wildlife Movement.

The Bear Creek river corridor functions as a wildlife corridor; Bear Creek also contains fishery resources. Implementation of the proposed project will erect some new barriers but, in general, will not substantially affect wildlife movement. Fishery resources could be impacted, but aquatic resources mitigation measures will protect these resources. Thus, implementation of the proposed project is a less than significant impact upon wildlife movement. Implementation of the project will 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.

e) Local Biological Requirements.

Implementation of the proposed project will require the removal of mature trees that may be subject to CAL FIRE regulations. The degree to which CAL FIRE regulations apply has yet to be determined. This is a potentially significant impact before mitigation. The project will need to conform, as appropriate to California. Forest Practice's Act and the California Forest Practice Rules.

f) Conflict with Habitat Conservation Plans.

No Habitat Conservation Plans, Natural Community Conservation Plans, or similar regional or local plans cover the project site. Therefore, the project would not conflict with habitat conservation plans. The project would have no impact on this issue.

3.5 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 Section 15064.5?	☐	☐	☐	✓

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	✓	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	✓	☐

Information for this section is provided mainly from a cultural resource report prepared by Natural Investigations Company, except where otherwise noted. The report is not included in this IS/MND.

Archaeological and traditional property locations are considered confidential and should not be disclosed to the general public or unauthorized persons. The Natural Investigations study document contains sensitive information regarding the nature and location of archaeological sites and is therefore excluded from this Initial Study and appendices. Authorized persons may obtain access to this information by contacting CCWD. The preparation of the report involved a search of cultural resource databases, including the California Historical Resources Information System (CHRIS), and a field survey of all portions of the project site. Record search work included a search of the Native American Heritage Commission's (NAHC) Sacred Lands File (SLF), and a paleontological records search from the University of California Museum of Paleontology (UCMP).

Record searches yielded seven previous surveys and four cultural resources within the four parts of the APE. In addition, thirty-three previous surveys and forty-five cultural resources were identified within the 0.5-mile buffer of the APE. The SLF identified no listed sacred sites.

Letters concerning the project were submitted to the Buena Vista Rancheria of Me-Wuk Indians, the Calaveras Band of Mi-Wuk Indians, the Chicken Ranch Rancheria of Me-Wuk Indians, the Ione Band of Miwok Indians, the Jackson Rancheria Band of Miwuk Indians, the Nashville Enterprise Miwok-Maidu-Nishinam Tribe, the Pakan'yani Maidu of Strawberry Valley Rancheria, the Susanville Indian Rancheria, and the Washoe Tribe of Nevada and California. The Calaveras Band of Mi-Wuk Indians indicated that the area was highly sensitive and wished to obtain more information regarding the project.

A search of the UCMP database for Calaveras County was conducted by Natural Investigations on March 15, 2025. UCMP records indicate 31 fossils are known within Calaveras County but none within the four parts of the APE. No paleontological resources and no unique geologic features or outcrops were identified during survey.

Environmental Setting

The project site is within an area historically occupied by the Northern Sierra Mi-wuk, also spelled Miwok. Section 3.18, Tribal Cultural Resources, discusses the Northern Sierra Mi-wuk in more detail. They are one of four other Mi-wuk groups (Bay, Plains, Central Sierra, and Southern Sierra) whose Eastern Miwok language is a subfamily of the Miwokan branch

of the Utian language family, which is regarded as a subgroup of Penutian stock. Prior to Euro-American contact, Northern Sierra Mi-wuk occupied the foothills and mountains of the Mokelumne and Calaveras River drainages. Neighboring groups included the Washoe to the east, Central Sierra and Southern Sierra Mi-wuk to the southeast, Plains Mi-wuk to the west, and Nisenan to the north.

Seasonally mobile hunter-gatherers with semi-permanent villages, the foothills and mountains provided the Northern Sierra Mi-wuk with an abundance of natural resources. Acorns were of particular importance to the diet. Oak trees from which this staple food was gathered annually were carefully preserved by the Sierra Mi-wuk. The Mi-wuk hunted, gathered or fished antelope, elk, rabbit, salmon, waterfowl, and valley oak acorns at the lower elevations. Deer, rabbit, salmon, valley quail, gray pine nuts, blue oak acorns, and live oak acorns were obtained in the foothills. At the higher elevations, resources included deer, squirrel, trout, mountain quail, pigeons, nuts of the sugar pine, and black oak acorns.

Political units among the Mi-wuk were structured by similarities in language and ethnicity, and villages were divided into "tribelets". Tribelets controlled specific lands and the natural resources within that territory. The population size of Sierran Mi-wuk tribelets averaged between 100 and 300 individuals. The territory of each Mi-wuk tribelet typically included a main village and smaller satellite villages. Semi-permanent Northern Sierra Mi-wuk settlements or winter villages were clustered along the Mokelumne and Calaveras river drainages. Traditional houses were made of thatching, tule matting, or slabs of bark over a conical framework of poles. Villages also contained acorn granaries, winter grinding houses, and conical sweathouses.

Similar to other California Native American groups, the Mi-wuk employed a variety of tools, implements, and enclosures for hunting and collecting natural resources. The bow and arrow, snares, traps, nets, and enclosures or blinds were used for hunting land mammals and birds. For fishing, they made canoes from tule, balsa, or logs, and used harpoons, hooks, nets, and basketry traps. To collect plant resources, they used sharpened digging sticks, long poles for dislodging acorns and pinecones, and a variety of woven tools (seed beaters, burden baskets, and carrying nets).

Foods were processed with a variety of tools, such as bedrock mortars, cobblestone pestles, anvils, and portable stone or wooden mortars that were used to grind or mill acorns and seeds. Additional tools and implements included knives, anvils, leaching baskets and bowls, woven parching trays, and woven strainers and winnowers. Prior to processing, the acorns were stored in the village granaries. Earth ovens were used by the Mi-wuk to bake acorn bread.

The Mi-wuk participated in an extensive east-west trade network between the coast and the Great Basin. From coastal groups marine shell (Olivella and abalone) and steatite moved eastward, while salt and obsidian traveled westward from the Sierras and Great Basin. Basketry, an important trade item, moved in both directions.

The discovery in 1848 of gold in the western Sierra Nevada foothills and the ensuing Gold Rush led to a flood of non-indigenous peoples into Mi-wuk territory. Sierran Mi-wuk remained in rancherias scattered throughout the foothills, but in addition to traditional

hunting and gathering, they worked seasonally as paid laborers on foothills farms and ranches. Their reliance on cash income increased as natural resources decreased with the growth of non-Miwukan communities and towns in their traditional territory.

During the first half of the 1900s, the federal government acquired lands and established reservations, or rancherias, for the Plains Mi-wuk, Northern Sierra Mi-wuk and Central Sierra Mi-wuk. The U.S. Bureau of Indian Affairs terminated relations with most of these rancherias between 1934 and 1972, but status has been restored to the majority of the rancherias, beginning in 1984. At present, there are seven federally-recognized rancherias (Wilton, Shingle Springs, Jackson, Buena Vista, Sheep Ranch, Tuolumne, and Chicken Ranch) in Amador, Calaveras, El Dorado, Lake, and Tuolumne counties that have primarily or exclusively Eastern Mi-wuk populations.

The Mi-wuk had a sizeable presence in the project region numbering about 10,000 and moved to West Point in the 1890s. However, by 1900 they were forced to leave and settled on Bald Mountain Road. In 1914 they were granted Allotments by President Woodrow Wilson. Roundhouses at the Eaph property was the site of Big Times celebrations. This celebration has been revived as recently as 2010 on the Frank Fisher Allotment.

Spanish Period

Between 1769 and 1823, 21 missions were established by the Spanish and the Franciscan Order along the coast between San Diego and San Francisco. The Spanish expeditions into the Central Valley in 1806 and 1808 led by Lieutenant Gabriel Moraga explored along the main rivers, including the American, Calaveras, Cosumnes, Feather, Merced, Mokelumne, Sacramento San Joaquin, and Stanislaus. In 1813, Moraga led another expedition in the lower portion of the Central Valley and gave the San Joaquin River its name. The last Spanish expedition into California's interior was led by Luis Arguello in 1817 and traveled up thte Sacramento River, past the future site of the city of Sacramento to the mouth of the Feather River, before returning to the coast.

Mexican Period

After the end of the Mexican Revolution (1810–1821) against the Spanish crown, the Mexican Period is marked by an extensive era of land grants, most of which were in the interior of the state, as well as by exploration by American fur trappers west of the Sierra Nevada Mountains. Most of the land grants to Mexican citizens in California (Californios) were in the interior since the Mexican Republic sought to increase the population away from the more settled coastal areas where the Spanish settlements had been concentrated. The largest land grants in the Sacramento Valley were awarded to John Sutter. In 1839, he founded a trading and agricultural empire called New Helvetia that was headquartered at Sutter's Fort near the divergence of the Sacramento and American rivers in today's City of Sacramento (Hoover et al. 2002). One land grant, the majority of which was in neighboring Stanislaus County, was issued within today's Calaveras County. Awarded in 1843 and located north of the Stanislaus River, the 48,887-acre Rancheria del Rio Estanislao also bordered present-day Tuolumne County to the south.

American Period

The first American trapper to enter California, Jedediah Smith, explored along the Sierra Nevada in 1826 and in 1827, he entered the Sacramento Valley, traveling along the American and Cosumnes rivers. In 1827, Smith also traveled through the San Joaquin Valley. Other trappers soon followed, including employees of the Hudson's Bay Company in 1832. Between 1830 and 1833, and again in 1837, diseases introduced by the non-indigenous explorers, trappers, and settlers, as well as relocation to the missions, military raids, and settlement by non-native groups, decimated native Californian populations, communities, and tribes in the Sacramento and San Joaquin valleys.

The American Period was initiated in 1848 with the signing of the Treaty of Guadalupe Hidalgo, which ended the Mexican–American War (1846–1848), and California became a territory of the United States. Gold was discovered at Sutter's Mill on the American River in Coloma the same year, and by 1849, nearly 90,000 people had journeyed to the gold fields. In 1850, largely as a result of the Gold Rush, California became the thirty-first state. Four years later, the bustling boomtown of Sacramento became the state capital. In contrast to the economic boom and population growth that enabled statehood, the loss of land and territory (including traditional hunting and gathering locales), malnutrition, starvation, and violence further contributed to the decline of indigenous Californians in the Central Valley and all along the Sierra Nevada foothills.

Calaveras County and West Point History

Created in 1850 at the time of statehood, Calaveras County is one of the original 27 counties of California. To the north and south, the county is bordered by two major rivers, Mokelumne and Stanislaus, respectively. Tradition states the name of the county was derived from that of the Calaveras River, so named by Spanish Lieutenant Gabriel Moraga during the expedition of 1808. Other accounts indicate the Spaniards referred to the waterway as Rio San Juan and that calaveras, the Spanish word for skulls, was adopted after the discovery of numerous skeletal remains on the river banks by the John Marsh party in 1836/1837. Maps dated 1841 show both names, but the map produced by John Frémont and Charles Preuss in 1845 shows only Río de las Calaveras. The discovery by the Marsh party may reflect the effect of the malarial epidemics of 1833 and 1837 that decimated indigenous populations, leaving no one to bury the dead.

Located in the central part of the Mother Lode, the history of Calaveras County is deeply tied to the Gold Rush era and the mining of gold as well as copper. Angels Camp, Murphys, and Carson Hill were established as placer gold mining camps by George and Henry Angel, John and Dan Murphy, and James Carson in the summer of 1848. Mokelumne Hill and San Andreas were also founded in 1848. By 1849, thousands of gold seekers had traveled to the region, many of them traveling the route followed by today's State Route 26. Additional communities, such as Calaveritas, Campo Seco, and El Dorado, were established and named after prominent mines or miners, locations, or events. Jenny Lind, once the center of mining operations on the lower Calaveras River, was named after an opera star. In 1860, an extensive deposit of copper (the second largest in the state) was discovered in the southwestern part of the county at Copperopolis, with more than $1,600,000 worth of

copper shipped east via Stockton during the Civil War era and via the Stockton-Copperopolis Railroad beginning in the early 1870s.

At an elevation of 2,769 feet (816.5 meters) above sea level, West Point (originally named Indian Gulch) was founded in 1825 and was officially named West Point in 1854 in reference to the name of a camp set up nearby by Kit Carson. The name was changed again to Westpoint in 1895 and then back to West Point in 1947. Due to its association with Kit Carson, the entire town of West Point has been named a historical landmark by the Office of Historic Preservation, California State Parks, with registration number 268 and was registered in 1937. A historical marker was installed at the intersection of State Hwy 26 and Main Street. The marker states that an emigrant road forked near Big Meadow, whose north branch came directly to West Point, and a thriving trading post (prior to the discovery of gold in the region) was located there.

The town of West Point was established as a mining supply camp for quartz mining which eventually shifted to gold. The GLO Plat of 1873, lists the Old Henry and Billy Williams gold mines and within the region. Due to a lack of trails, emigration to this area came from Volcano, across the Mokelumne River to the north. The most notable quartz mines were Lockwood, Champion, Lone Star, Blazing Star, and Keltz. Beyond mining, West Point also had a robust logging industry which was hampered by methods of transport. Many methods of floating logs were tried, most of which failed until the advent of trucking, and railways were never established in the area.

Natural Investigations conducted a pedestrian survey of the reservoir and borrow site portions of the project on March 27, 2025 and identified one site, NIC-2025-WestPoint-01, which is recommend as not eligible for the National Register of Historic Place (NRHP). In addition, Natural Investigations updated the site record for site P05-002370 and determined that the Bear Creek Ditch has been destroyed and recommended the reservoir portions of site P05-002370 as not eligible for inclusion in the NRHP.

A search of the UCMP database for Calaveras County was conducted by Natural Investigations on March 15, 2025. UCMP records indicate 31 fossils are known within Calaveras County but none within the four parts of the APE. No paleontological resources and no unique geologic features or outcrops were identified during survey.

Environmental Impacts and Mitigation Measures

a) Historical Resources.

A records search of the California Historical Resources Information System indicated that historic-era cultural resources had been identified near the project site. None of these was recommended as eligible for listing. Based upon the conclusions of the Natural Investigations cultural resource report, the project would have no impact on historical resources.

b) Archaeological Resources.

The cultural resource report stated that no archaeological resources on the project site were identified during the Natural Investigations study, and no other cultural resources were

previously recorded within the area of potential effect. Considering that the project area has been disturbed due to past water resources the development, the potential for the discovery of buried archaeological materials within the project area is low. As a result, the report does not recommend additional cultural resources work; monitoring of ground-disturbing activity is likewise not recommended.

However, the report noted that it is possible to inadvertently uncover cultural resources during ground-disturbing project activities. Mitigation described below would require work to be stopped when cultural resources are uncovered until these resources can be evaluated by a qualified archaeologist and recommendations made for their proper disposition. Implementation of this mitigation measure would reduce cultural resource impacts to a level that would be less than significant.

Mitigation Measures:

CULT-1: If buried cultural resources are inadvertently discovered during ground-disturbing activities, work shall stop within 50 feet of the find until a qualified archaeologist can assess the significance of the find. If necessary, the archaeologist will develop appropriate treatment measures in consultation with the CCWD and other agencies as appropriate. Treatment measures may include, but are not limited to, preservation in place or excavation under supervision of a qualified archaeologist.

c) Human Burials.

The cultural resource report considers the discovery of human remains on the project site unlikely. However, it did state that the discovery of human remains is always a possibility during ground-disturbing activities.

California Public Resources Code Section 5097.98 and California Health and Safety Code Section 7050.5 describe the procedures to be followed when human remains are uncovered in a location outside a dedicated cemetery. The Calaveras County Sheriff/Coroner shall be contacted immediately. If it is determined that the remains are Native American in origin, then the County Sheriff/Coroner shall contact the Native American Heritage Commission, which in turn shall appoint a Most Likely Descendant to act as a tribal representative. The Most Likely Descendant shall develop a plan for the proper treatment of remains and associated funerary objects.

Compliance with the applicable codes and with the CEQA Guidelines section would ensure that any human remains and associated grave goods encountered during project construction would be treated with appropriate dignity. Project impacts on human remains would be less than significant.

d) Paleontological Resources

No paleontological resources or unique geologic features were identified during the survey, and none were previously known within the APE. Enlargement of the WPRR, use of soil

from the borrow pits, or disposal of soils at the disposal site does not have the potential to cause an impact on any resource that would qualify as a paleontological resource.

Based on the results of the search of UCMP records, background research, field survey, the geologic formations that underlie the APEs, and the assessment of potential direct or indirect impacts by the project, the probability for buried paleontological resource is low. Further, due to the previous disturbance in creating the reservoir, earth moving, introduction of outside soils, and use of heavy machinery, the likelihood of finding paleontological resources in situ, and with context, is unlikely and would not meet significance criteria. No additional paleontological work nor monitoring of the remediation activities is recommended.

3.6 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 impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	✓	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	✓

Environmental Setting

Electricity and natural gas are major energy sources for residences and businesses in California. In Calaveras County, electricity consumption in 2022 totaled approximately 326 million kilowatt-hours, of which approximately 106 million kilowatt-hours were consumed by non-residential uses and the remainder by residential uses (CEC 2024a). In San Joaquin County, natural gas consumption in 2022 totaled approximately 0.89 million therms, of which approximately 0.49 million therms were consumed by non-residential uses and the remainder by residential uses (CEC 2024b).

Environmental Impacts and Mitigation Measures

a) Project Energy Consumption.

Project construction would involve fuel consumption and use of other non-renewable resources. Construction equipment used for trenching and other activities typically runs on diesel fuel or gasoline. The same fuels typically are used for vehicles that transport equipment and workers to and from a construction site. Construction-related fuel

consumption would be finite, short-term, and consistent with construction activities of a similar character. All construction equipment would be regulated per the ARB's In-Use Off-Road Diesel Vehicle Regulation. ARB standards for construction equipment includes measures to reduce emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements and imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. Therefore, energy use associated with project construction would not be considered wasteful, inefficient, or unnecessary.

The project would be required to comply with all applicable standards and regulations regarding energy conservation and fuel efficiency, which would ensure that future activities would be energy efficient to the maximum extent practicable. The project would not result in a wasteful, inefficient, or unnecessary use of energy. Project impacts related to energy consumption are less than significant.

b) Consistency with Energy Plans.

Neither Calaveras County nor the CCWD currently have an adopted plan for renewable energy or energy efficiency. If a plan for renewable energy or energy efficiency is adopted prior to the Project receiving its entitlements, then the project would comply with the applicable plan requirements. The project would have no impact on this issue.

3.7 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?	☐	☐	✓	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	✓
iv) Landslides?	☐	☐	☐	✓

b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	✓	☐
c) Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	✓	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?	☐	☐	✓	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	✓	☐	☐

Environmental Setting

Black Water, the project engineers retained Crawford Engineering to provide geotechnical data, conclusions, and recommendations based on the current understanding of the proposed project elements. The purpose of Crawford report was to identify subsurface geotechnical and material conditions, provide results of slope stability and seepage analyses and to characterize potential borrow material. The Crawford report will be submitted to the California Division of Safety of Dams (DSOD) as part of the 30% design package; DSOD will provide comments to be addressed to move forward to 60% design. The geotechnical report is shown in Appendix B.

The project site is located within the foothills of the Sierra Nevada Geomorphic Province 1 of California. The Sierra Nevada has a general northwest topographic trend and is on the order of 690 km long and 64-129 km wide. The mountain ranges of the Sierra Nevada were created roughly 120 to 130 million years ago when sediments as thick as 9,200 m, along with volcanic rocks, were buckled and warped, resulting in a series of low mountain ranges. The roots of these mountain ranges were then intruded by granitic rock.

The Sierra Nevada ranges were subsequently tilted upward as a result of faulting along the east edge of the ranges. In the higher elevations of the Sierra Nevada, much of the sedimentary material has been eroded to extensively expose the granitic rock. Older rocks that remain have been metamorphosed and are exposed in the foothills of the Sierra

Nevada. From our review of published regional geologic maps, the site is underlain by Mesozoic granitic rocks (Mzg) composed predominantly of granite to granodiorite.

Terra-Ex was subcontracted by Crawford to complete five geotechnical borings and two hand-auger borings under the supervision of a Crawford geologist to characterize potential borrow material at the site. Additionally, Crawford completed two hand-augers at offsite locations to characterize potential borrow material.

In general, the materials encountered in our 2025 borings completed for this study are considered consistent with published geologic mapping and are divided into three general units.

> Unit 1 – Existing Dam Materials of this unit generally consisted of medium dense to dense clayey sand with interbedded layers of stiff to hard lean clay and sandy lean clay.
>
> Unit 2 – Dam Foundation and Dowstream Blanket. This unit was encountered below Unit 1 and from the ground surface in Borings, A- 25-001 and A-25-007. Materials of this unit are similar to Unit 1 generally consisting of loose to dense clayey sand and hard sandy lean clay to approximately elevation 250.
>
> Unit 3 – Igneous Rock. The materials of this unit are generally very soft to soft decomposed igneous rock, primarily granite, to the terminal elevations between elevation 2,949, 2,939 and 2,920. Below elevation 2,920, moderately weathered, intensely fractured, very hard igneous rock was encountered to the terminal elevation of 2,915. A layer of slightly weathered to fresh, very hard, moderately fractured igneous rock was encountered from elevation 2,946 to the terminal elevation of 2,936 in one boring.

At the time of our field exploration, free groundwater was encountered and measured in four of the five drilled borings. Groundwater was observed between can fluctuate due to changes in precipitation, seasonal fluctuations, water elevation in the reservoir, and other site factors. Actual depth to groundwater should be determined immediately prior to work.

Faults and Seismic Activity

The site is not mapped within an Alquist-Priolo Earthquake Fault Zone 4. Based on the California Geologic Survey 5 (CGS) fault data, the nearest active fault (i.e., activity within about the last 11,000 to 15,000 years) is the West Tahoe-Dollar Point fault zone, mapped approximately 38.4miles northeast of the proposed project site. See fault Figure 3-7.

Liquification Potential

Soil liquefaction can occur when saturated, relatively loose sand and specific soft, fine-grained saturated soils (typically within the upper 50 feet) are subject to ground shaking strong enough to create soil particle separation that results from increased pore pressure.

This separation and subsequent pore pressure dissipation can lead to decreased soil shear strength and settlement. Liquefaction susceptibility of a soil deposit is a function of the soil grain size, relative density, percent fines, plasticity of fines, degree of saturation, age of deposit, and earthquake ground motion. Based on the groundwater depth and the predominantly clayey layers, dense granular layers, and rock encountered in the borings completed for this study along with the site being in a low seismic zone, the potential for liquefaction at the site is low.

Reservoir Area Soils

According to USDA soil surveys, there is one soil type on the project site, with variation as to the land slopes. The Musick-Wukusick Complex is a well-drained soil derived from granite rock. Musick-Wukusick Complex soils consist of sandy loam, and sandy clay loam soils.

Borrow Site Soils

To help evaluate the acceptability of the on-site and off-site material as a potential borrow source, Crawford performed four hand augers at the potential borrow locations. The soils encountered at the borrow sites generally consisted of clayey sand that is similar to the existing dam. The laboratory testing performed on representative samples of the material encountered indicate that borrow site material meets the minimum requirements for Levee Materials, as outlined by the Sacramento District of the United States Army Corp of Engineers 8.

Environmental Impacts and Mitigation Measures

a-i) Fault Rupture Hazards.

Surface fault rupture is associated with being located on or within close proximity of an active fault. Areas with a potential fault rupture are designated by Alquist-Priolo Earthquake Fault Zones as determined by the California Geological Survey. Calaveras County, including the project site, has no designated Alquist-Priolo Earthquake Fault Zones (California Geological Survey 2024). Therefore, the project would have no impact related to fault rupture hazards.

a-ii) Seismic Ground Shaking.

As noted, the nearest potentially active faults to the project site are the Bear Mountain and Melones Fault Zones in the western portion of Calaveras County. Ground shaking generated by activity of these faults could potentially be felt at the project site. The County General Plan Draft EIR stated that, based on an assessment conducted by the California Geological Survey, levels of ground shaking in Calaveras County would equate to intensity values ranging from I to III. At these intensities, few people recognize any shaking as earthquakes when felt (Calaveras County 2018).

Crawford calculated potential ground motion at the site based on published mapping, and exploration, igneous rock (granite) is shallow, and Crawford recommended a Site Class C

for the site. Per the United States Geological Survey (USGS) 2% in 50 years deaggregation hazard tool, the Peak Ground Acceleration (PGA) for the project site is 0.22g. However, Crawford notes, DSOD may require a minimum design PGA of 0.25g.

Proposed water system improvements would incorporate engineering design features that would be in accordance with California DSOD standards and engineering practices. Given this and the anticipated intensities of any earthquakes in Calaveras County, project impacts related to ground shaking would be less than significant.

a-iii) Other Seismic Hazards.

The California Geological Survey administers the Seismic Hazards Mapping Program, which designates Seismic Hazard Zones that encompasses areas prone to seismic-related ground failure hazards such as liquefaction and earthquake-induced landslides. No portion of Calaveras County is within a Seismic Hazard Zone (Calaveras County 2018). Consequently, Calaveras County and the project site are not considered to be at risk from seismic-related ground failure hazards. The project would have no impact related to other seismic hazards. Crawford studies found that the project would be subject to low liquefaction hazards.

a-iv) Landslides.

The project site is in the foothill region of Calaveras County. Landslides can pose a hazard to structures located on steep slopes (20 percent grade or higher), as well as on slopes recently affected by wildfires even in the absence of seismic events (Calaveras County 2018). However, the proposed reservoir/enlargement would be constructed on the existing reservoir. Neither project feature is expected to induce landslides. The project would have no impact related to landslides.

b) Soil Erosion.

Project construction activities would disturb soils within the construction area, leaving them exposed to potential erosion by water. Construction contract provisions would require implementation of Best Management Practices (BMPs) consistent with the Calaveras County Grading, Drainage, and Erosion Control Design Manual to protect water quality and minimize the potential for siltation and downstream sedimentation. Potential BMPs may include, but are not limited to, vehicle and equipment management, material and waste management, and general stormwater management (Calaveras County 2012).

Also, since the project would disturb one acre of land or more, it would be required to obtain a Construction General Permit from the SWRCB. The Construction General Permit requirements include preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) to address potential water quality issues. The SWPPP would include applicable BMPs to avoid or minimize adverse water quality impacts. BMPs fall within the categories of Temporary Soil Stabilization, Temporary Sediment Control, Wind Erosion Control, Tracking Control, Non-Storm Water Management, and Waste Management and Materials Pollution Control.

In summary, soil erosion on the project site could occur, but compliance with contract provisions and Construction General Permit requirements, along with drainage improvements associated with the project, would minimize potential erosion. Project impacts related to soil erosion would be less than significant.

c) Unstable Soils.

As noted in a) above, there are no Alquist-Priolo Earthquake Fault Zones in Calaveras County, and the risk of surface fault rupture within the County is considered low. The project does not include activities that would result in soil units onsite becoming unstable, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. Project impacts related to soil stability would be less than significant.

d) Expansive Soils.

The project is being designed in accordance with Calaveras County Code Chapter 15.04 - Uniform Codes. This chapter considers and addresses expansive soils. Given soil characteristics and compliance with the requirements of County Code Chapter 15.04, project impacts related to expansive soils are considered less than significant.

e) Adequacy of Soils for Wastewater Disposal.

The project would not use, and does not propose to install, any septic systems or alternative waste disposal systems. The project would have no impact related to adequacy of soils for wastewater disposal.

f) Paleontological Resources and Unique Geologic Features.

Paleontological resources are the remains of life preserved in a geologic context, such as fossils. The cultural resource report for the project stated that a record search of the Museum of Paleontology at the University of California in Berkeley found 31 paleontological sites on record within Calaveras County. The closest finds were located in the Mokelumne River watershed. Recovered species include a two-tusked mastodon, a four-tusked gomphothere, rhinoceros, camel, horse, bird, fish, tortoise, and tapir, among others still to be identified (Natural Investigations Company 2024).

The cultural resource report concluded that the Mokelumne Hill area is highly sensitive for paleontological resources. Mitigation described below would require work to be stopped when paleontological resources are uncovered until these resources can be evaluated by a qualified paleontologist and recommendations made for their proper disposition. Implementation of this mitigation measure would reduce paleontological resource impacts to a level that would be less than significant.

<u>Mitigation Measures</u>:

GEO-1: If buried paleontological resources are inadvertently discovered during ground-disturbing activities, work shall stop within 30 feet of the find until a qualified paleontologist can assess the significance of the find. If necessary, the paleontologist will develop appropriate

treatment measures in consultation with the Calaveras Public Utility District and other agencies as appropriate. Treatment measures may include, but are not limited to, preservation in place or excavation under supervision of a qualified paleontologist.

3.8 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?	☐	☐	☐	✓

Environmental Setting

Greenhouse gases (GHGs) are gases that absorb and emit radiation within the thermal infrared range, trapping heat in the earth's atmosphere. GHGs are both naturally occurring and are emitted by human activity. GHGs include carbon dioxide, the most abundant GHG, as well as methane, nitrous oxide, and other gases. GHG emissions in California in 2021, the most recent year for which data are available, were estimated at approximately 381.3 million metric tons carbon dioxide equivalent (CO_2e) – a decrease of approximately 21.5% from the peak level in 2004. Transportation was the largest contributor to GHG emissions in California, with 39% of total emissions (ARB 2023).

GHG emissions and their impact on climate are a subject of concern for the State of California. The State of California has implemented GHG emission reduction strategies through Scoping Plans prepared in response to state legislation. In 2022, ARB adopted an update to the current Scoping Plan. The 2022 Scoping Plan assesses progress towards achieving the SB 32 2030 reduction target and lays out a path to achieve carbon neutrality no later than 2045. Proposed strategies to achieve these reductions include rapid movement to zero-emission transportation, phasing out fossil fuel use for heating homes and buildings, restricting use of chemicals and refrigerants that are thousands of times more powerful at trapping heat than carbon dioxide, expanded development of renewable energy sources, increased use of natural and working lands for incorporating and storing carbon, and greater employment of carbon removal technology (ARB 2022).

Cities and counties throughout California have prepared Climate Action Plans that outline how the local government will reduce GHG emissions, which are typically related to the 2020 emission reduction target set in the State's Climate Change Scoping Plan. Calaveras

County is currently in the process of preparing a GHG Reduction Plan that would address emission reductions for target years 2030 per SB 32 and 2045.

Environmental Impacts and Mitigation Measures

a) Project GHG Emissions.

Based on results from the RCEM run (see Section 3.3, Air Quality), potential construction GHG emissions would amount to an estimated 1,101 metric tons CO_2e for the construction period. Construction emissions would be limited to a single work season and would cease once work is completed.

The Calaveras County APCD has not adopted thresholds of significance for the analysis of GHG emissions related to implementation of a proposed project. However, the nearby Sacramento Metropolitan Air Quality Management District has established a quantitative threshold of 1,100 metric tons CO_2e to determine the significance of project GHG emissions for CEQA purposes (SMAQMD 2021). This threshold applies to both construction and operational emissions. CEQA Guidelines Section 15064.7 allows for the use of significance thresholds established by other agencies. The GHG construction emissions of the proposed project are well below this threshold of 1,100 metric tons CO_2e.

Upon completion of construction work, the project would not generate any direct GHG emissions, and would generate only minimal GHG emissions indirectly, mainly from maintenance vehicles and equipment. The CalEEMod estimated that operational GHG emissions would be 0.21 metric tons CO_2e annually, which is substantially below the Sacramento Metropolitan Air Quality Management District quantitative threshold. Based on this, project GHG emissions would be less than significant.

b) Consistency with GHG Reduction Plans.

As noted in a) above, upon completion of construction work, project operations would generate at most minimal GHG emissions. As a result, the project would not conflict with the GHG reduction objectives of the State's Climate Change Scoping Plan or with the County GHG Reduction Plan should it be adopted. The project would have no impact related to consistency with GHG reduction plans.

3.9 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?	☐	☐	☐	✓
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	✓
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public-use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	✓
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	✓
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	✓	☐

Environmental Setting

This section focuses on hazards associated with hazardous materials, proximity to airports, and wildfires. Geologic and soil hazards are addressed in Section 3.7, Geology and Soils, and potential flooding hazards are addressed in Section 3.10, Hydrology and Water Quality.

Data on hazardous material sites are kept in the GeoTracker database, maintained by the California SWRCB, and in the EnviroStor database, maintained by the California Department of Toxic Substances Control. Both GeoTracker and EnviroStor provide the names and addresses of hazardous material sites, along with their cleanup status.

GeoTracker records show four closed Leaking Underground Storage Tank (LUST) sites in West Point, with no further action needed; one such case is open, and the site is in remediation. All of these sites are more than a mile west of the project site; neither Geotracker nor EnviroStor indicated any record of active hazardous material sites on or within a mile of the project site (SWRCB 2025, DTSC 2025).

Environmental Impacts and Mitigation Measures

a) Hazardous Materials Transportation, Use, and Disposal.

Small amounts of hazardous materials, such as fuel and solvents, would be used during project construction and operation activities. Operation of the project would continue the occasional use, transport, and disposal of potentially hazardous materials. The project would be required to comply with federal, state, and local regulations regarding the storage, handling, transportation, disposal, and cleanup of hazardous materials. Project impacts on hazardous materials transportation, use, or disposal would be less than significant.

b) Release of Hazardous Materials by Upset or Accident.

Project construction activities may involve the use of hazardous materials such as fuels and solvents, and thus create a potential for hazardous material spills. Construction and maintenance vehicles would transport and use fuels in ordinary quantities. Fuel spills, if any occur, would be minimal and would not have significant adverse effects.

Potential hazardous materials spills during construction would be addressed in the required SWPPP, described in Section 3.7, Geology and Soils. In accordance with SWPPP requirements, contractors have absorbent materials at construction sites to clean up minor spills. Other substances used in the construction process would be stored in approved containers and used in relatively small quantities, in accordance with the manufacturers' recommendations and/or applicable regulations.

As noted in a) above, the project would involve limited use of hazardous materials after project completion, and such materials would be used and stored in compliance with applicable regulations. Project impacts related to releases of hazardous materials would be less than significant.

c) Hazardous Material Emissions near Schools.

There are no schools within one-quarter mile of the project site. The nearest school is West Point Elementary School in the community of West Point, approximately 1.4 miles southwest of the reservoir. As noted in a) above, the project would involve limited use of hazardous materials. The project would have no known impact related to hazardous material emissions near schools.

d) Hazardous Materials Sites.

As previously noted, a search of the GeoTracker and EnviroStor databases did not identify any active hazardous material sites on or within one mile of the project site. One leaking underground storage tank site in the West Point community were recorded in GeoTracker.

However, both sites were recorded as "Completed – Case Closed" (SWRCB 2024). The project would have no impact related to hazardous material sites.

e) Airport Operations.

There are no airports in the vicinity of the project site. The nearest public airport is the Amador County Airport in the community of Martell in Amador County, approximately 14 miles to the west. Given this distance, the project would not expose workers to safety hazards or excessive noise from operations at this airport. The project would have no impact related to public airport operations.

f) Emergency Response and Evacuation.

Construction of the project would involve work on CCWD property only. Project construction would not affect public roads, except for a temporary increase in construction traffic to and from the project site. Construction activities would not obstruct emergency vehicle access to the project site or to nearby land uses. Project construction activities would be coordinated with local law enforcement and emergency services providers as applicable. Project operations would not obstruct any roads, thereby not interfering with emergency vehicle access or with potential evacuations. The project would have no impact on emergency vehicle access or evacuations.

g) Wildland Fire Hazards.

The project is in a forested area where wildland fires may occur. However, the project would not place people in this area. The project features that are proposed would be minimally exposed to wildland fires, and any damage caused to these features would not lead to impairment of potable water service to CCWD customers. The project would not involve any substantial changes to fuel conditions or introduce new ignition sources. Project impacts related to wildland fire hazards are considered less than significant. Refer to Section 3.20, Wildfire, for more detailed information on wildfire hazards.

3.10 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 offsite?	☐	☐	☐	✓
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☐	☐	✓
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	✓
iv) Impede or redirect flood flows?	☐	☐	☐	✓
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	✓
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	✓	☐

Environmental Setting

The project site is the existing West Point Regulating Reservoir, a created lake from which water is drawn and treated at the West Point WTP and subsequently distributed to CCWD customers. Water is supplied to the reservoir from existing surface water sources. The project involves the enlargement of the existing dam to expand the capacity of the reservoir.

Groundwater is used by local water purveyors and individuals to meet domestic and agricultural demands in western Calaveras County, which overlies the Eastern San Joaquin groundwater sub-basin, which is a part of the larger San Joaquin Valley groundwater basin (Calaveras County 2018). There are no other identified groundwater basins in Calaveras County, including in the immediate project vicinity (DWR 2016). Groundwater documents

provide a source of potable water for low-density residential uses in the general project vicinity.

Based on the Flood Insurance Rate Map prepared for the project area by the Federal Emergency Management Agency (FEMA), the project site does not lie within a designated flood zone (FEMA 2010). A review of the DWR website indicates that no portion of the project site is within the 200-year floodplain, the designation of which is required by the State's SB 5 and companion bills (DWR 2024).

Environmental Impacts and Mitigation Measures

a) Violation of Water Quality Standards.

The potential water quality impacts of the project are related to potential erosion and sediment discharge resulting from project construction. As discussed in Section 3.7, Geology and Soils, the project would be required to obtain a Construction General Permit from the SWRCB. The Construction General Permit would require preparation and implementation of a SWPPP that would limit potential soil erosion. Implementation of the conditions of the Construction General Permit would minimize potential surface water quality impacts.

Project operations would not affect surface water quality. Reservoir supply would be obtained from existing sources and distributed to West Point users through the West Point WTP and distribution system. Overall, project impacts related to potential violation of water quality standards would be less than significant.

b) Groundwater Supplies and Recharge.

The project would not require any new water consumption for its operations, including groundwater. The project would not add any substantial new impervious surfaces, so the existing groundwater recharge area in the project vicinity would remain essentially unchanged. Project impacts related to groundwater supplies and recharge would be less than significant.

c-i, ii, iii) Drainage Patterns and Runoff.

The project involves raising of the existing reservoir embarkment, further confining drainage leaving the existing watershed in which the existing reservoir is located; because of this, the project would not substantially affect but rather reinforce existing surface drainage patterns within the construction area. The project would have no substantial impact on drainage patterns or runoff.

c-iv) Flood Flows.

As noted, the project site is not within a designated flood zone. Therefore, the project, including its aboveground structures, would not alter any flood flows. The project would have no impact related to flood flows.

d) Release of Pollutants in Flood Zone.

As noted, the project site is not within a designated flood zone. As discussed in Section 3.9, Hazards and Hazardous Materials, project operations would not involve substantial use of any hazardous materials. The project would have no impact related to the release of pollutants during an inundation event.

e) Conflict with Water Quality or Sustainable Groundwater Plans.

As the project is an increase in raw water storage capacity. Assuming adequate control of erosion and sedimentation, it is not expected to interfere with the attainment of the objectives of applicable water quality plans.

In 2014, the State enacted the Sustainable Groundwater Management Act. This act requires the formation of local groundwater sustainability agencies that must assess conditions in their local water basins and adopt locally based Groundwater Sustainability Plans for sustainable use of groundwater and avoidance of overdraft. As noted, there are no identified SGMA groundwater basins in the project vicinity; therefore, no Groundwater Sustainability Plans apply to the project site. Overall, project impacts on water quality or sustainable groundwater plans would be less than significant and may be beneficial.

3.11 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?	☐	☐	✓	☐

Environmental Setting

The project is enlargement of the existing West Point Regulating Reservoir, a CCWD facility located outside and just east of the West Point community. The reservoir is in a mostly rural, forested area of Calaveras County, with several rural residences in the immediate vicinity and other dispersed residences and small clusters of residential use distributed throughout the area.

The current Calaveras County General Plan was adopted in 2019. The County General Plan is intended to guide orderly growth and development, promote equity, strengthen the economy, protect the environment, and promote public health and safety. This would be accomplished by setting forth goals and policies that advance the General Plan's intentions. The County General Plan includes a land use map that designates land uses in the unincorporated areas of Calaveras County. The project site is in an area designated Working Lands and Resource Production.

Environmental Impacts and Mitigation Measures

a) Division of Established Communities.

The project proposes improvements to a public water system in a rural area. The project site is not part of any recognized residential community in the area; the project would expand the capacity of the existing reservoir but would not encroach on any off-site lands. The project would enhance views for nearby residences, and it would not physically divide an established community. The project would have no impact in this area of concern.

b) Conflict with Applicable Plans, Policies and Regulations Avoiding or Mitigating Environmental Effects.

The project is in an area designated by the County General Plan as Working Lands and Resource Production, which identifies public or quasi-public facilities such as water treatment facilities. The project would be consistent with surrounding land uses and existing water storage and treatment activities at the CCWD WTP. The project therefore would be consistent with County General Plan and related policies and regulations.

3.12 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?	☐	☐	☐	✓

Environmental Setting

Calaveras County has a long history of mining with a rich array of mineral resources due to its location within the Sierra Nevada foothills and the Mother Lode Belt. Mining

activities occur on both private and public lands, the latter including lands managed by the U.S. Bureau of Land Management and the U.S. Forest Service (Calaveras County 2019). There are no mineral resource extraction activities on or near the project site. A search of a database for oil and natural gas wells and fields showed no record of them on or near the project site (DOGGR 2024).

Environmental Impacts and Mitigation Measures

a, b) Loss of Mineral Resource Availability.

Per the State Mining and Geology Board, as of 2013, there are no lands designated in Calaveras County as mineral areas of regional or statewide significance (Calaveras County 2019). Because of this, the project would not result in the loss of availability of a known mineral resource that would be of value either locally or regionally. The project would have no impact on availability of mineral resources.

3.13 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 the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	✓	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	✓	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✓

Environmental Setting

The existing noise environment in the immediate project area, and he noise impacts of the project were assessed by Saxelby Acoustics. A copy of the Saxelby report is shown in Appendix E.

Assessment of noise impacts focuses on changes to the “ambient" noise level, which is the general noise level in a project area. The existing ambient noise environment in the project

vicinity consists mainly of vehicle traffic on local roads and random noise associated with existing rural residences in the immediate vicinity of the project. Chapter 9.02 of the Calaveras County Code contains provisions for the control of noise, including maximum allowable noise levels affecting land uses.

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people

react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Effects of Noise on People

An important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regards to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate.

Existing Noise Receptors

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise-sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include several existing rural single-family residential uses surrounding the project site.

Existing General Ambient Noise Levels

The existing noise environment in the project area is primarily defined by traffic on nearby roads, nature sounds, and typical residential activities. To quantify the existing ambient noise environment in the project vicinity, Saxelby Acoustics conducted continuous (24-

hr.) noise level measurements at three locations on the project site. Noise measurement locations are shown on Figure 3-9.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

TABLE 3-2
SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Location	Date	L_{dn}	Daytime L_{eq}	Daytime L_{50}	Daytime L_{max}	Nighttime L_{eq}	Nighttime L_{50}	Nighttime L_{max}
LT-1: 425 ft. to CL of Winton Rd.	3/25/25	60	54	45	61	54	47	64
LT-2: 390 ft. to CL of Winton Rd.	3/25/25	61	55	51	64	55	53	62
LT-3: 570 ft. to CL of Hidden Valley Rd.	3/25/25	47	42	38	57	40	39	53

- *All values shown in dBA*
- *Daytime hours: 7:00 a.m. to 10:00 p.m.*
- *Nighttime Hours: 10:00 p.m. to 7:00 a.m.*
- *Source: Saxelby Acoustics, 2025.*

Environmental Impacts and Mitigation Measures

Calaveras County Code Standards

Section 9.02.030 Sound level limitations

No person shall cause, allow, or permit the operation of any sound source on property or any public space or public right-of-way in such a manner as to create a sound level that exceeds the levels listed in Table 3-2. If all provisions of Subsection 9.02.060D. are complied with, this section shall not apply to construction equipment used in connection with construction operations.

TABLE 3-3
EXTERIOR NOISE LEVEL STANDARDS

Land Use Type*	Sound Level (A-Weighted) Decibels	
	7:00 a.m.—10:00 p.m.**	10:00 p.m.—7:00 a.m.
Residential	60	50
Commercial	70	60
Industrial (Industry)	75	65

**As defined in Title 17 of the Calaveras County Code.*
***Subsection 9.02.050E provides an extension to midnight on Friday and Saturday for the events listed in the provision.*

Each of the sound level standards specified in 3-3 shall be reduced by five dBA for pure tone noises. However, in no case shall the exterior noise level standard be lower than the ambient sound level plus five dBA. (Ord. No. 3013, § III, 9-25-2012)

Section 9.02.060 Exemptions

Among other things, construction activities are exempt from the Calaveras Code requirements: Sound from construction activity, provided that all construction in or adjacent to residential areas shall be limited to the daytime hours between 7:00 a.m. and 6:00p.m., unless otherwise subject to conditions in a valid discretionary land use permit that addresses construction noise associated with the project.

Criteria for Acceptable Vibration

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events.

Caltrans standards indicate that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

a) Exposure to Noise Exceeding Local Standards.

The Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) was used to predict noise levels for standard construction equipment used for roadway improvement projects. The assessment of potential significant noise effects due to construction is based on the standards and procedures described in the Federal Transit Authority (FTA) guidance manual and FHWA's RCNM.

The RCNM noise prediction model enables the prediction of construction noise levels for a variety of construction equipment based on a compilation of empirical data and the application of acoustical propagation formulas. RCNM allows for the modeling of multiple pieces of construction equipment working either independently or simultaneously, the character of noise emission, and the usage factors for each piece of equipment.

Construction activities would increase noise levels temporarily in the vicinity of the Project. Actual noise levels would depend on the type of construction equipment involved, distance to the source of the noise, time of day, and similar factors. Construction noise is temporary and would cease when project work is completed.

Section 9.02.060 of the Calaveras County Code exempts several activities from the requirements of Chapter 9.02, including sound from construction activity, provided that all construction in or adjacent to residential areas shall be limited to the daytime hours between 7:00 a.m. and 6:00 p.m., unless otherwise subject to conditions in a valid discretionary land use permit that addresses construction noise associated with the project.

The project, once completed, would not generate any substantial noise. Project impacts regarding exposure to noise exceeding local standards would be less than significant.

b) Groundborne Vibration.

Project construction includes activities, such as the operation of large pieces of equipment like heavy trucks, that may result in the periodic, temporary generation of groundborne vibration. Saxelby Acoustics indicates that potential vibration levels would be below the 0.2 in/sec threshold at a distance of 26 feet. No sensitive receptors are located within this distance of construction activities. Vibrations associated with construction would cease once work is completed. Project operations would not introduce new sources of groundborne vibration. Project impacts related to groundborne vibrations would be less than significant.

c) Exposure to Airport/Airstrip Noise.

As noted in Section 3.9, Hazards and Hazardous Materials, there are no public airports near the project site. The project would have no impact related to airport or airstrip noise.

3.14 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?	☐	☐	☐	✓

Environmental Setting

As of January 1, 2024, the population of unincorporated Calaveras County was estimated at 41,255. An estimated 25,921 housing units were in unincorporated Calaveras County as of January 1, 2024, of which approximately 88.3% were single family detached residences (California Department of Finance 2024).

Environmental Impacts and Mitigation Measures

a) Unplanned Population Growth.

The project involves improvements to a water facility. It would not involve the construction of residences or employment centers that would directly or indirectly induce population growth.

By recycling backwash water, the project would make more potable water available for CCWD residents and businesses. Additional water could encourage more development, which could increase the population in the CCWD area. However, the CCWD area is a mostly rural area that is expected to experience limited growth. Further population growth would likely require an expanded water distribution system, which is not currently planned by CCWD. Future improvements to the distribution system, if necessary, would be subject to environmental review, as would any new development proposed in the CCWD area.

The project is not expected to encourage development and subsequent population growth not otherwise planned for in the Calaveras County General Plan. Therefore, the project would have no impact related to unplanned population growth.

b) Displacement of Housing and People.

The project site contains no housing; therefore, the project would not displace or otherwise affect existing housing in the vicinity. Because of this, the project would also not displace people. The project would have no impact on this issue.

3.15 PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				

i) Fire protection?	☐	☐	☐	✓
ii) Police protection?	☐	☐	☐	✓
iii) Schools?	☐	☐	☐	✓
iv) Parks?	☐	☐	☐	✓
v) Other public facilities?	☐	☐	☐	✓

Environmental Setting

Fire protection services in the project area are provided by the California Department of Forestry and Fire Protection (Cal Fire) and the West Point Fire Protection District (WPFPD); the WPFPD station is located at 195 Spink Rd, West Point, CA 95255. The Calaveras County Sheriff's Department provides police protection services in the area. The project site is within the boundaries of the Calaveras Unified School District. There are no parks or other public services in the project vicinity.

Caltrans IS/MND services notes

Affected Environment

Fire Protection and Police Services

Fire protection and police services in the project area are provided by the following agencies:

> California Highway Patrol, 749 Mountain Ranch Road, San Andreas, California 95249.
>
> Calaveras County Sheriff's Department, 891 Mountain Ranch Road, San Andreas, California 95249.
>
> California Department of Forestry and Fire Protection Emergency Command Center, 785 Mountain Ranch Road, San Andreas, California 95249.
>
> West Point Fire Protection District, P.O. Box 417, West Point, California 95255.

Hospital Emergency Care Services

> Air Ambulance Providers, PHI Air Medical, 801-D Airport, Modesto, California 95354.
>
> California Shock Trauma Air Rescue, 12151 Airport Road, Jackson, California 95642.

Mark Twain Medical Center, 768 Mountain Ranch Road, San Andreas, California 95249.

Sonora Regional Medical Center, 1000 Greenley Road, Sonora, California 95370.

Environmental Impacts and Mitigation Measures

a) Fire Protection, Police Protection, Schools, Parks, Other Public Services.

The project involves improvements to public water system facilities. Also, as discussed in Section 3.14, Population and Housing, the project is not expected to generate population growth. Because of this, demand for public services such as fire protection, police protection, schools, parks, and other public services would not be expected to increase as a result of the project. No new or expanded public service facilities would be required. The project would have no substantial impact on public services.

3.16 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?	☐	☐	☐	✓

Environmental Setting

Park and recreation services within unincorporated Calaveras County are provided through County Parks and Recreation. There are no parks in the project vicinity. Jeff Davis Reservoir does not have recreational facilities.

Environmental Impacts and Mitigation Measures

a, b) Recreational Facilities.

The project involves improvements to water infrastructure. As discussed in Section 3.14, Population and Housing, the project is not expected to generate population growth. As such, demand for parks and recreational services would not increase, and no new or expanded parks or recreational facilities would be required. The project would have no impact on recreational facilities.

3.17 TRANSPORTATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable 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 to a geometric design feature (e g., sharp curves or dangerous intersections) or incompatible uses (e g, farm equipment)?	☐	☐	☐	✓
d) Result in inadequate emergency access?	☐	☐	☐	✓

Environmental Setting

The project site is accessed by West Forty Road, a rural road that mainly provides access to Jeff Davis Reservoir and the WTP. West Forty Road extends north from Ridge Road, an east-west County road that extends from State Route 26 to the community of Rail Road Flat. Reservoir Road crosses the dam and provides access to the northern and eastern shores of the reservoir. No public transit system serves the project site, and there are no bicycle or pedestrian facilities in the area.

Environmental Impacts and Mitigation Measures

a) Conflict with Transportation Plans, Ordinances, and Policies.

The project involves improvements to a water facility. The project, once completed, would not contribute any new traffic nor increase traffic volumes on roads in the vicinity. As the

project is in a rural, forested area with few residents, there would be no transportation facilities such as bikeways, sidewalks, or public transit routes that would be affected. The project would have no impact on applicable transportation plans, ordinances, and policies.

b) Conflict with CEQA Guidelines Section 15064.3(b).

Recently, Section 15064.3 was added to the CEQA Guidelines. Section 15064.3 states that "vehicle miles traveled" (VMT) is the preferred metric for evaluating transportation impacts. VMT accounts for the total environmental impact of transportation associated with a project, including use of travel modes such as buses or bicycles. Section 15064.3(b) sets forth the criteria for analyzing transportation impacts using the preferred VMT metric. As noted in a) above, the project would not generate traffic. Because of this, the project would not increase VMT and therefore would not conflict with the objectives of CEQA Guidelines Section 15064.3(b). The project would have no impact on this issue.

c) Traffic Hazards.

The project would not alter any local roads such that it would introduce traffic hazards. The existing design features of roads in the area would not change. There would be temporary changes to the existing traffic mix on roads in the area during project construction, when construction equipment and vehicles would travel to and from the project site. However, once construction work ends, the existing vehicle traffic mix would return. As noted, the project would not introduce any new traffic. The project would have no impact on traffic hazards.

d) Emergency Access.

Existing emergency access to the project site would be retained during project construction, as discussed in Section 3.9, Hazards and Hazardous Materials. The project would not create any obstacles to emergency vehicle access once completed. The project would have no impact on emergency access.

3.18 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, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of	☐	✓	☐	☐

historical resources as defined in Public Resources Code Section 5020.1(k), or				
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	✓	☐	☐

Information in this section is based primarily upon a cultural resource report prepared by Natural Investigations Company. A copy of this report is available in Appendix C.

Environmental Setting

As noted, in Section 3.5, Cultural Resources, the project site lies within the traditional territory of the Northern Sierra Mi-wuk. Prior to Euro-American contact, Northern Sierra Mi-wuk occupied the foothills and mountains of the Mokelumne and Calaveras River drainages. Mi-wuk villages were divided into "tribelets", which controlled specific lands and the natural resources within that territory. The population size of Sierran Mi-wuk tribelets averaged between 100 and 300 individuals. The territory of each Mi-wuk tribelet typically included a main village and smaller satellite villages.

Seasonally mobile hunter-gatherers with semi-permanent villages, the foothills and mountains provided the Northern Sierra Mi-wuk with an abundance of natural resources. Acorns were of particular importance to the diet. Similar to other California Native American groups, the Mi-wuk employed a variety of tools, implements, and enclosures for hunting and collecting natural resources. The Mi-wuk participated in an extensive east-west trade network between the coast and the Great Basin. From coastal groups, marine shell and steatite moved eastward, while salt and obsidian traveled westward from the Sierras and Great Basin. Basketry, an important trade item, moved in both directions.

The discovery of gold in 1848 and the ensuing Gold Rush led to a flood of non-indigenous peoples into Mi-wuk territory. Sierran Mi-wuk remained in rancherias scattered throughout the foothills, but in addition to traditional hunting and gathering, they worked seasonally as paid laborers on farms and ranches. Their reliance on cash income increased as availability of natural resources decreased with the growth of non-Miwuk communities and towns in their traditional territory.

During the first half of the 1900s, the federal government acquired lands and established reservations, or rancherias, for the Plains Mi-wuk, Northern Sierra Mi-wuk and Central Sierra Mi-wuk. The U.S. Bureau of Indian Affairs terminated relations with most of these

rancherias between 1934 and 1972, but status has been restored to the majority of the rancherias, beginning in 1984. At present, there are seven federally recognized rancherias in Amador, Calaveras, El Dorado, Lake, and Tuolumne Counties that have primarily or exclusively Eastern Mi-wuk populations: Wilton, Shingle Springs, Jackson, Buena Vista, Sheep Ranch, Tuolumne, and Chicken Ranch.

In 2014, the California Legislature enacted AB 52, which focuses on consultation with Native American tribes on land use issues potentially affecting the tribes. The intent of this consultation is to avoid or mitigate potential impacts on "tribal cultural resources," which are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe." Under AB 52, when a tribe requests consultation with a CEQA lead agency on projects within its traditionally and culturally affiliated geographical area, the lead agency must provide the tribe with notice of a proposed project within 14 days of a project application being deemed complete or when the lead agency decides to undertake the project if it is the agency's own project. The tribe has up to 30 days to respond to the notice and request consultation; if consultation is requested, then the local agency has up to 30 days to initiate consultation. The CCWD has not received any requests in writing from California Native American tribes traditionally and culturally affiliated with the area to be notified of proposed projects.

Environmental Impacts and Mitigation Measures

a-i, ii) Tribal Cultural Resources.

As part of the preparation of the cultural resource report for the project, Natural Investigation Company requested the Native American Heritage Commission to conduct a search of its Sacred Lands File for records of potential tribal sacred land on the project site. The Commission reported a negative result, indicating no sacred lands have been recorded on the project site. The field survey conducted as part of the cultural resource report found no new prehistoric or ethnographic sites. The project site rests upon Nedsgulch series soils found on side slopes of high hills and mountains with slopes ranging from 3 to 60 percent. Buried soils representing former landscapes are not present in this soil series.

As discussed in Section 3.5, Cultural Resources, the potential for the discovery of buried archaeological materials within the project site is low. However, the report also stated that it is possible to inadvertently uncover cultural resources during ground-disturbing project activities. Mitigation Measure CULT-1 would require work to be stopped when cultural resources are uncovered until these resources can be evaluated by a qualified archaeologist and recommendations made for their proper disposition. Implementation of this mitigation measure would reduce tribal cultural resource impacts to a level that would be less than significant.

> Mitigation Measure: Implementation of Mitigation Measure CULT-1.

3.19 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 facilities or storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	✓	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	✓
c) Result in a determination by the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	✓
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	✓
e) Comply with federal, state and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	✓

Environmental Setting

As has been noted, the project proposes enlargement of the existing regulating reservoir at the West Point WTP, managed by CCWD. The CCWD provides potable water service to customers and businesses in the West Point service area. Wastewater services for employees at the WTP, West Point residences and business are provided by individual septic systems under permits from the Calaveras County Environmental Health Department. Existing electrical service is provided by PG&E overhead lines, which also serve CCWD facilities, including the WTP.

Other organized utilities serve the needs of other more intensively developed areas of the County, including:

Calaveras Public Utilities District (San Andreas and Mokelumne Hill)
Calaveras County Water District (part of Valley Springs)
Mokelumne Hill Sanitary District (wastewater service)
Pacific Gas and Electric Company (natural gas and electrical service countywide)
AT&T Corporation, Volcano Telephone Company, Comcast, Calaveras Telephone Company

Environmental Impacts and Mitigation Measures

a) Construction or Relocation of Infrastructure.

The project involves improvements to the existing reservoir facility. This IS/MND evaluates the potential environmental impacts of these improvements. The project may have some impacts on existing utility facilities on and near the project site; any potential conflicts will be identified as a part of detailed project engineering, and any such impacts would be reduced to a level that would be less than significant with anticipated engineering and the implementation of identified mitigation measures.

The project is not expected to impacts on existing infrastructure within the project site other than the existing dam, spillway and drainage. The project proposes improvements to theses facilities. All such work would occur within the existing CCWD ownership; no additional land would need to be acquired or would be affected by this work. As a result,impacts related to construction or relocation of infrastructure would be less than significant.

b) Water Supply.

The project involves improvements to a water facility. It would not require new water use such that additional supplies would need to be obtained.

c) Wastewater Treatment Capacity.

As noted, in Section 3.7, Geology and Soils, the project would not involve any new wastewater treatment demands. The project would have no impact on wastewater treatment capacity.

d, e) Solid Waste Services.

The project involves improvements to a water facility. Project operations would not generate any solid waste that would require collection or the need for landfill capacity. Solid waste generated by the Project would be limited to construction debris. Disposal of this debris would occur at permitted landfills in accordance with federal, state, and local regulations. The project would have no adverse impact on solid waste services.

3.20 WILDFIRE

If located in or near state responsibility areas or lands classified as Very High Fire Hazard Severity Zones, 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?	☐	☐	☐	✓

Environmental Setting

As noted in Section 3.9, Hazards and Hazardous Materials, the project is in a forested area that extends beyond the CCWD properties onto private lands to the east and eventually to merge with other forested land in the Stanislaus National Forest.

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program identifies fire threat based on a combination of two factors: 1) fire frequency, or the likelihood of a given area burning, and 2) potential fire behavior. These two factors are combined in determining the following Fire Hazard Severity Zones: Moderate, High, Very High. These zones are mapped for State Responsibility Areas, where the State of California is financially responsible for the prevention and suppression of wildfires. The project site and surrounding lands are within a State Responsibility Area and are placed in a Very High Fire Hazard Severity Zone (Cal Fire 2022).

Environmental Impacts and Mitigation Measures

a) Emergency Response and Emergency Evacuation Plans.

Project construction would involve truck transport of fill material from borrow sites to the CCWD dam site.; truck traffic and turning movements could involve obstructions and delays in the passage of emergency vehicles. As discussed in Section 3.9, Hazards and Hazardous Materials, the project would not substantially interfere with emergency vehicle access during construction.

With proper planning and interagency coordination, the project would not involve substantial interference during construction. Project operation would not involve any potential for obstruction of emergency vehicle access or evacuation issues upon project completion. The project would have no substantial impact related to emergency response plans or emergency evacuation plans as they pertain to wildfires.

b) Exposure of Project Occupants to Pollutants.

The project site does not support or include permanent occupants. No unique topographic or wind conditions are known to occur on site that exacerbate wildfire risks. The topographic and climate conditions of adjacent lands is similar. The project would have no impact related to exposure of project occupants to wildfire-related pollutants.

c) Installation and Maintenance of Infrastructure.

The project involves improvements to an existing water storage facility on the existing CCWD reservoir site; no new lands would need to be acquired. The project would not involve any activities that do not currently occur at the existing reservoir. Therefore, the project would not exacerbate fire risk or result in temporary or ongoing impacts to the environment. The project would have no impact on this issue.

d) Risks from Runoff, Post-Fire Slope Instability, or Drainage Changes.

As noted in b) above, the project would not construct any structures that would be occupied. Because of this, the project would not expose people or structures to downslope or downstream flooding or landslides, post-fire slope instability, or drainage changes. The project would have no impact in this area of concern.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a	☐	✓	☐	☐

fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				
b) Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	✓
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	✓	☐

a) Findings on Biological and Cultural Resources.

The project's potential biological resource and cultural resource impacts were described in Sections 3.4 and 3.5, respectively. Potentially significant environmental effects on biological and cultural resources were identified, but implementation of recommended mitigation measures would reduce these effects to a level that would be less than significant. The mitigation measures are described in Sections 3.4 and 3.5 and are listed in Table 1-1.

b) Findings on Cumulatively Considerable Impacts.

As described in this IS/MND, the potential environmental effects of the project would either be less than significant, or the project would have no impact at all, when compared to baseline conditions. Where the project involves potentially significant effects, these effects would be reduced to a less-than-significant level with proposed mitigation measures and compliance with required permits and applicable regulations.

The potential environmental effects identified in this IS/MND have been considered in conjunction with each other as to their potential to generate other potentially significant effects. The various potential environmental effects of the project would not combine to generate any potentially significant cumulative effects.

There are no other known, similar projects with which the project might combine to produce adverse cumulative impacts.

c) Findings on Adverse Effects on Human Beings.

Potential adverse effects on human beings were discussed in Section 3.3, Air Quality (TACs); Section 3.7, Geology and Soils (seismic hazards); Section 3.9, Hazards and Hazardous Materials; Section 3.10, Hydrology and Water Quality (flooding); Section 3.17, Transportation/Traffic (traffic hazards); and Section 3.20, Wildfire. No significant adverse effects were identified in these sections that could not be mitigated to a level that would be less than significant. Project impacts related to potential adverse effects on human beings would be less than significant.

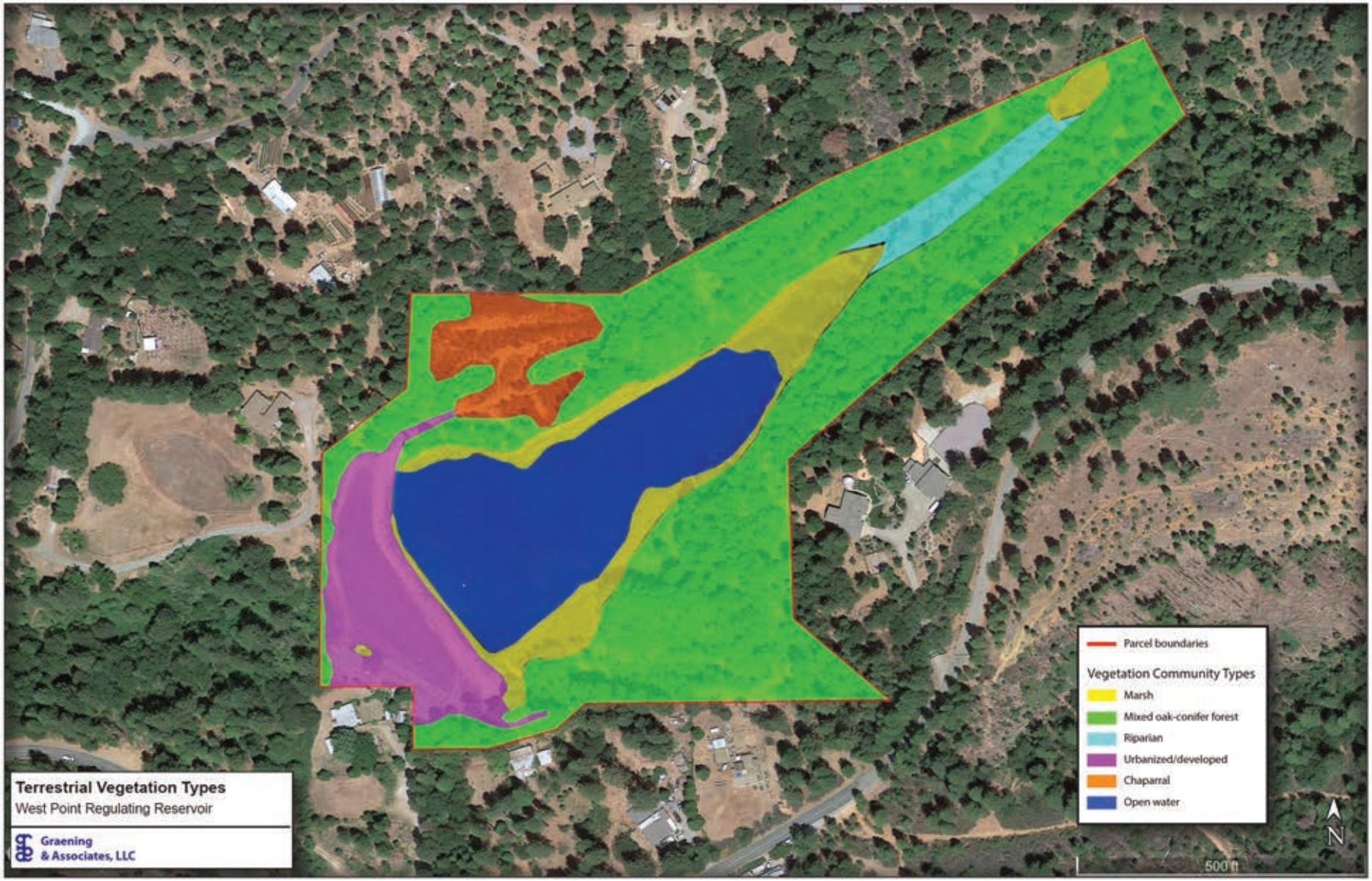


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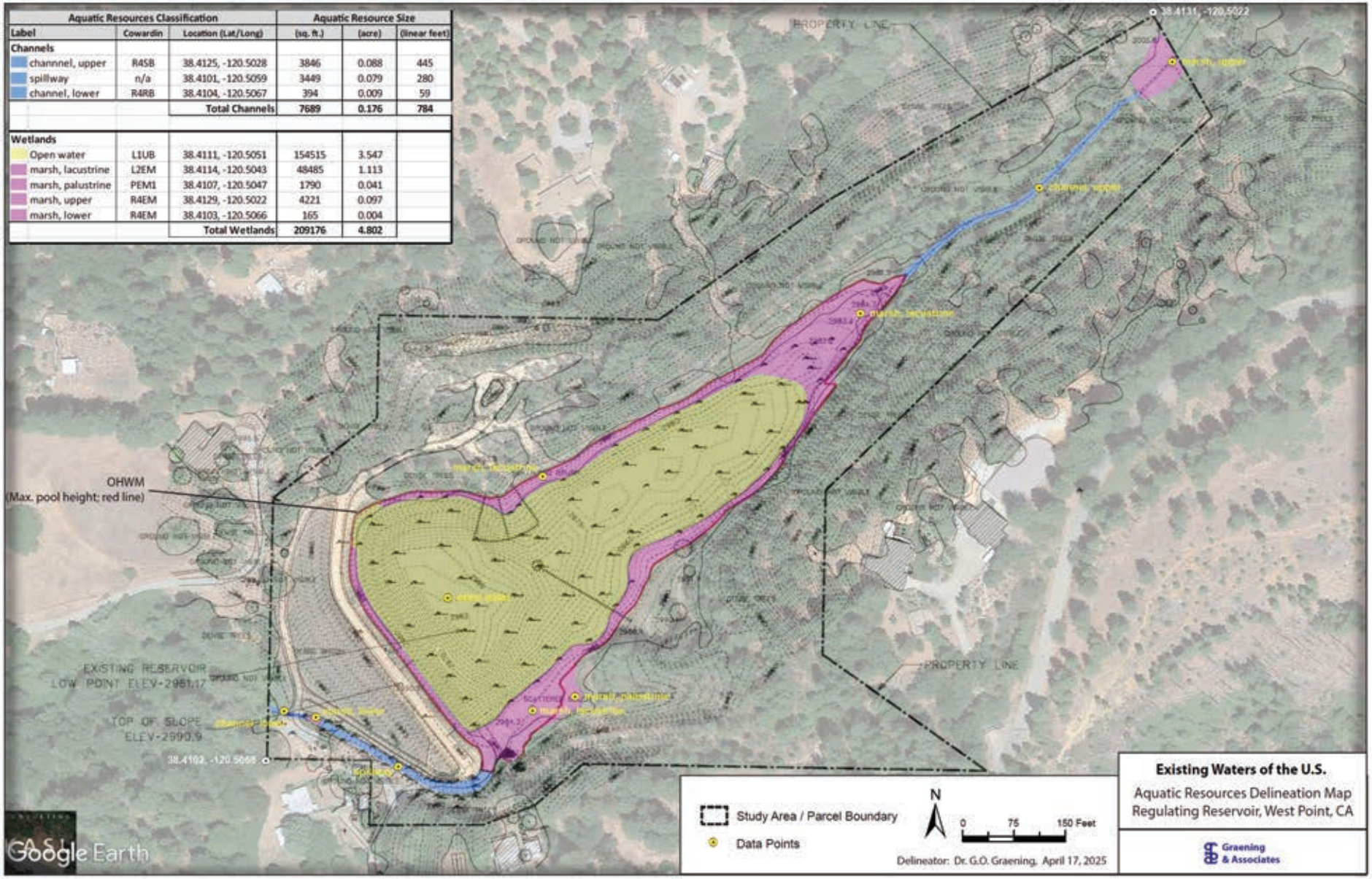
Figure 3-1
TERRESTRIAL VEGETATION TYPES



Aquatic Resources Classification			Aquatic Resource Size		
Label	Cowardin	Location (Lat/Long)	(sq. ft.)	(acre)	(linear feet)
Channels					
channnel, upper	R4SB	38.4125, -120.5028	3846	0.088	445
spillway	n/a	38.4101, -120.5059	3449	0.079	280
channel, lower	R4RB	38.4104, -120.5067	394	0.009	59
		Total Channels	**7689**	**0.176**	**784**
Wetlands					
Open water	L1UB	38.4111, -120.5051	154515	3.547	
marsh, lacustrine	L2EM	38.4114, -120.5043	48485	1.113	
marsh, palustrine	PEM1	38.4107, -120.5047	1790	0.041	
marsh, upper	R4EM	38.4129, -120.5022	4221	0.097	
marsh, lower	R4EM	38.4103, -120.5066	165	0.004	
		Total Wetlands	**209176**	**4.802**	

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Figure 3-2
EXISTING WATERS OF THE U.S.

Aquatic Resources Classification			Aquatic Resource Size		
Label	Cowardin	Location (Lat/Long)	(sq. ft.)	(acre)	(linear feet)
Channels					
channnel, upper	R4SB	38.4125, -120.5028	3846	0.088	445
spillway	n/a	38.4101, -120.5059	3449	0.079	280
channel, lower	R4RB	38.4104, -120.5067	394	0.009	59
		Total Channels	**7689**	**0.176**	**784**
Wetlands					
Open water	L1UB	38.4111, -120.5051	154515	3.547	
marsh, lacustrine	L2EM	38.4114, -120.5043	48485	1.113	
marsh, palustrine	PEM1	38.4107, -120.5047	1790	0.041	
marsh, upper	R4EM	38.4129, -120.5022	4221	0.097	
marsh, lower	R4EM	38.4103, -120.5066	165	0.004	
		Total Wetlands	**209176**	**4.802**	
CDFW LSAA Riparian					
southside	n/a	38.4122, -120.5031	10197	0.234	
northside	n/a	38.4124, -120.5032	13096	0.301	
		Total Riparian	**23293**	**0.535**	

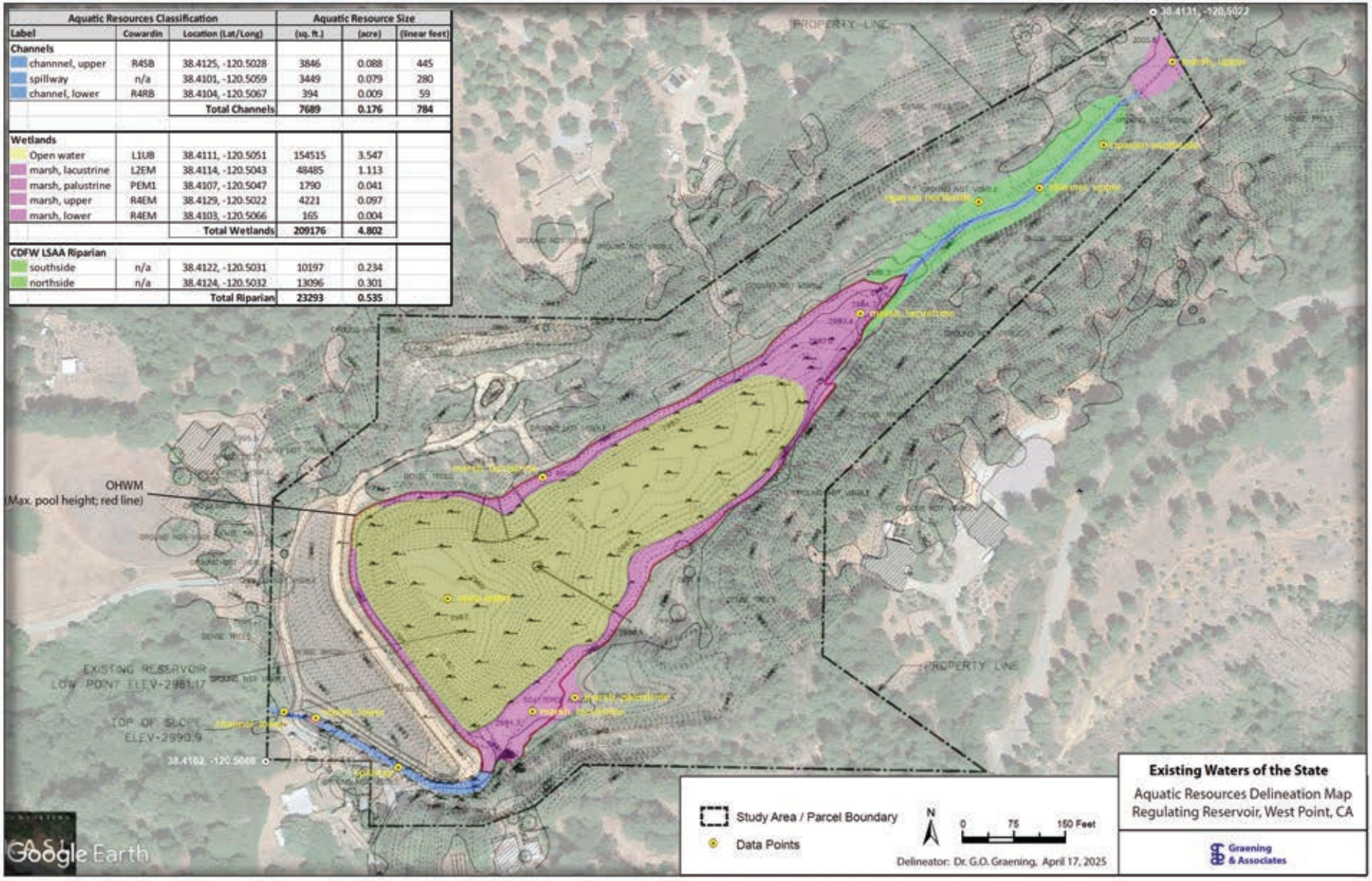

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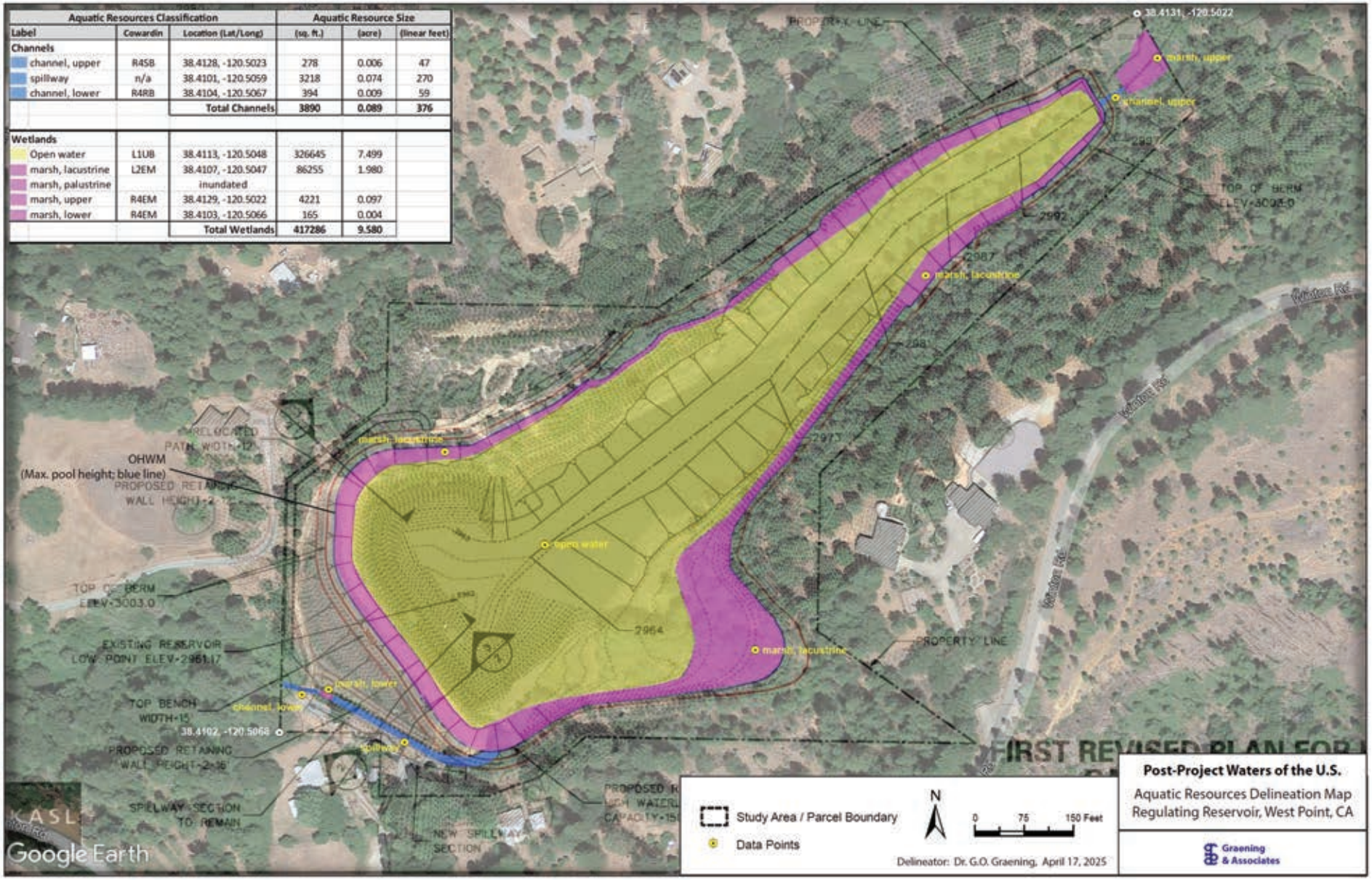
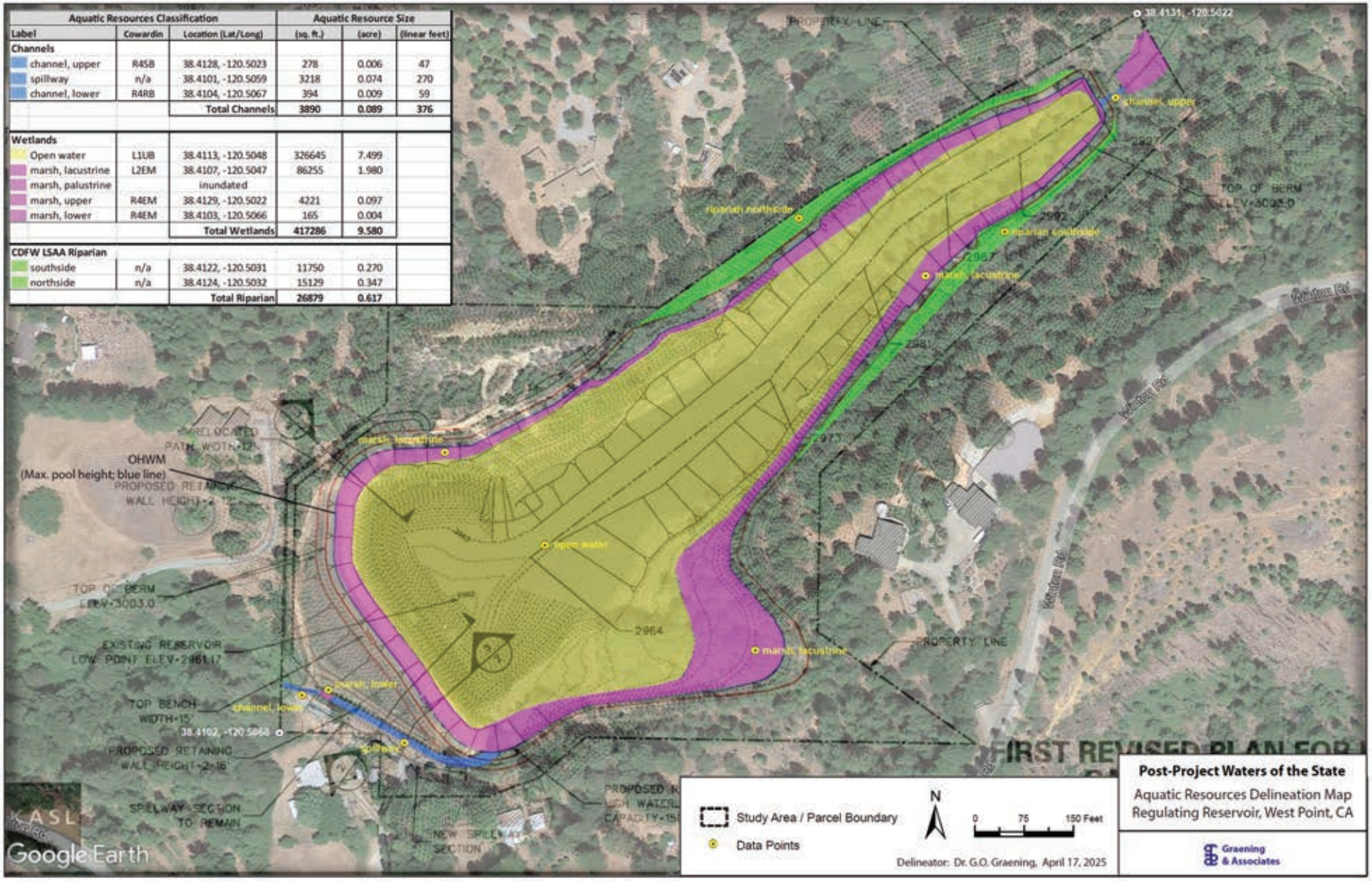
Figure 3-3
EXISTING WATERS OF THE STATE



BaseCamp Environmental

Figure 3-4
POST-PROJECT WATERS OF THE U.S.



BaseCamp Environmental

Figure 3-5
POST-PROJECT WATERS OF THE STATE

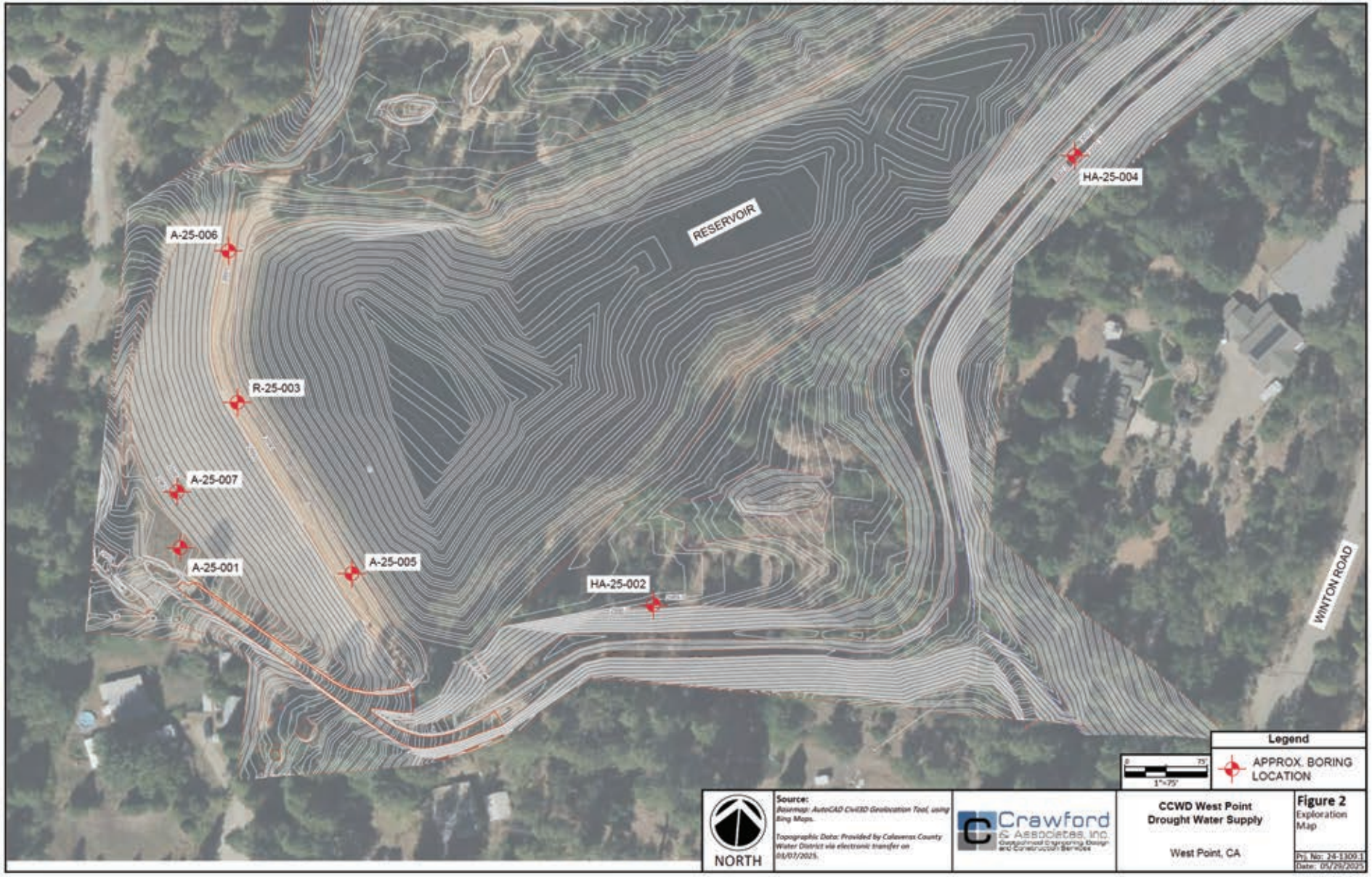


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Figure 3-6
BORING LOCATIONS

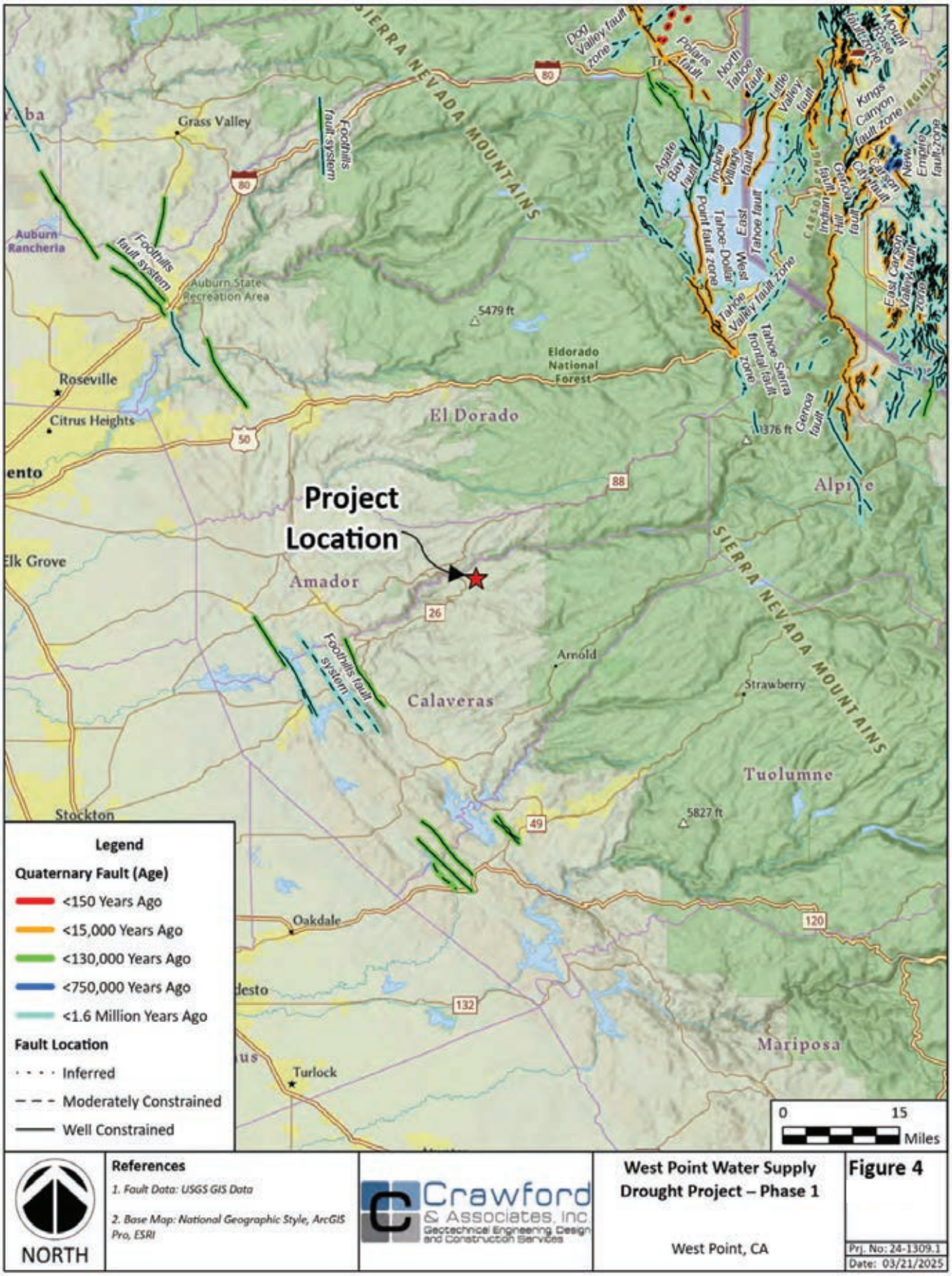


Figure 3-7
FAULT MAP

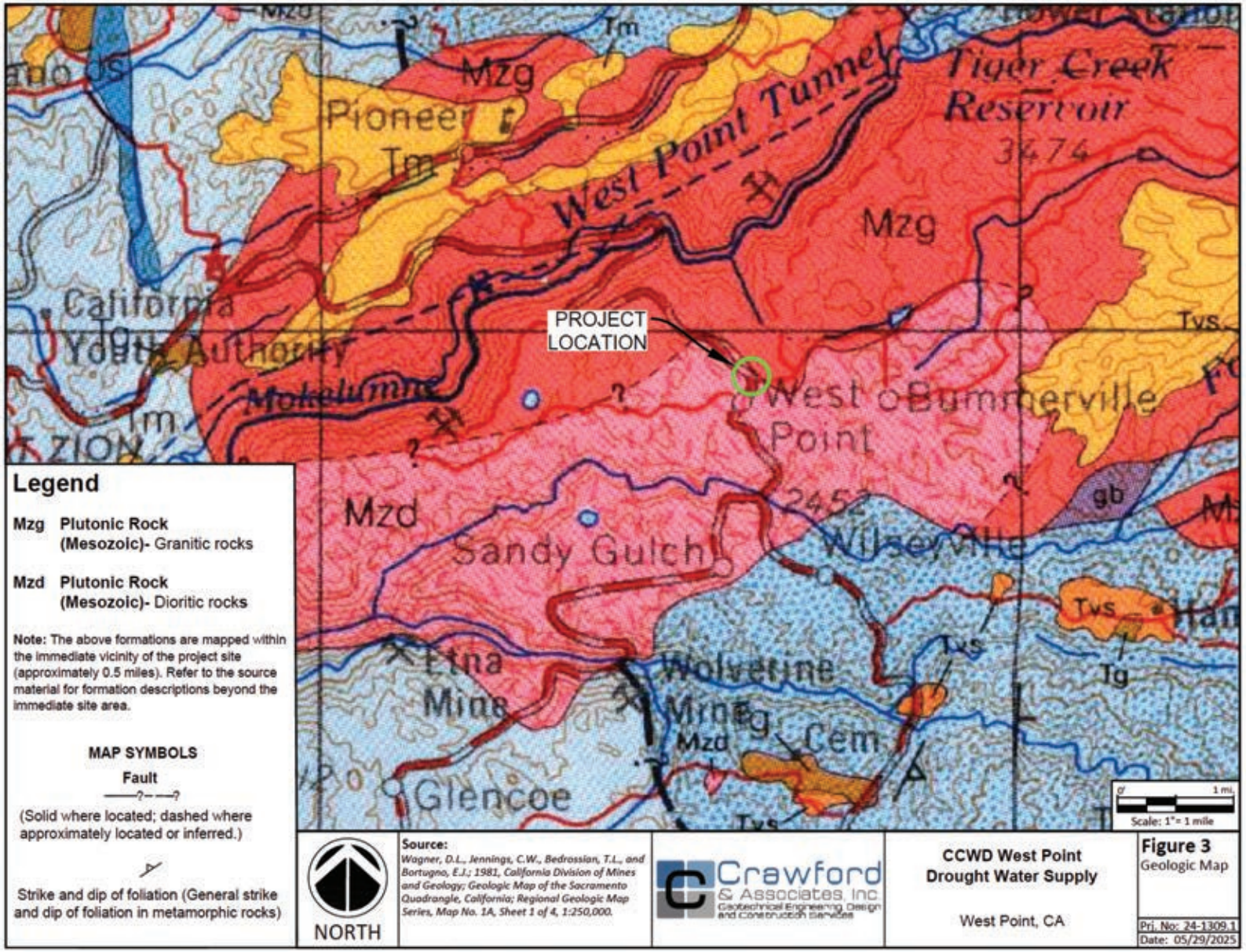


Figure 3-8
GEOLOGIC MAP

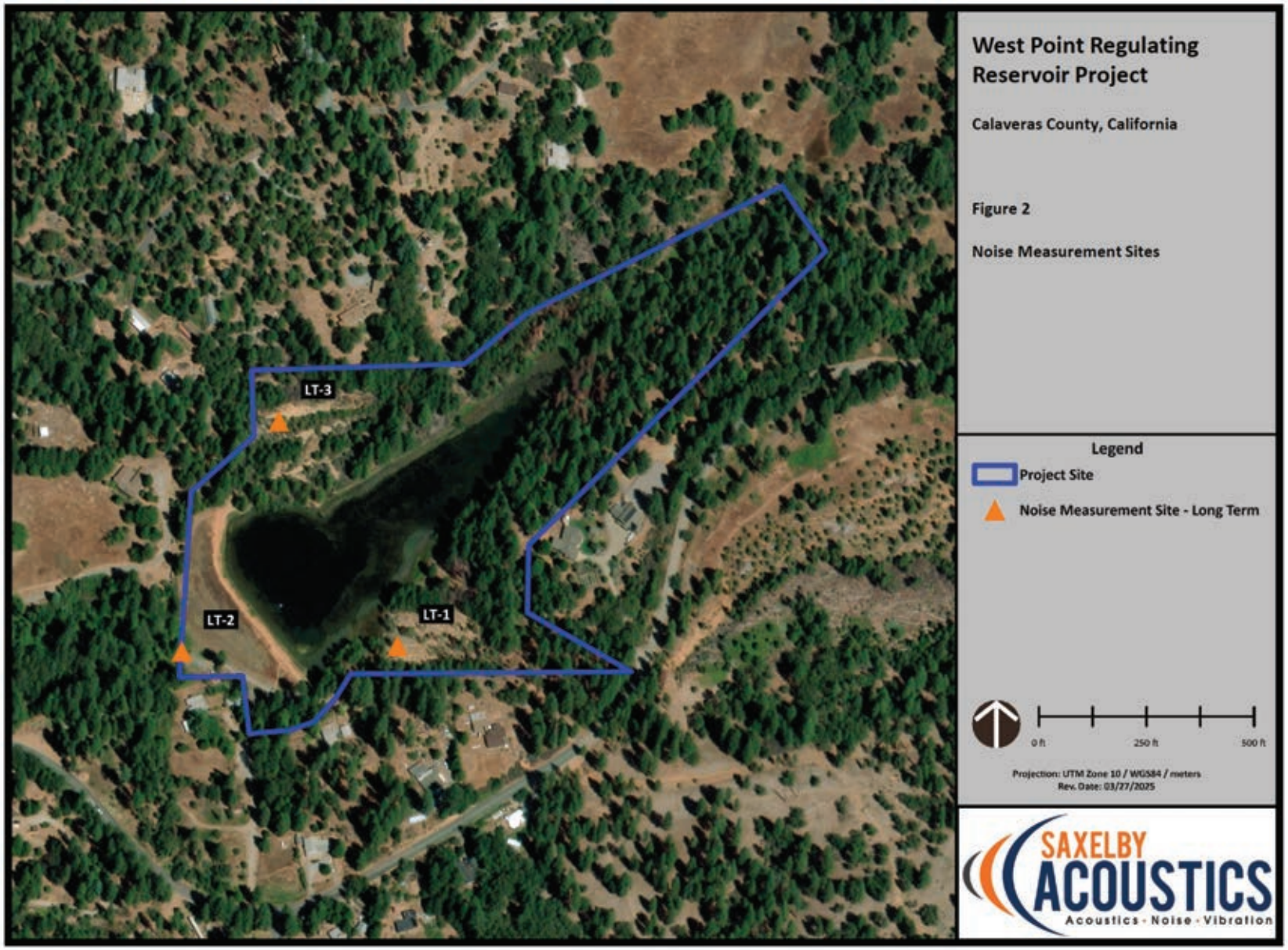
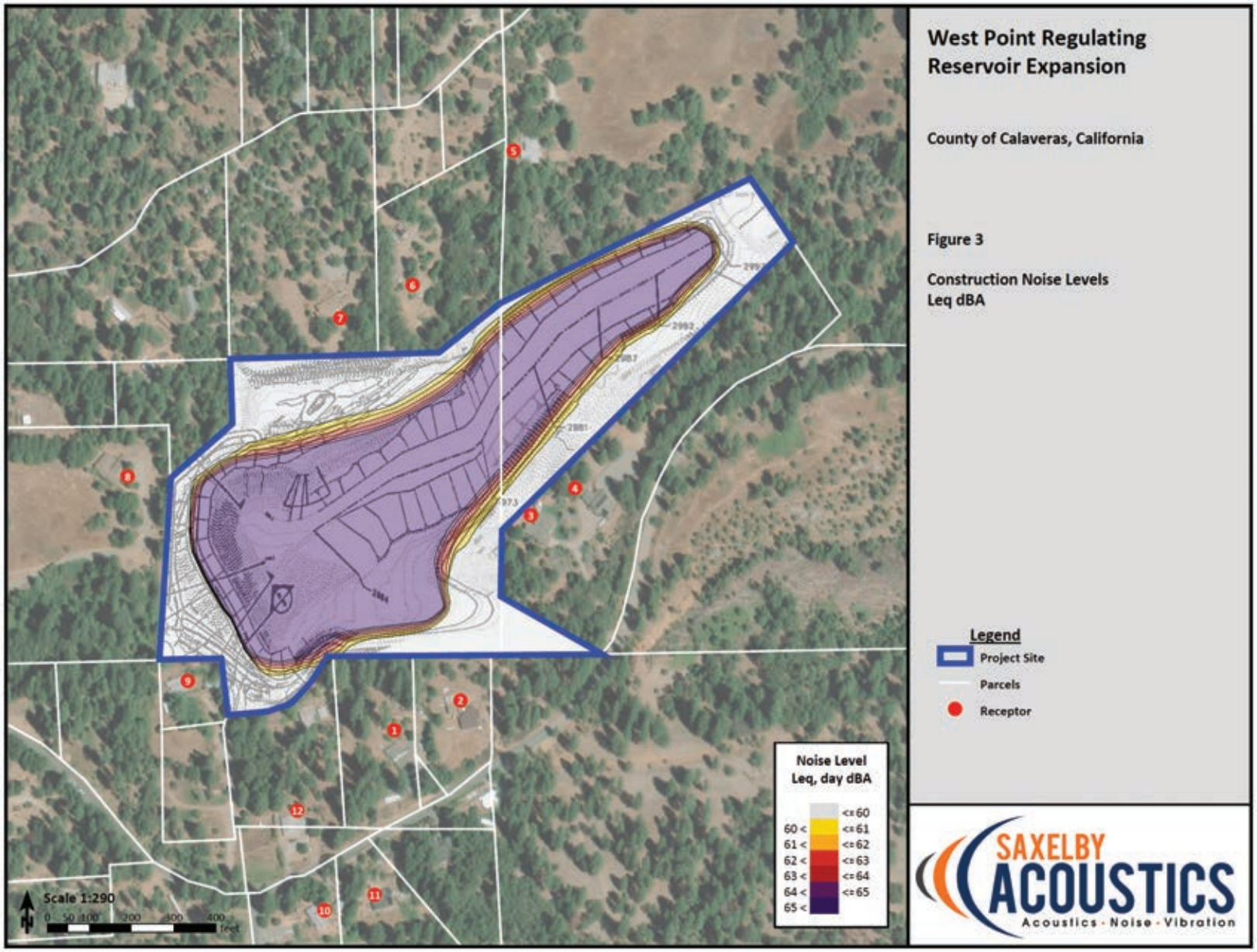


Figure 3-9
NOISE MONITORING SITES


West Point Regulating Reservoir Expansion
County of Calaveras, California
Figure 3
Construction Noise Levels
Leq dBA
Legend
Project Site
Parcels
Receptor
Noise Level
Leq, day dBA
<=60
60 < <=61
61 < <=62
62 < <=63
63 < <=64
64 < <=65
65 <
Scale 1:290
0 50 100 200 300 400 feet
SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

4.0 REFERENCES

4.1 DOCUMENT PREPARERS

This IS/MND was prepared by BaseCamp Environmental, Inc. for use by and under the supervision of the City of Hughson. The following persons were involved in preparation of the IS/MND:

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Krista Simpson, Associate Environmental Planner

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Phil Hanes, MA, RPA. Principal Archaeologist, Natural Investigations Company.

5.0 NOTES ON EVALUATION OF ENVIRONMENTAL IMPACTS

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

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

3) Once the lead agency has determined that a physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [CEQA Guidelines Section 15063(c)(3)(D)]. In this case, a brief discussion should identify the following:

    a) Earlier Analyses Used: Identify and state where they are available for review.

    b) Impacts Adequately Addressed: Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c) Mitigation Measures: For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures, which were

incorporated or refined from the earlier document, and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) The checklist in CEQA Guidelines Appendix G is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

APPENDIX A
BIOLOGICAL ASSESSMENT

BIOLOGICAL RESOURCES ASSESSMENT
FOR THE
WEST POINT REGULATING RESERVOIR PROPERTY

CALAVERAS COUNTY WATER DISTRICT'S WEST POINT WATER SUPPLY DROUGHT PROJECT, WEST POINT, CALIFORNIA

August 13, 2025

Prepared by:

Graening and Associates, LLC
343 Carpenter Hill Road, Folsom CA 95630

TABLE OF CONTENTS

1. INTRODUCTION 2
1.1. PROJECT LOCATION AND DESCRIPTION 2
1.2. SCOPE OF ASSESSMENT 2
1.3. REGULATORY SETTING 2
1.3.1. Special-status Species Regulations 2
1.3.2. Water Resource Protection 4
1.3.3. Tree Protection 4
2. ENVIRONMENTAL SETTING 6
3. METHODOLOGY 6
3.1. PRELIMINARY DATA GATHERING AND RESEARCH 6
3.2. FIELD SURVEY 6
3.3. MAPPING AND OTHER ANALYSES 7
4. RESULTS 8
4.1. INVENTORY OF FLORA AND FAUNA FROM FIELD SURVEY 8
4.2. VEGETATION TYPES AND SENSITIVE COMMUNITIES 8
4.2.1. CNPS Vegetation Types 8
4.2.2. Critical Habitat and Special-status Habitat 8
4.2.3. Habitat Plans and Wildlife Corridors 8
4.3. LISTED SPECIES AND OTHER SPECIAL-STATUS SPECIES 9
4.3.1. Reported Occurrences of Listed Species and Other Special-status Species 9
4.3.2. Listed Species or Special-status Species Observed During Field Survey 11
4.3.3. Potential for Listed Species or Special-status Species to Occur in the Project Area 11
4.4. POTENTIALLY-JURISDICTIONAL WATER RESOURCES 11
4.4.1. Channels 12
4.4.2. Wetlands 12
4.4.3. Open Water 12
4.4.4. Riparian Zones 12
5. IMPACT ANALYSES AND MITIGATION MEASURES 13
5.1. IMPACT SIGNIFICANCE CRITERIA 13
5.2. IMPACT ANALYSIS 13
5.2.5. Potential Direct / Indirect Adverse Effects Upon Special-status Species 13
5.2.6. Potential Direct / Indirect Adverse Effects Upon Special-status Habitats or Natural Communities or Corridors 14
5.2.7. Potential Direct / Indirect Adverse Effects on Jurisdictional Water Resources 15
5.2.8. Potential Impacts to Wildlife Movement, Corridors, etc. 16
5.2.9. Potential Conflicts with Ordinances, Habitat Conservation Plans, etc. 16
6. REFERENCES 18
EXHIBITS ..... A
APPENDIX 1: USFWS SPECIES LIST ..... B
APPENDIX 2: CHECKLIST OF PLANTS DETECTED IN THE PROJECT AREA C
APPENDIX 3: SITE PHOTOS ..... D
APPENDIX 4: SPECIAL-STATUS SPECIES TABLE AND POTENTIAL TO OCCUR ..... E

1. INTRODUCTION

1.1. PROJECT LOCATION AND DESCRIPTION

Calaveras County Water District (CCWD) owns and operates the West Point Water System which provides potable water to approximately 600 residential and commercial customers. The West Point Regulating Reservoir (also known as Bummerville Reservoir) is the only storage pond for the West Point Water System. Raw water flows by gravity diversion from Bear Creek into the West Point Regulating Reservoir. During drought periods the storage of water in the Regulating Reservoir does not meet water demands, as a result the District has to purchase water from the Mokelumne River. The Proposed Project is the enlargement of the existing reservoir, which will increase the storage capacity from 50 acre-feet to approximately 150 acre-feet, thereby reducing the dependence upon non-CCWD water.

The Project Area was defined as the entire 17-acre property, which consists of 3 parcels: APN 004026009 (12.67 acres), APN 004023002 (3.71 acres), and APN 004023016 (approx. 0.5 acres)(see Exhibits).

1.2. SCOPE OF ASSESSMENT

This assessment provides information about the biological resources within the Project Area, the regulatory environment affecting such resources, any potential Project-related impacts upon these resources, and finally, to identify mitigation measures and other recommendations to reduce the significance of these impacts. The specific scope of services performed for this assessment consisted of the following tasks:

- Compile all readily-available historical biological resource information about the Project Area;
- Spatially query state and federal databases for any occurrences of special-status species or habitats within the Project Area and vicinity;
- Perform a reconnaissance-level field survey of the Project Area, including photographic documentation;
- Inventory all flora and fauna observed during the field survey;
- Characterize and map the habitat types present within the Project Area, including any potentially-jurisdictional water resources;
- Evaluate the likelihood for the occurrence of any special-status species;
- Assess the potential for the Project to adversely impact any sensitive biological resources;
- Recommend mitigation measures designed to avoid or minimize Project-related impacts; and
- Prepare and submit a report summarizing all of the above tasks.

1.3. REGULATORY SETTING

The following section summarizes some applicable regulations of biological resources on real property in California.

1.3.1. Special-status Species Regulations

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service implement the Federal Endangered Species Act of 1973 (FESA) (16 USC §1531 et seq.). Threatened and endangered species on the federal list (50 CFR §17.11, 17.12) are protected from “take” (direct or indirect harm), unless a FESA Section 10 Permit is granted or a FESA Section 7 Biological Opinion with incidental take provisions is rendered. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued

existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC §1536[3], [4]). Therefore, project-related impacts to these species or their habitats would be considered significant and would require mitigation. Species that are candidates for listing are not protected under FESA; however, USFWS advises that a candidate species could be elevated to listed status at any time, and therefore, applicants should regard these species with special consideration.

The California Endangered Species Act of 1970 (CESA) (California Fish and Game Code §2050 *et seq*., and CCR Title 14, §670.2, 670.51) prohibits "take" (defined as hunt, pursue, catch, capture, or kill) of species listed under CESA. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Section 2081 establishes an incidental take permit program for state-listed species. Under CESA, California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of threatened and endangered species designated under state law (CFG Code 2070). CDFW also maintains lists of species of special concern, which serve as "watch lists." Pursuant to requirements of CESA, an agency reviewing proposed projects within its jurisdiction must determine whether any state-listed species may be present in the Project Area and determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation.

California Fish and Game Code Sections 4700, 5050, and 5515 designates certain mammal, amphibian, and reptile species "fully protected", making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The California Native Plant Protection Act of 1977 (CFG Code §1900 *et seq*.) requires CDFW to establish criteria for determining if a species or variety of native plant is endangered or rare. Section 19131 of the code requires that landowners notify CDFW at least 10 days prior to initiating activities that will destroy a listed plant to allow the salvage of plant material.

Many bird species, especially those that are breeding, migratory, or of limited distribution, are protected under federal and state regulations. Under the Migratory Bird Treaty Act of 1918 (16 USC §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbances must be reduced or eliminated during the nesting cycle. California Fish and Game Code (§3503, 3503.5, and 3800) prohibits the possession, incidental take, or needless destruction of any bird nests or eggs. Fish and Game Code §3511 designates certain bird species "fully protected", making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The Bald and Golden Eagle Protection Act (16 USC §668) specifically protects bald and golden eagles from harm or trade in parts of these species.

California Environmental Quality Act (CEQA) (Public Resources Code §15380) defines "rare" in a broader sense than the definitions of threatened, endangered, or fully protected. Under the CEQA definition, CDFW can request additional consideration of species not otherwise protected. CEQA requires that the impacts of a project upon environmental resources must be analyzed and assessed using criteria determined by the lead agency. Sensitive species that would qualify for listing but are not currently listed may be afforded protection under CEQA. The CEQA Guidelines (§15065) require that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines (§15380) provide for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Plant species on the California Native Plant Society CRPR Lists 1A, 1B, or 2 are typically considered rare under CEQA. California "Species of Special Concern" is a category conferred by CDFW on those species that are indicators of regional habitat changes or are considered potential future protected species. While they do not have statutory protection, Species of Special Concern are typically considered rare under CEQA and thereby warrant specific protection measures.

1.3.2. Water Resource Protection

Real property that contains water resources are subject to various federal and state regulations and activities occurring in these water resources may require permits, licenses, variances, or similar authorization from federal, state and local agencies, as described next.

The Federal Water Pollution Control Act Amendments of 1972 (as amended), commonly known as the Clean Water Act (CWA), established the basic structure for regulating discharges of pollutants into "waters of the United States". Waters of the US includes essentially all surface waters, all interstate waters and their tributaries, all impoundments of these waters, and all wetlands adjacent to these waters. CWA Section 404 requires approval prior to dredging or discharging fill material into any waters of the US, especially wetlands. The permitting program is designed to minimize impacts to waters of the US, and when impacts cannot be avoided, requires compensatory mitigation. The US Army Corps of Engineers (USACE) is responsible for administering Section 404 regulations. Substantial impacts to jurisdictional wetlands may require an Individual Permit. Small-scale projects may require only a Nationwide Permit, which typically has an expedited process compared to the Individual Permit process. Mitigation of wetland impacts is required as a condition of the CWA Section 404 Permit and may include on-site preservation, restoration, or enhancement and/or off-site restoration or enhancement. The characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands to achieve no net loss of wetlands.

Under CWA Section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. The California State Water Resources Control Board is responsible for administering CWA Section 401 regulations.

Section 10 of the Rivers and Harbors Act of 1899 requires approval from USACE prior to the commencement of any work in or over navigable Waters of the US, or which affects the course, location, condition or capacity of such waters. Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use, as a means to transport interstate or foreign commerce up to the head of navigation. Rivers and Harbors Act Section 10 permits are required for construction activities in these waters.

California Fish and Game Code (§1601 - 1607) protects fishery resources by regulating "*any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake*." CDFW requires notification prior to commencement, and issuance of a Lake or Streambed Alteration Agreement, if a proposed project will result in the alteration or degradation of ''waters of the State". The limit of CDFW jurisdiction is subject to the judgment of the Department; currently, this jurisdiction is interpreted to be the "stream zone", defined as "*that portion of the stream channel that restricts lateral movement of water*" and delineated at "*the top of the bank or the outer edge of any riparian vegetation, whichever is more landward*". CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Streambed Alteration Agreement. Projects that require a Streambed Alteration Agreement may also require a CWA 404 Section Permit and/or CWA Section 401 Water Quality Certification.

For construction projects that disturb one or more acres of soil, the landowner or developer must obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ).

1.3.3. Tree Protection

At the State level, in areas inside timberland, any tree removal is subject to the conditions and requirements set forth in the Z'berg-Nejedly Forest Practice Act and the California Forest Practice Rules.

If development of a project will result in the removal of commercial tree species, one of the following permits is needed: Less than 3 Acre Conversion Exemption; Christmas Tree; Dead, Dying or Diseased, Fuelwood, or Split Products Exemption; a Public Agency, Public and Private Utility Right of Way Exemption; a Notice of Exemption from Timberland Conversion Permit for Subdivision; or an Application for Timberland Conversion Permit.

2. ENVIRONMENTAL SETTING

The Study Area is located within the cis-montane Sierra Nevada mountains geographic subregion, which is contained within the Sierra Nevada Mountains geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012). The Study Area is in Climate Zone 2b "Warmer-Summer Intermountain Climate", characterized by milder summers and longer and colder winters than in the Central Valley (Sunset, 2025). The topography of the Study Area is a broad valley incised by a small stream, but it has been altered by the creation of an impoundment. The general direction of surface runoff in the Project Area is into the reservoir and then to the southwest in an unnamed channel. The elevation ranges from approximately 2,950 feet to 3,060 feet above mean sea level. The land uses of the Study Area are a water supply reservoir and open space. The surrounding land uses are rural estates, timber reserve, open space, transportation corridors, and grazing land.

Digital soil survey maps from NRCS' SSURGO 2.2 Database were consulted for this study (NRCS 2017), and mapped soil units occurring within the Project Area are as follows:

- 6036: Musick-Wukusick complex, 15 to 30 percent slopes, low precipitation, well drained, not hydric
- 6202: Musick-Ultic Haploxeralfs, moderately well drained, complex, 1 to 8 percent slopes, well drained, not hydric

3. METHODOLOGY

3.1. PRELIMINARY DATA GATHERING AND RESEARCH

Prior to conducting the field survey, the following information sources were reviewed:

- Any readily-available previous biological resource studies pertaining to the Project Area or vicinity
- Aerial photography of the Project Area (current and historical)
- United States Geologic Service 7.5 degree-minute topographic quadrangles of the Project Area and vicinity
- USFWS National Wetland Inventory
- USDA Natural Resources Conservation Service soil survey maps
- California Natural Diversity Database (CNDDB), electronically updated monthly by subscription
- Query of the CNPS Rare Plant Inventory database (quadrangle search)(CNPS 2025a)
- USFWS species list (IPaC Trust Resources Report).

3.2. FIELD SURVEY

Consulting biologist Dr. Geo Graening conducted a reconnaissance-level field survey on March 27, 2025. Weather conditions were cool and hazy, and it had rained recently. A variable-intensity pedestrian survey was performed, and modified to account for differences in terrain, vegetation density, and visibility. All visible fauna and flora observed were recorded in a field notebook, and identified to the lowest possible taxon. Survey efforts emphasized the search for any special-status species that had documented occurrences in the CNDDB within the vicinity of the Project Area and those species on the USFWS species list (Appendix 1).

When a specimen could not be identified in the field, a photograph or voucher specimen (depending upon permit requirements) was taken and identified in the laboratory using a dissecting scope where necessary. Taxonomic determinations were facilitated by referencing museum specimens or by various texts and databases, including the following: Powell and Hogue (1979); Pavlik (1991); (1993); Stuart and Sawyer (2001); Lanner (2002); Sibley (2003); Jepson eFlora (UC Berkeley, 2025); Calflora (2021); CDFW (2021b,c); NatureServe 2021.

The locations of any special-status species sighted were marked on aerial photographs and/or georeferenced with a geographic positioning system (GPS) receiver. Habitat types occurring in the Project Area were mapped on aerial photographs, and information on habitat conditions and the suitability of the habitats to support special-status species was also recorded. The Project Area was also informally assessed for the presence of potentially-jurisdictional water features, including riparian zones, isolated wetlands and vernal pools, and other biologically-sensitive aquatic habitats

3.3. MAPPING AND OTHER ANALYSES

Locations of species' occurrences and habitat boundaries within the Project Area were digitized to produce the final habitat maps. The boundaries of potentially jurisdictional water resources within the Project Area were identified and measured in the field, and similarly digitized to calculate acreage and to produce informal delineation maps. Geographic analyses were performed using geographical information system software (ArcGIS 10, ESRI, Inc.). Vegetation types (assemblages of plant species growing in an area of similar biological and environmental factors), were classified using the CNPS vegetation classification system (CNPS 2025b). Preliminary wetland delineation methods consisted of an abbreviated, visual assessment of the three requisite wetland parameters (hydrophytic vegetation, hydric soils, hydrologic regime) defined in the US Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). Wildlife habitats were classified according to the CDFW's California Wildlife Habitat Relationships System (CDFW, 2021c). Species' habitat requirements and life histories were identified using the following sources: Baldwin et al. (2012); CNPS (2021), Calflora (2021); CDFW (2021a,b,c); and University of California at Berkeley (2021a,b).

4. RESULTS

4.1. INVENTORY OF FLORA AND FAUNA FROM FIELD SURVEY

All plants detected during the field survey of the Project Area are listed in Appendix 2. The following animals were detected within the Project Area during the field survey:

moths and butterflies (Lepidoptera); ants (Formicidae); Canada goose (Branta canadensis); great blue heron (Ardea herodias); red-winged blackbird (Agelaius phoeniceus); Stellar's jay (Cyanocitta stelleri); spotted towhee (Pipilo maculatus); northern flicker (Colaptes auratus); black phoebe (Sayornis nigricans); song sparrow (Melospiza melodia); hermit thrush (Catharus guttatus); yellow-rumped warbler (Setophaga coronata); acorn woodpecker (Melanerpes formicivorus); golden-crowned sparrow (Zonotrichia atricapilla); chipping sparrow (Spizella passerina); black tailed deer (Odocoileus hemionus columbianus); and Pacific chorus frog (Pseudacris regilla).

No federally-listed species were detected. No special-status species were detected.

4.2. VEGETATION TYPES AND SENSITIVE COMMUNITIES

4.2.1. CNPS Vegetation Types

General vegetation communities occurring in the Project Area were mapped (see Exhibits). More specifically, the following terrestrial natural communities occur in the Project Area (as categorized by CNPS 2025b):

- Pinus ponderosa - Calocedrus decurrens - Pseudotsuga menziesii Forest & Woodland Alliance (Ponderosa pine - Incense Cedar - Douglas fir forest and woodland)
- Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni) Forest & Woodland Alliance (Mixed oak forest and woodland)
- Arctostaphylos viscida Shrubland Alliance (Whiteleaf manzanita chaparral)
- Ceanothus cuneatus Shrubland Alliance (Buck brush chaparral)
- Typha (angustifolia, domingensis, latifolia) Herbaceous Alliance (Cattail marshes)
- Juncus - Carex Herbaceous Alliance (Rush - sedge marshes)
- Salix gooddingii - Salix laevigata Forest & Woodland Alliance (Goodding's willow - red willow riparian woodland and forest)

In addition to these natural communities, the Project Area contains open water (in the reservoir) and ruderal/developed areas (the roads, the dam, etc.). All of these vegetation communities are mapped in the Exhibits.

4.2.2. Critical Habitat and Special-status Habitat

No critical habitat for any federally-listed species occurs within the Project Area.

The CNDDB reported no special-status habitats within the Project Area. The CNDDB reported the following special-status habitats in a 10-mile radius outside of the Project Area: Central Valley Drainage Hardhead/Squawfish Stream; Central Valley Drainage Resident Rainbow Trout Stream; Ione chaparral; Sacramento-San Joaquin Foothill/Valley Ephemeral Stream.

The following special-status habitats were detected within the Project Area during the field survey: riparian habitat and wetlands.

4.2.3. Habitat Plans and Wildlife Corridors

Wildlife movement corridors link remaining areas of functional wildlife habitat that are separated primarily by human disturbance, but natural barriers such as rugged terrain and abrupt changes in vegetation

cover are also possible. Wilderness and open lands have been fragmented by urbanization, which can disrupt migratory species and separate interbreeding populations. Corridors allow migratory movements and act as links between these separated populations.

The Bear Creek river corridor functions as a wildlife corridor; Bear Creek also contains fishery resources. The Project Area is not located within any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

4.3. LISTED SPECIES AND OTHER SPECIAL-STATUS SPECIES

For the purposes of this assessment, "special status" is defined to be species that are of management concern to state or federal natural resource agencies, and include those species that are:

- Listed as endangered, threatened, proposed, or candidate for listing under the Federal Endangered Species Act;
- Listed as endangered, threatened, rare, or proposed for listing, under the California Endangered Species Act of 1970;
- Designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§3511, §4700, or §5050);
- Designated as a species of special concern by CDFW;
- Plants considered to be rare, threatened or endangered in California by the California Native Plant Society (CNPS); this consists of species on Lists 1A, 1B, and 2 of the California Rare Plant Rank ranking system; or
- Plants listed as rare under the California Native Plant Protection Act.

4.3.1. Reported Occurrences of Listed Species and Other Special-status Species

A list of special-status plant and animal species that have occurred within the Project Area and vicinity was compiled based upon the following:

- Any previous and readily-available biological resource studies pertaining to the Project Area;
- Informal consultation with USFWS by generating an electronic Species List (Information for Planning and Conservation website at https://ecos.fws.gov/ipac/); and
- A spatial query of the CNDDB using the standard 9 quadrangle boundary
- A query of the California Native Plant Society's database *Inventory of Rare and Endangered Plants of California* (online edition).

The CNDDB was queried and any reported occurrences of special-status species were plotted in relation to the Project Area boundary using GIS software (see exhibits). The CNDDB reported no special-status species occurrences within the Project Area. Within a 10-mile buffer of the Project Area boundary, the CNDDB reported several special-status species occurrences, summarized in the table in the Appendix along with any additional CNPS species.

A USFWS species list was generated online using the USFWS' IPaC Trust Resource Report System (see Appendix 1). This list is generated using a regional and/or watershed approach and does not necessarily indicate that the Project Area provides suitable habitat. The following listed species should be considered in the impact assessment:

- Gray Wolf (*Canis lupus*) Endangered
- California Spotted Owl *(Strix occidentalis occidentalis*) Proposed Threatened
- Northwestern Pond Turtle (*Actinemys marmorata*) Proposed Threatened
- California Red-legged Frog (*Rana draytonii*) Threatened

- Foothill Yellow-legged Frog (*Rana boylii*, South Sierra Distinct Population Segment) Endangered
- Western Spadefoot (*Spea hammondii*) Proposed Threatened
- Monarch Butterfly (*Danaus plexippus*) Proposed Threatened

Migratory birds should also be considered in the impact assessment.

4.3.2. Listed Species or Special-status Species Observed During Field Survey

During the field survey, no special-status species were detected within the Project Area.

4.3.3. Potential for Listed Species or Special-status Species to Occur in the Project Area

See the Appendix for a complete analysis of Special-status Species and their potential to occur in the Project Area.

The aquatic habitats within the Project Area have the potential for harboring three special-status plant species: scalloped moonwort (Botrychium crenulatum), watershield (Brasenia schreberi), and yellow-lip pansy monkeyflower (Diplacus pulchellus).

The aquatic habitats within the Project Area have the potential for harboring four special-status animal species: southern long-toed salamander (Ambystoma macrodactylum sigillatum), foothill yellow-legged frog (Rana boylii), California red-legged frog (Rana draytonii), and western pond turtle (Emys marmorata).

The forest habitats within the Project Area have the potential for harboring special-status bat and bird species, specifically: silver-haired bat (Lasionycteris noctivagans), hoary bat (Lasiurus cinereus), long-legged myotis (Myotis volans), Townsend's big-eared bat (Corynorhinus townsendii), great gray owl (Strix nebulosa), and sharp-shinned hawk (Accipiter striatus).

4.4. POTENTIALLY-JURISDICTIONAL WATER RESOURCES

The USFWS National Wetland Inventory reported three water features within the Project Area (see Exhibits): the reservoir; the stream feeding in to the reservoir; and the stream leaving the reservoir.

A formal assessment for the presence of potentially-jurisdictional water resources within the Project Area was also conducted during the field survey.

- Graening and Associates LLC. 2025. Aquatic Resource Delineation Report for the West Point Regulating Reservoir Property. Calaveras County Water District's West Point Water Supply Drought Project, West Point, California. 41 pp.

The West Point Regulating Reservoir was constructed in 1964. The dam is approximately 30 feet high and 460 feet long; the top of earthen dam is at an elevation of 2990.9 feet. The reservoir is about 950 feet long and 25 feet deep; the bottom elevation of the reservoir is 2961.2 feet. The high waterline elevation (= OHWM) is 2986.5 feet. The capacity is 42.7 acre-feet; the surface area is 203,000 square feet.

Raw water is supplied to the West Point Regulating Reservoir with existing diversions from Bear Creek and the Middle Fork of the Mokelumne River. Raw water from the Bear Creek diversion flows, by gravity, to the reservoir; the water enters the Regulating Reservoir on the south side near the spillway. CCWD supplements the Bear Creek supply with Middle Fork Mokelumne River water purchased through an agreement with the Calaveras Public Utility District. Middle Fork Mokelumne River is pumped to the Regulating Reservoir through the reverse direction of the dam's outlet pipe when water from the MFMR Pump Station bypasses the West Point WTP and flows back into the Regulating Reservoir.

The reservoir pipe outlet is a slanted sluice gate connected to a bottom outlet pipe and further, a series of valves which regulate gravity flows to the West Point WTP.

4.4.1. Channels

channel, upper: Cowardin Class R4SB, coordinates 38.4125, -120.5028; 3846 sq. ft.; 0.088 acre; 445 linear feet; this is the unnamed intermittent channel that flows into the reservoir; it has a cobble bottom and is surrounded by riparian forest

spillway: Cowardin Class n/a, coordinates 38.4101, -120.5059; 3449 sq. ft.; 0.079 acre; 280 linear feet; this is a shallow, concrete-lined, trapezoidal canal; devoid of vegetation

channel, lower: Cowardin Class R4RB, coordinates 38.4104, -120.5067; 394 sq. ft.; 0.009 acre; 59 linear feet; it has a cobble/bedrock bottom; it is fed by the spillway via a pipe culvert; cattails and reeds (Juncus) dominate.

4.4.2. Wetlands

marsh, lacustrine: Cowardin Class L2EM, coordinates 38.4114, -120.5043; 48,485 sq. ft.; 1.113 acres; this is a series of emergent wetlands that are dominated by cattails

marsh, palustrine: Cowardin Class PEM1, coordinates 38.4107, -120.5047; 1790 sq. ft.; 0.041 acre; this is a small, seasonal emergent wetland that is dominated by sedges and reeds

marsh, upper: Cowardin Class R4EM, coordinates 38.4129, -120.5022; 4221 sq. ft.; 0.097 acre; this is seasonal emergent wetland that is dominated by cattails and is created by the road over the upper channel; a pipe culvert connects it to the downstream channel

marsh, lower: Cowardin Class R4EM, coordinates 38.4103, -120.5066; 165 sq. ft.; 0.004 acre; this is a seasonal emergent marsh that is between the spillway and the pipe culvert leading to the lower channel.

4.4.3. Open Water

Open water: Cowardin L1UB, coordinates 38.4111, -120.5051; 154,515 sq. ft.; 3.547 acres This is the open water of West Point Regulating Reservoir at max. pool height (OHWM).

4.4.4. Riparian Zones

Southside: coordinates 38.4122, -120.5031; 10197 sq. ft.; 0.234 acre; this is a narrow band of riparian forest on the southside of the upper channel; it is dominated by willows and alders

northside: coordinates 38.4124, -120.5032; 13096 sq. ft.; 0.301 acre; this is a narrow band of riparian forest on the northside of the upper channel; it is dominated by willows and alders

5. IMPACT ANALYSES AND MITIGATION MEASURES

This section establishes the impact criteria, then analyzes potential Project-related impacts upon the known biological resources within the Project Area, and then suggests mitigation measures to reduce these impacts to a less-than-significant level.

5.1. IMPACT SIGNIFICANCE CRITERIA

The significance of impacts to biological resources depends upon the proximity and quality of vegetation communities and wildlife habitats, the presence or absence of special-status species, and the effectiveness of measures implemented to protect these resources from Project-related impacts. As defined by CEQA, the Project would be considered to have a significant adverse impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a special-status species in local or regional plans, policies, or regulations, or by USFWS or CDFW
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by USFWS or CDFW
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- 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
- Conflict with any county or municipal policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved governmental habitat conservation plan.

5.2. IMPACT ANALYSIS

The following discussion evaluates the potential for Project-related activities to adversely affect biological resources. The Project boundaries were digitized and then overlaid on the habitat map using GIS to quantify potential impacts. Historical aerial photos were also analyzed for changes in land use.

The proposed development project consists of the renovation and enlargement of the reservoir (see Exhibits). The proposed dimensions are: top of new earthen dam / berm is 3003.0 feet; high waterline elevation is 2,999 feet; the capacity is 150 acre-feet; the surface area is 412,900 square feet. The modifications to the reservoir will require the following estimated earthwork volumes:

- Reservoir and Reservoir Embankment Excavation = 45,000 cubic yards
- Place and Compact Reservoir Embankment = 60,000 cubic yards

The limits of grading encompass and area of 508,209 sq. ft. (11.667 acres).

5.2.5. Potential Direct / Indirect Adverse Effects Upon Special-status Species

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

The aquatic habitats within the Project Area have the potential for harboring three special-status plant species: scalloped moonwort, watershield, and yellow-lip pansy monkeyflower. The aquatic habitats within the Project Area have the potential for harboring four special-status animal species: southern long-toed salamander, foothill yellow-legged frog, California red-legged frog, and western pond turtle. The forest habitats within the Project Area have the potential for harboring the following special-status bat and bird species: silver-haired bat, hoary bat, long-legged myotis, Townsend's big-eared bat, great gray owl, and sharp-shinned hawk. During the field survey, no listed species or special-status species were observed within the Project Area. However, special-status species could be undetected or they could migrate into Project Areas between the time that the field survey was completed and the start of construction. This is a potentially significant impact before mitigation.

Special-status bird and bat species were reported in databases (CNDDB and USFWS) in the vicinity of the Project Area. The Project Area contains suitable nesting and roosting habitat for various bird and bat species. If construction activities are conducted during the nesting season or the bat roosting birds, nesting birds or roosting bats could be directly impacted by tree removal and indirectly impacted by noise, vibration, and other construction-related disturbance. Therefore, Project construction is considered a potentially significant adverse impact to nesting birds and roosting bats.

Recommended Mitigation Measures

Because special-status species that occur in the vicinity could migrate onto the Project Area between the time that the field survey was completed and the start of construction, a pre-construction survey for special-status species should be performed by a qualified biologist to ensure that special-status species are not present. The focal species are scalloped moonwort, watershield, yellow-lip pansy monkeyflower, southern long-toed salamander, foothill yellow-legged frog, California red-legged frog, and western pond turtle. If any listed species are detected, construction should be delayed, and the appropriate wildlife agency (CDFW and/or USFWS) should be consulted, avoidance measures initiated, and project impacts and mitigation reassessed. With the implementation of this mitigation measure, adverse impacts upon special-status species would be reduced to a less-than-significant level.

If construction activities would occur during the nesting season (typically February through August), a pre-construction survey for the presence of special-status bird species or any nesting bird species should be conducted by a qualified biologist within 500 feet of proposed construction areas and a quarter mile for raptors. If active nests are identified in these areas, CDFW and/or USFWS should be consulted to develop measures to avoid “take” of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site.

A pre-construction bat survey should be performed by a qualified biologist to ensure that bats are not roosting in trees that will be felled or near construction activities where a bat colony could be adversely affected. The focal species are silver-haired bat, hoary bat, long-legged myotis, Townsend's big-eared bat. If any bat roosts or colonies are detected, construction should be delayed, and the appropriate wildlife agency (CDFW and/or USFWS) should be consulted, avoidance measures initiated, and project impacts and mitigation reassessed. With the implementation of this mitigation measure, adverse impacts upon bat populations would be reduced to a less-than-significant level.

5.2.6. Potential Direct / Indirect Adverse Effects Upon Special-status Habitats or Natural Communities or Corridors

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

The Project Area is not within any designated listed species’ critical habitat.

The Project Area contains special-status habitats that will be impacted: riparian habitat and wetlands. This is a significant impact before mitigation.

Recommended Mitigation Measures

See Section 5.2.7 for mitigation measures.

5.2.7. Potential Direct / Indirect Adverse Effects on Jurisdictional Water Resources

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

Potential indirect impacts to water resources could occur during construction: surface water quality has the potential to be degraded from storm water transport of sediment from disturbed soils or by accidental release of hazardous materials or petroleum products from sources such as heavy equipment servicing or refueling. This is a potentially significant impact. However, the landowner and its designated general contractor must enroll under the State Water Quality Control Board's Construction General Permit prior to the initiation of construction. In conjunction with enrollment under this Permit, a Storm Water Pollution Prevention Plan, Erosion Control Plan, and a Hazardous Materials Management/Spill Response Plan must be created and implemented during construction to avoid or minimize the potential for erosion, sedimentation, or accidental release of hazardous materials. Implementation of these measures mandated by law would reduce potential construction-related impacts to water quality to a less-than-significant level. No mitigation is necessary.

Project implementation will cause the following direct impacts to water resources:

Channels

channel, upper: inundation of 398 feet of channel

spillway: modifications to concrete spillway may shorten this artificial channel by 10 feet

channel, lower: project will have no effect on this feature

Wetlands

marsh, lacustrine: gain of 0.867 acre of lacustrine wetlands

marsh, palustrine: loss (by inundation) of 0.041 acre of palustrine wetland

marsh, upper: project will have no effect on this feature

marsh, lower: project will have no effect on this feature

Open Water

Open water: 3.952 acres of open water will be created

Riparian Zone

Southside: 0.234 acre of riparian forest will be removed, but 0.270 acres of riparian forest is proposed to be created around new reservoir perimeter

northside: 0.301 acre of riparian forest will be removed, but 0.347 acres of riparian forest is proposed to be created around new reservoir perimeter

Recommended Mitigation Measures

The formal delineation of waters of the US should be verified by USACE. The project will require a Clean Water Act Section 404 permit. Clean Water Act Section 401 Water Quality Certification would be required in conjunction with a Section 404 permit. The project will also require a California Fish and Game Code Section 1600 lake or streambed alteration agreement for impacts to water resources and to riparian habitat. Avoidance and minimization measures, as well as compensatory mitigation for loss of jurisdictional waters and riparian, is required by federal and state permits to maintain the policy of "No Net Loss" of wetlands and other protected water resources. Compensatory mitigation would consist of any combination of in-lieu fee payment to a mitigation bank, habitat enhancement or creation, or land dedication, at mitigation ratios determined by USACE. The acquisition of these permits, and the performance of avoidance, minimization, and mitigation measures would reduce impacts to water resources to a less than significant level.

5.2.8. Potential Impacts to Wildlife Movement, Corridors, etc.

- *Will the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

The Bear Creek river corridor functions as a wildlife corridor; Bear Creek also contains fishery resources. Implementation of the proposed project will erect new barriers and in general, will not affect wildlife movement. Fishery resources could be impacted, but mitigation measures in Section 5.2.7 will protect these resources. Thus, implementation of the proposed project is a less than significant impact upon wildlife movement. Implementation of the project will 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.

Recommended Mitigation Measures

No additional mitigation is necessary.

5.2.9. Potential Conflicts with Ordinances, Habitat Conservation Plans, etc.

- *Will the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*
- *Will the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

Implementation of the proposed project will require the removal of mature trees that may be protected by CDFW or by CALFIRE. This is a potentially significant impact before mitigation.

The project does not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or another approved governmental habitat conservation plan. The Project Area is not within the coverage area of any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Recommended Mitigation Measures

Trees in riparian habitats are discussed in Section 5.2.7.

At the State level, in areas inside timberland, any tree removal is subject to the conditions and requirements set forth in the Z'berg-Nejedly Forest Practice Act and the California Forest Practice Rules.

If development of the project will result in the removal of commercial tree species, one of the following permits is needed: Less than 3 Acre Conversion Exemption; Christmas Tree; Dead, Dying or Diseased, Fuelwood, or Split Products Exemption; a Public Agency, Public and Private Utility Right of Way Exemption; a Notice of Exemption from Timberland Conversion Permit for Subdivision; or an Application for Timberland Conversion Permit.

6. REFERENCES

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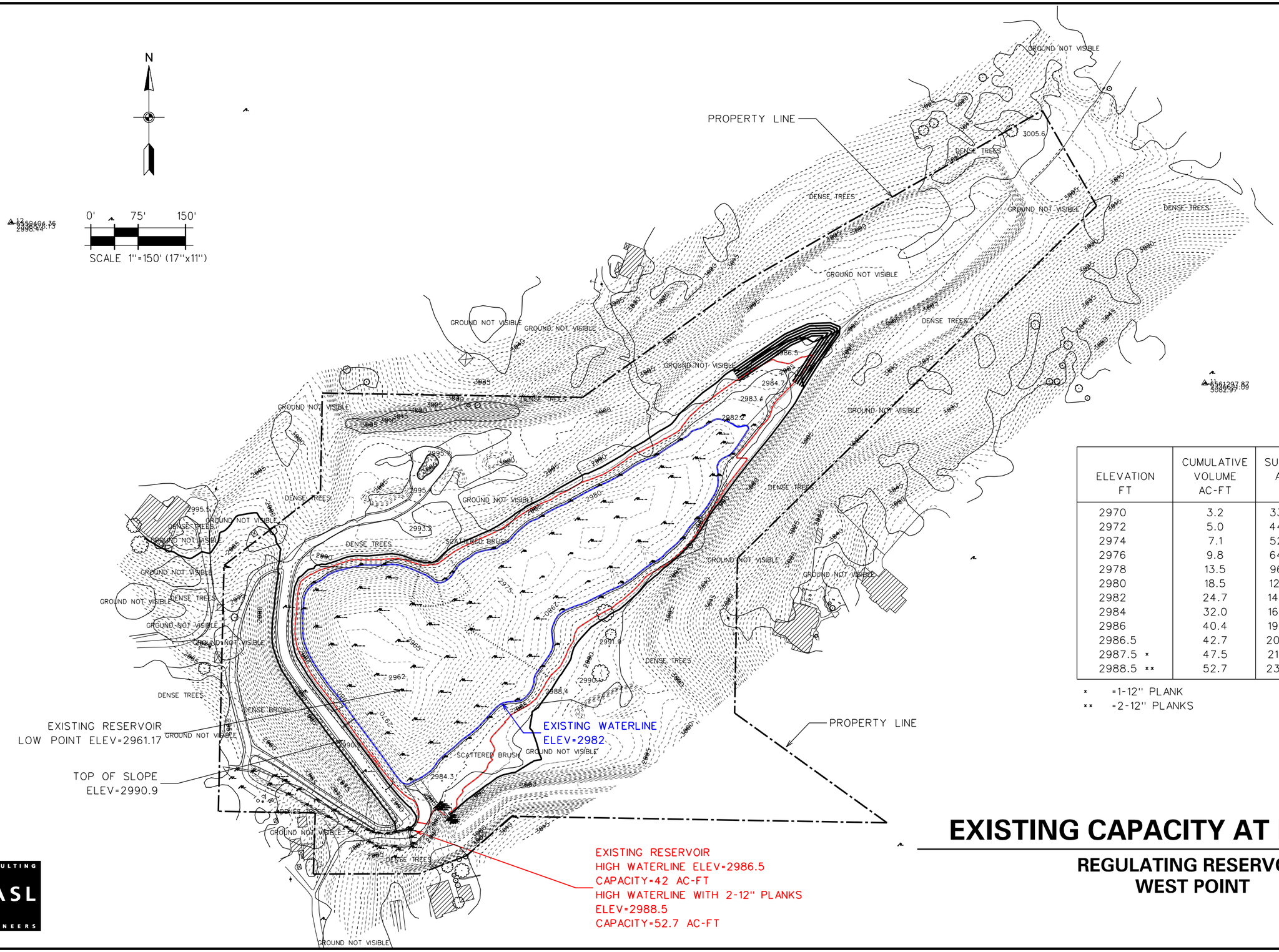
EXHIBITS



ELEVATION FT	CUMULATIVE VOLUME AC-FT	SURFACE AREA SF
2970	3.2	33,800
2972	5.0	44,700
2974	7.1	52,000
2976	9.8	64,500
2978	13.5	96,700
2980	18.5	121,700
2982	24.7	146,800
2984	32.0	169,200
2986	40.4	197,000
2986.5	42.7	203,000
2987.5 *	47.5	217,500
2988.5 **	52.7	233,600

* =1-12" PLANK
** =2-12" PLANKS

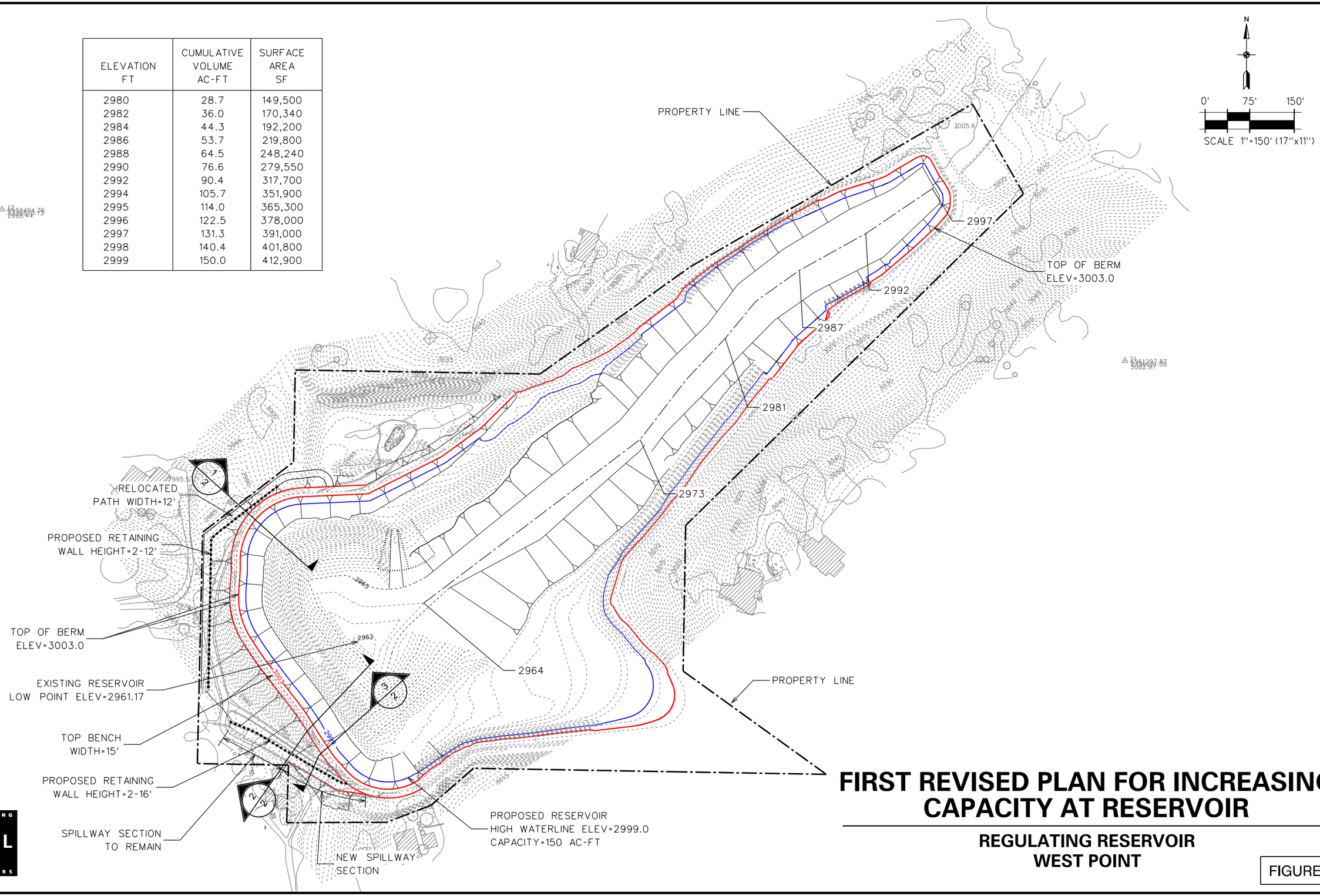
EXISTING CAPACITY AT RESERVOIR

REGULATING RESERVOIR
WEST POINT

FIGURE 5

CONSULTING KASL ENGINEERS

ELEVATION FT	CUMULATIVE VOLUME AC-FT	SURFACE AREA SF
2980	28.7	149,500
2982	36.0	170,340
2984	44.3	192,200
2986	53.7	219,800
2988	64.5	248,240
2990	76.6	279,550
2992	90.4	317,700
2994	105.7	351,900
2995	114.0	365,300
2996	122.5	378,000
2997	131.3	391,000
2998	140.4	401,800
2999	150.0	412,900

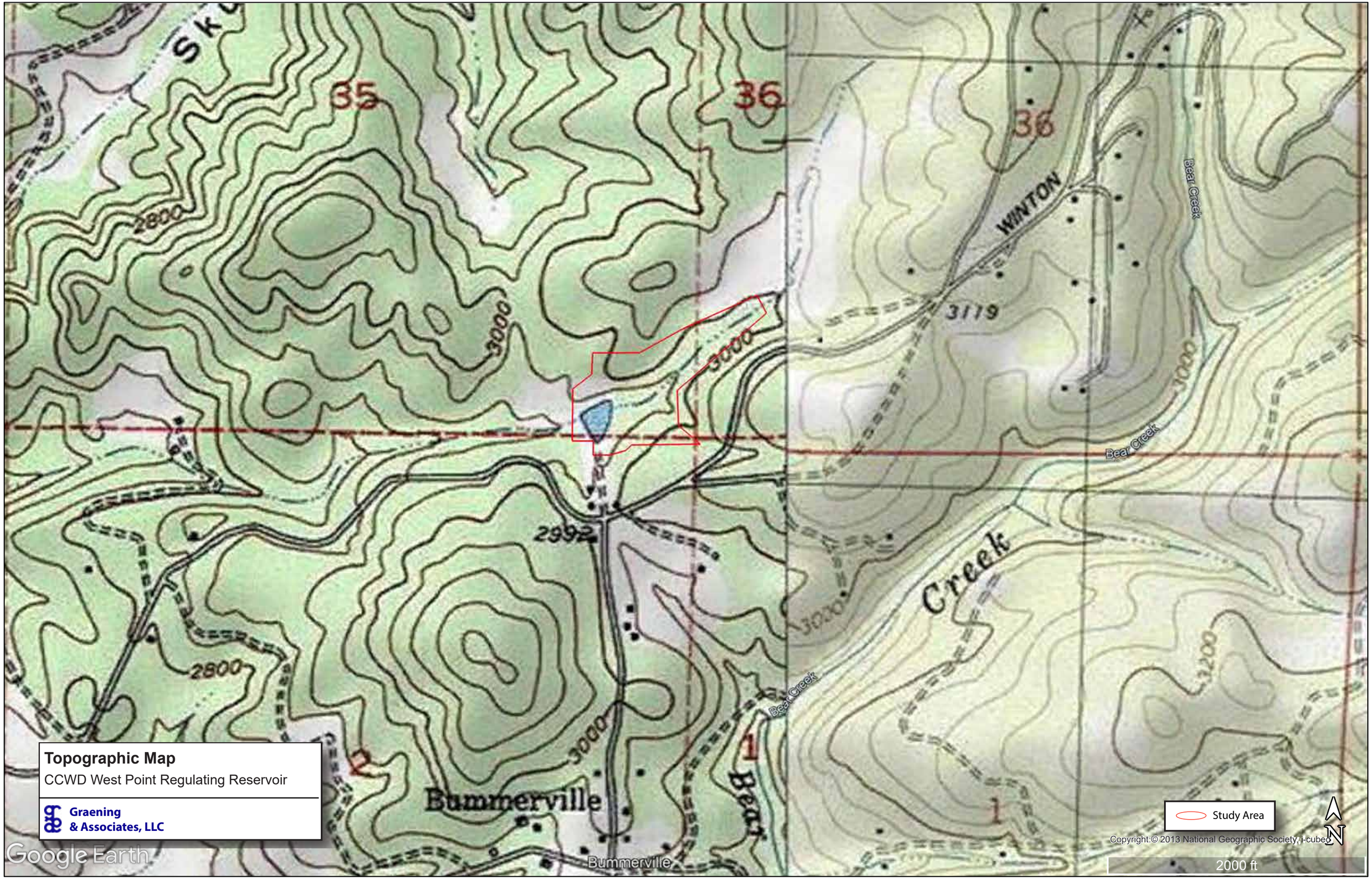


FIRST REVISED PLAN FOR INCREASING CAPACITY AT RESERVOIR

REGULATING RESERVOIR
WEST POINT

FIGURE 16

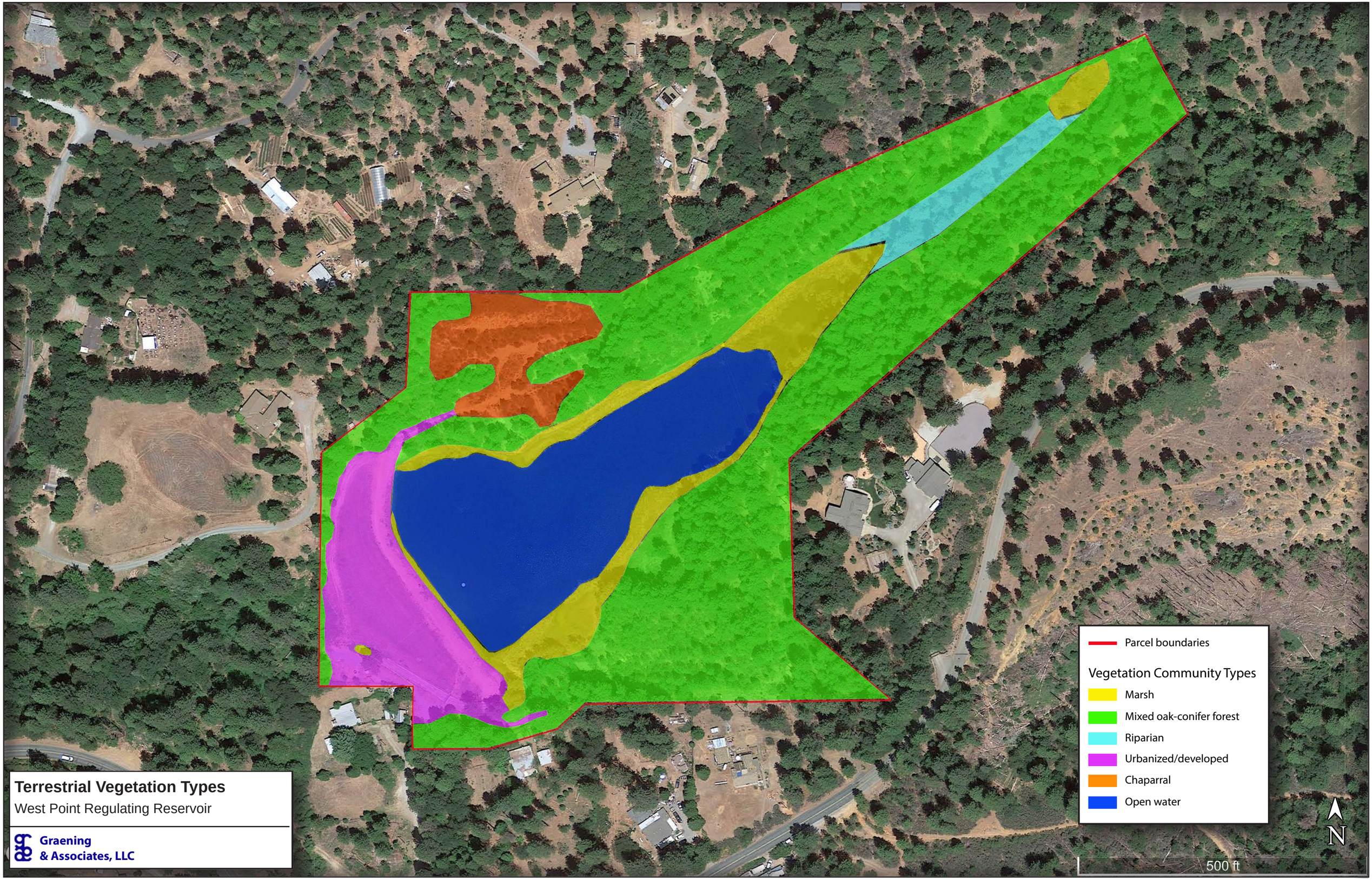
CONSULTING
KASL
ENGINEERS



Topographic Map

CCWD West Point Regulating Reservoir

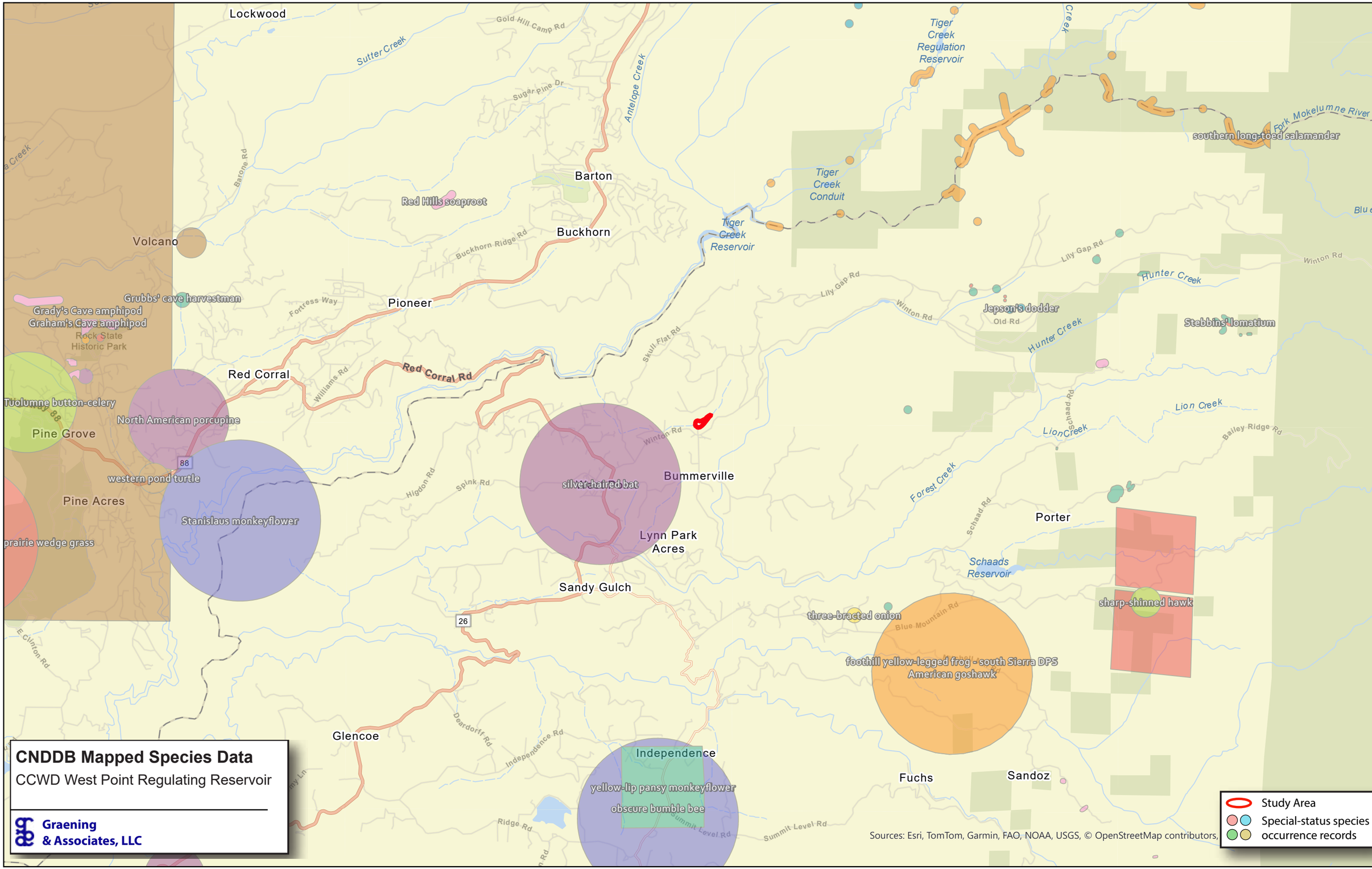
Graening & Associates, LLC

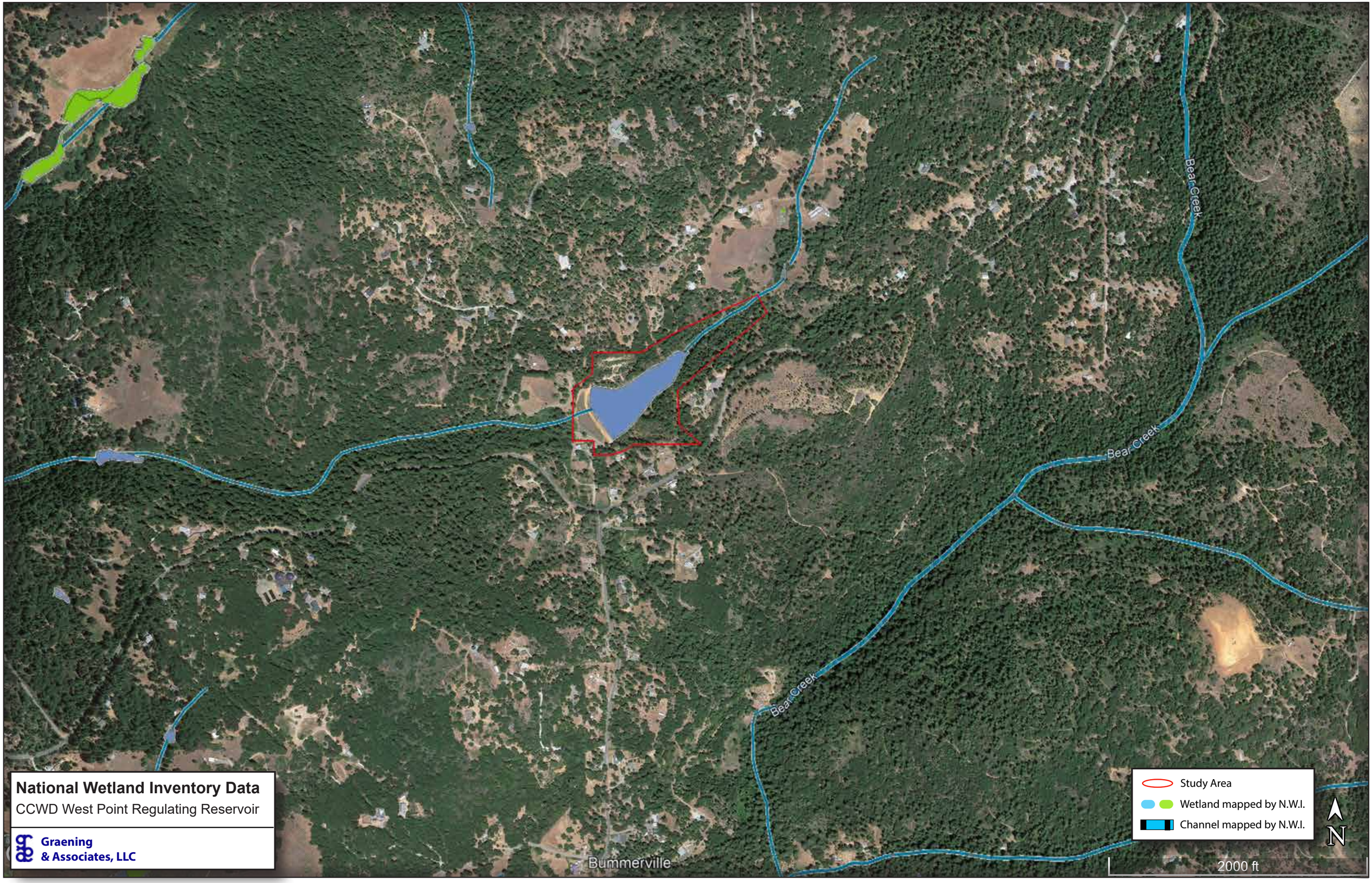


Terrestrial Vegetation Types

West Point Regulating Reservoir

Graening & Associates, LLC


CNDDB Mapped Species Data
CCWD West Point Regulating Reservoir
Graening & Associates, LLC
Study Area
Special-status species occurrence records
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors,
Lockwood
Volcano
Barton
Buckhorn
Pioneer
Red Corral
Pine Grove
Pine Acres
Bummerville
Lynn Park Acres
Sandy Gulch
Glencoe
Independence
Fuchs
Sandoz
Porter
Tiger Creek Regulation Reservoir
Tiger Creek Conduit
Tiger Creek Reservoir
Schaads Reservoir
Red Hills soaproot
Grubbs' cave harvestman
Grady's Cave amphipod
Graham's Cave amphipod
Rock State Historic Park
Tuolumne button-celery
North American porcupine
western pond turtle
Stanislaus monkeyflower
prairie wedge grass
silver-haired bat
yellow-lip pansy monkeyflower
obscure bumble bee
three-bracted onion
foothill yellow-legged frog - south Sierra DPS
American goshawk
sharp-shinned hawk
southern long-toed salamander
Jepson's dodder
Stebbins' lomatium
Sutter Creek
Antelope Creek
Hunter Creek
Lion Creek
Forest Creek
Fork Mokelumne River
Red Corral Rd
Winton Rd
Lily Gap Rd
Skull Flat Rd
Schaad Rd
Bailey Ridge Rd
Blue Mountain Rd
Summit Level Rd
Independence Rd
Deardorff Rd
Ridge Rd
Higdon Rd
Spink Rd
Williams Rd
Fortress Way
Buckhorn Ridge Rd
Gold Hill Camp Rd
Sugar Pine Dr
Barone Rd
E Clinton Rd
Old Rd
88
26

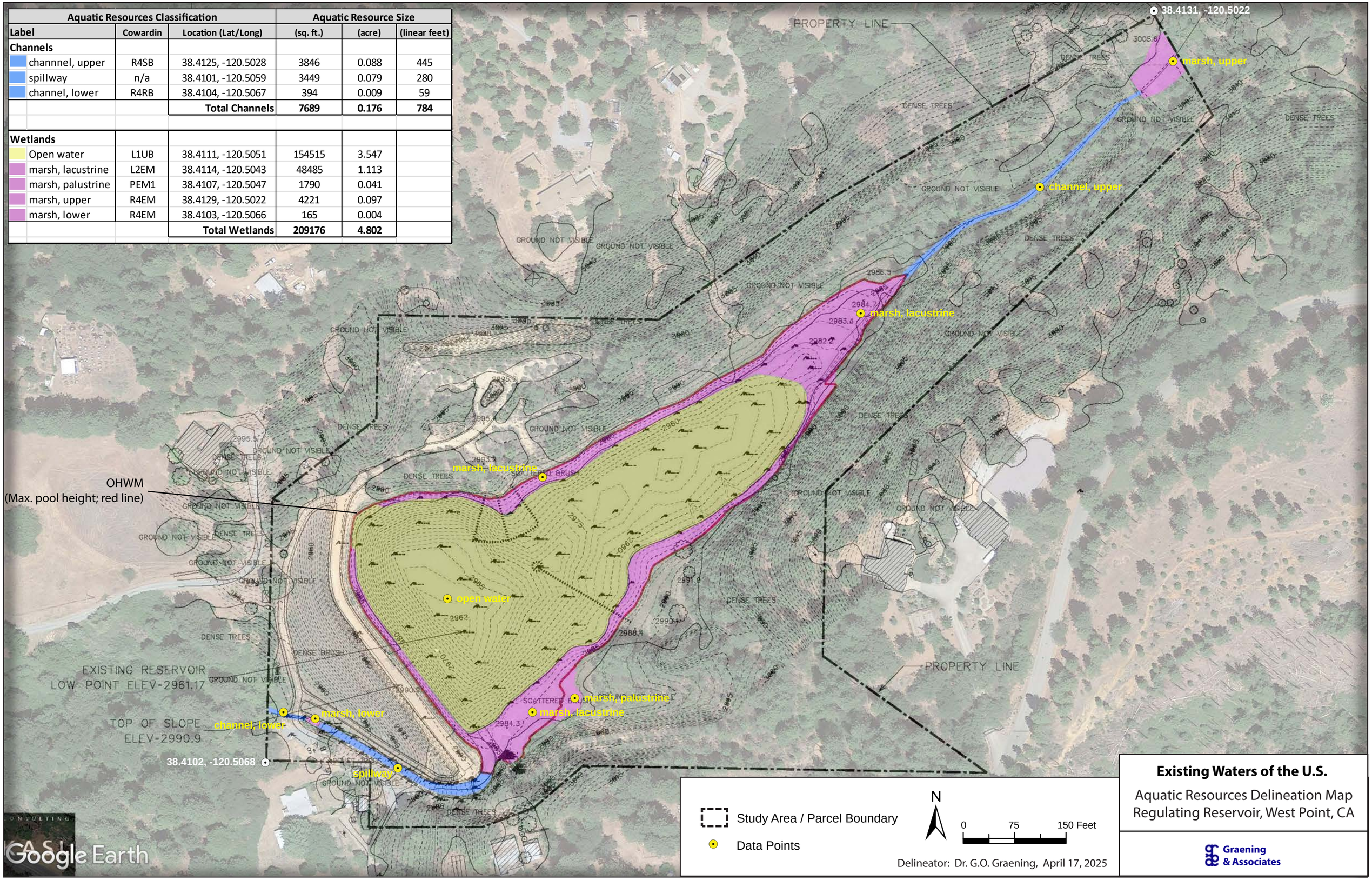


National Wetland Inventory Data

CCWD West Point Regulating Reservoir

Graening & Associates, LLC

Aquatic Resources Classification			Aquatic Resource Size		
Label	**Cowardin**	**Location (Lat/Long)**	**(sq. ft.)**	**(acre)**	**(linear feet)**
Channels					
channnel, upper	R4SB	38.4125, -120.5028	3846	0.088	445
spillway	n/a	38.4101, -120.5059	3449	0.079	280
channel, lower	R4RB	38.4104, -120.5067	394	0.009	59
		Total Channels	**7689**	**0.176**	**784**
Wetlands					
Open water	L1UB	38.4111, -120.5051	154515	3.547	
marsh, lacustrine	L2EM	38.4114, -120.5043	48485	1.113	
marsh, palustrine	PEM1	38.4107, -120.5047	1790	0.041	
marsh, upper	R4EM	38.4129, -120.5022	4221	0.097	
marsh, lower	R4EM	38.4103, -120.5066	165	0.004	
		Total Wetlands	**209176**	**4.802**	



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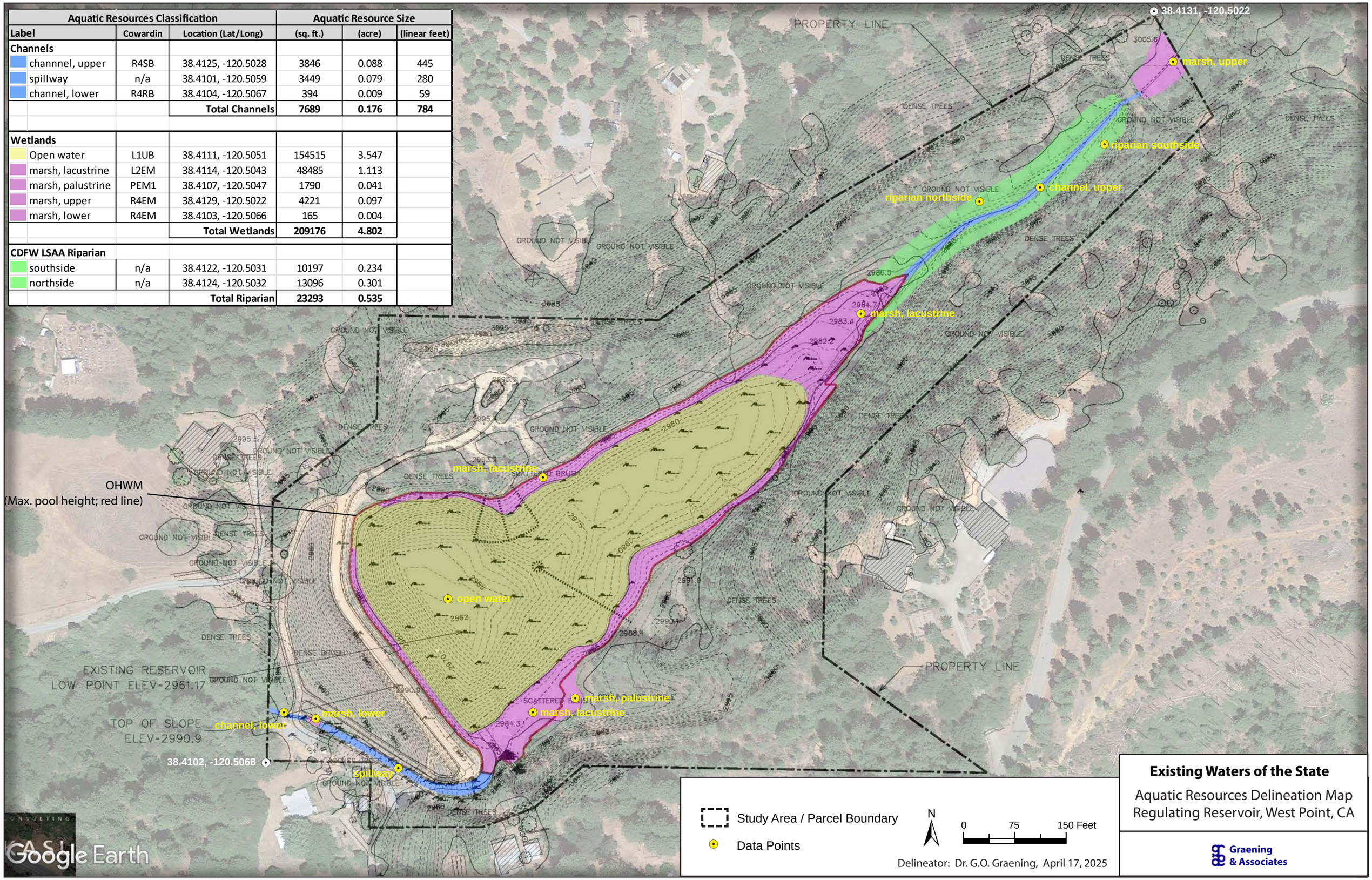
marsh, upper	R4EM	38.4129, -120.5022	4221	0.097	
marsh, lower	R4EM	38.4103, -120.5066	165	0.004	
		Total Wetlands	**209176**	**4.802**	
CDFW LSAA Riparian					
southside	n/a	38.4122, -120.5031	10197	0.234	
northside	n/a	38.4124, -120.5032	13096	0.301	
		Total Riparian	**23293**	**0.535**	



Study Area / Parcel Boundary

Data Points

N

0 75 150 Feet

Delineator: Dr. G.O. Graening, April 17, 2025

Existing Waters of the State

Aquatic Resources Delineation Map
Regulating Reservoir, West Point, CA

Graening & Associates

APPENDIX 1: USFWS SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 03/26/2025 15:44:25 UTC
Project Code: 2025-0074311
Project Name: Calaveras County Water District West Point Water Supply Drought Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2025-0074311

Project Name: Calaveras County Water District West Point Water Supply Drought Project

Project Type: Dam - Maintenance/Modification

Project Description: increases the storage capacity of the Regulating Reservoir from 50 AF to approximately 150 AF, thereby reducing
the dependance on outside water.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.411350600000006,-120.50510076612717,14z

Counties: Calaveras County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered

BIRDS

NAME	STATUS
California Spotted Owl *Strix occidentalis occidentalis* Population: Sierra Nevada No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7266	Proposed Threatened

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
Foothill Yellow-legged Frog *Rana boylii* Population: South Sierra Distinct Population Segment (South Sierra DPS) There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5133	Endangered
Western Spadefoot *Spea hammondii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: G.O. Graening
Address: 343 Carpenter Hill Road
City: Folsom
State: CA
Zip: 95630
Email ggraening@gmail.com
Phone: 9164525442

APPENDIX 2: CHECKLIST OF PLANTS DETECTED IN THE PROJECT AREA

Checklist of Plants Detected in the Study Area

Scientific Name	Common Name
Achillea spp.	yarrow
Arbutus menziesii	madrone
Arctostaphylos viscida	white-leaf manzanita
Artemesia sp.	mugwort
Avena fatua	wild oats
Baccharis pilularis	coyote brush
Berula sp.	water parsnip
Brassica sp.	mustard
Bromus sp.	brome grass
Calocedrus decurrens	Incense cedar
Carduus pycnocephalus	Italian thistle
Carex sp.	sedge
Ceanothus cuneatus	Buckbrush
Ceanothus diversifolius	pinemat
Chamaebatia foliolosa	Mountain misery
Claytonia perfoliata	miner's lettuce
Cistus salviifolius	sage-leaved cistus
Cynosurus echinatus	rough dog's-tail grass
Daucus carota	wild carrot
Dactylis glomerata	orchard grass
Epilobium tetragonum	Square-stalked Willowherb
Galium capense	Bedstraw
Geranium molle	Split leaf geranium
Hypericum perforatum	St. John's wort
Juncus effusus	corkscrew rush
Juncus tenuis	poverty rush
Lathyrus latifolius	perennial sweet pea
Lonicera sp.	honeysuckle
Lupinus bicolor	miniature lupine
Lupinus succulentus	arroyo lupine
Phalaris sp.	canarygrass
Pinus jeffreyi	Jeffrey Pine
Pinus ponderosa	ponderosa pine
Plantago lanceolata	plantain
Platanthera sp.	scentbottle
Pseudognaphalium sp.	cudweed
Quercus chrysolepis	Canyon oak
Quercus kelloggii	Black Oak
Quercus lobata	Valley oak
Quercus wislizeni	Interior Live Oak
Phoradendron sp.	mistletoe
Rubus armeniacus	Himalayan blackberry
Rumex pulchere	fiddle dock
Salix scouleriana	Scouler willow
Salix sp.	willow
Sanicula sp.	snakeroot
Scirpus sp.	bulrush
Torilis sp.	hedge parsley
Toxicodendron diversilobum	Poison Oak
Typha	cattail
Trifolium repens	clover
Verbascum thapsus	mullein
Vicia sp.	vetch

APPENDIX 3: SITE PHOTOS

Entrance to CCWD Property.

Spillway on left and stormwater culvert on right

View looking downstream of the end of the concrete spillway flowing in to a small riverine wetland, with the pipe culvert and lower channel section beyond.

View from the small riverine wetland, showing the pipe culvert discharging into the lower channel section.

Typical upland soil with annual grasses and weedy forbs.

The mowed slope of the earthen dam.

The lacustrine wetland (cattail marsh) at the beginning of the spillway.

The top of the earthen dam with lacustrine wetland (cattail marsh)

The discharge of piped water (Bear Creek diversion) into the lacustrine wetland (cattail marsh)

Palustrine wetland (Carex, Juncus dominant) transitioning into lacustrine wetland (cattail marsh)

View looking upstream of open water, lacustrine wetland (cattail marsh), and riparian vegetation (willows).

lacustrine wetland (cattail marsh) at the upper end of the reservoir, with willow scrub on the far bank, and beyond, mixed oak-conifer forest.

View of the upper channel and surrounding riparian forest

Upland vegetation

View of the upper marsh and surrounding riparian forest

View of the chaparral with interspersed confirers.

Example of upland soil (decomposed granite) in the chaparral habitat

Example of hydric soil at the boundary between the upper channel and lacustrine marsh

Example of the hydric soil at the boundary between the palustrine marsh and the lacustrine marsh

APPENDIX 4: SPECIAL-STATUS SPECIES TABLE AND POTENTIAL TO OCCUR

Special-status Species Reported by CNDDB and CNPS in the Vicinity of the Study Area

Scientific Name	Common Name	Status*	General Habitat**	Microhabitat**	Potential to Occur in Project Area?
Accipiter atricapillus	American goshawk	CSSC	REQUIRES MATURE AND OLD-GROWTH FORESTS FOR NESTING. THEY ALSO NEED ACCESS TO FORAGING AREAS, WHICH MAY INCLUDE FOREST EDGES AND OPENINGS.		No. Forests are young.
Accipiter striatus	sharp-shinned hawk	CSSC	PONDEROSA PINE, BLACK OAK, RIPARIAN DECIDUOUS, MIXED CONIFER & JEFFREY PINE HABITATS. PREFERS RIPARIAN AREAS.	NORTH-FACING SLOPES, WITH PLUCKING PERCHES ARE CRITICAL REQUIREMENTS. NESTS USUALLY WITHIN 275 FT OF WATER.	Yes. Project Area contains suitable habitat.
Allium tribracteatum	three-bracted onion	1B.2	CHAPARRAL, LOWER MONTANE CONIFEROUS FOREST, UPPER MONTANE CONIFEROUS FOREST.	VOLCANIC SLOPES AND RIDGES. 1100-2750M.	No. Project Area lacks requisite habitat.
Ambystoma macrodactylum sigillatum	southern long-toed salamander	CSSC	FOREST LITTER, RIPARIAN, AND OTHER MOIST ENVIRONMENTS		Yes. Project Area contains suitable habitat.
Arctostaphylos myrtifolia	Ione manzanita	FT	CHAPARRAL, CISMONTANE WOODLAND.	ON IONE CLAY WITH CHAPARRAL ASSOCIATES. OFTEN COMPRISES 50-80% COVER. 75-560M.	No. Project Area lacks requisite habitat.
Banksula grubbsi	Grubbs' cave harvestman	CSSC	KNOWN ONLY FROM THE TYPE LOCALITY, BLACK CHASM CAVE, VOLCANO, AMADOR COUNTY.	SPECIES IS TROGLOBITIC.	No. Project Area lacks requisite habitat.
Bombus caliginosus	obscure bumble bee	CSSC	GRASSLAND		No. Project Area lacks requisite habitat.
Bombus crotchii	Crotch's bumble bee	CP	GRASSLAND		No. Project Area lacks requisite habitat.
Botrychium crenulatum	scalloped moonwort	2B.2	BOGS AND FENS, MEADOWS, LOWER MONTANE CONIFEROUS FOREST, FRESHWATER MARSH.	MOIST MEADOWS, NEAR CREEKS. 1500-2670M.	Yes. Project Area contains suitable habitat.
Brasenia schreberi	watershield	2B.3	FRESHWATER MARSHES AND SWAMPS.	AQUATIC FROM WATER BODIES BOTH NATURAL AND ARTIFICIAL IN CALIFORNIA.	Yes. Project Area contains suitable habitat.
Calochortus clavatus var. avius	Pleasant Valley mariposa-lily	1B.2	LOWER MONTANE CONIFEROUS FOREST.	JOSEPHINE SILT LOAM AND VOLCANICALLY DERIVED SOIL; OFTEN IN ROCKY AREAS. 305-1700M.	No. Project Area lacks requisite habitat.
Chlorogalum grandiflorum	Red Hills soaproot	1B.2	CISMONTANE WOODLAND, CHAPARRAL, LOWER MONTANE CONIFEROUS FOREST.	OCCURS FREQUENTLY ON SERPENTINE OR GABBRO, BUT ALSO ON NON-ULTRAMAFIC SUBSTRATES; OFTEN ON "HISTORICALLY DISTURBED" SITE	No. Project Area lacks requisite habitat.
Corynorhinus townsendii	Townsend's big-eared bat	CSSC	THROUGHOUT CALIFORNIA IN A WIDE VARIETY OF HABITATS. MOST COMMON IN MESIC SITES.	ROOSTS IN THE OPEN, HANGING FROM WALLS & CEILINGS. ROOSTING SITES LIMITING. EXTREMELY SENSITIVE TO HUMAN DISTURBANCE.	Yes. Project Area contains suitable habitat.
Cuscuta jepsonii	Jepson's dodder	1B.2	NORTH COAST CONIFEROUS FOREST.	STREAMSIDES. 1200-2300 M.	No. Project Area is out of range.
Diplacus pulchellus	yellow-lip pansy monkeyflower	1B.2	LOWER MONTANE CONIFEROUS FOREST, MEADOWS AND SEEPS.	SANDY DECOMPOSED GRANITE SOILS AND MOIST MEADOWS; VERNALLY WET SITES. 600-2000M.	Yes. Project Area contains suitable habitat.
Emys marmorata	western pond turtle	FP	A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BE	NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYIN	Yes. Project Area contains suitable habitat.
Eryngium pinnatisectum	Tuolumne button-celery	1B.2	VERNAL POOLS, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.	VOLCANIC SOILS; VERNAL POOLS AND MESIC SITES WITHIN OTHER NATURAL COMMUNTIES. 250-450M.	No. Project Area lacks requisite habitat.
Erythranthe marmorata	Stanislaus monkeyflower	1B.1	FOUND IN MOIST AREAS, PARTICULARLY ASSOCIATED WITH BASALT OUTCROPS, SEEPS IN MEADOWS, FINE GRAVEL IN SMALL DRAINAGES, AND ALONG RIVERS		No. Project Area lacks requisite habitat.
Horkelia parryi	Parry's horkelia	1B.2	CHAPARRAL, CISMONTANE WOODLAND.	OPENINGS IN CHAPARRAL OR WOODLAND; ESPECIALLY KNOWN FROM THE IONE FORMATION IN AMADOR COUNTY. 80-1035M.	No. Project Area is out of range.
Hydroporus leechi	Leech's skyline diving beetle	CSSC	AQUATIC.		Yes. Project Area contains suitable habitat.

Lasionycteris noctivagans	silver-haired bat	CSSC	PRIMARILY A COASTAL & MONTANE FOREST DWELLER FEEDING OVER STREAMS, PONDS & OPEN BRUSHY AREAS.	ROOSTS IN HOLLOW TREES, BENEATH EXFOLIATING BARK, ABANDONED WOODPECKER HOLES & RARELY UNDER ROCKS. NEEDS DRINKING WATER.	Yes. Project Area contains suitable habitat.
Lasiurus cinereus	hoary bat	CSSC	SNAGS; FOREST HABITAT		Yes. Project Area contains suitable habitat.
Lomatium stebbinsii	Stebbins' lomatium	1B.1	LOWER MONTANE CONIFEROUS FOREST, CHAPARRAL.	THIN, GRAVELLY VOLCANIC CLAY IN OPEN YELLOW PINE FOREST. GROWS WHERE OTHER VEGETATION IS ABSENT. 1235-1850M.	No. Project Area lacks requisite habitat.
Myotis thysanodes	fringed myotis	CSSC	IN A WIDE VARIETY OF HABITATS, OPTIMAL HABITATS ARE PINYON-JUNIPER, VALLEY FOOTHILL HARDWOOD & HARDWOOD-CONIFER.	USES CAVES, MINES, BUILDINGS OR CREVICES FOR MATERNITY COLONIES AND ROOSTS.	No. Project Area lacks requisite habitat.
Myotis volans	long-legged myotis	CSSC	MOST COMMON IN WOODLAND & FOREST HABITATS ABOVE 4000 FT. TREES ARE IMPORTANT DAY ROOSTS; CAVES & MINES ARE NIGHT ROOSTS.	NURSERY COLONIES USUALLY UNDER BARK OR IN HOLLOW TREES, BUT OCCASIONALLY IN CREVICES OR BUILDINGS.	Yes. Project Area contains suitable habitat.
Rana boylii pop. 5	foothill yellow-legged frog - south Sierra DPS	FE, CE	STREAMS AND OTHER PERMANENT WATERS		Yes. Project Area contains suitable habitat.
Rana draytonii	California red-legged frog	FT	LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION.	REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.	Yes. Project Area contains suitable habitat.
Sphenopholis obtusata	prairie wedge grass	2B.2	CISMONTANE WOODLAND, MEADOWS AND SEEPS.	OPEN MOIST SITES, ALONG RIVERS AND SPRINGS, ALKALINE DESERT SEEPS. 360-2325M.	No. Project Area lacks requisite habitat.
Strix nebulosa	great gray owl	CE	RESIDENT OF MIXED CONIFER OR RED FIR FOREST HABITAT, IN OR ON EDGE OF MEADOWS.	REQUIRES LARGE DIAMETER SNAGS IN A FOREST WITH HIGH CANOPY CLOSURE, WHICH PROVIDE A COOL SUB-CANOPY MICROCLIMATE.	Yes. Project Area contains suitable habitat.
Stygobromus gradyi	Grady's Cave amphipod	CSSC	KNOWN ONLY FROM CENTRAL CALIFORNIA.	MOSTLY FOUND IN CAVES, BUT ONE COLLECTION FROM A SPRING.	No. Project Area lacks requisite habitat.
Stygobromus grahami	Graham's Cave amphipod	CSSC	KNOWN ONLY FROM CENTRAL CALIFORNIA.	FOUND ONLY IN CAVES.	No. Project Area lacks requisite habitat.
Vulpes vulpes necator pop. 2	Sierra Nevada red fox - Sierra Nevada DPS	FE, CT	VARIOUS FOREST HABITATS; PRIMARILY LIVES IN MOUNTAIN AREAS ABOVE 9,000 FEET IN ELEVATION		No. Project Area lacks requisite habitat.

*Definitions of Status Codes: FE = Federally listed as endangered; FT = Federally listed as threatened; FC = Candidate for Federal listing; CE = California State listed as endangered; CT = California State listed as threatened; CSSC = California species of special concern; CRPR (California Rare Plant Rank) List 1A = Plants presumed extinct in California by; CRPR List 1B = Plants designated rare, threatened or endangered in California and elsewhere; CRPR List 2A = Plants presumed extirpated in California but common elsewhere; CRPR 2B = Plants rare threatened or endangered in California, but more common elsewhere; CRPR 3 Review List: Plants about which more information is needed and CRPR 4 = Watch List: Plants of limited distribution. CRPR Threat Ranks: 0.1 = seriously threatened in California; S2 = moderately threatened in California; S3 = not very threatened in California.

**Copied verbatim from CNDDB, unless otherwise noted.

***Definitions of Occurrence Probability Rankings:

- Present: Species was observed during site visit. Or
- Present: Species has been previously documented to occur within the Study Area.
- Potential to occur: Suitable habitat present.
- Low potential to occur: Marginal habitat is present.
- Absent: No habitat onsite.

APPENDIX B
TRIBAL CONSULTATION RESOURCES

Natural Investigations Company

March 7, 2025

PROJECT INFORMATION AND COMMENT REQUEST LETTER

TO: Sara Dutschke, Chairperson, Ione Band of Miwok Indians;
Jereme Dutschke, Cultural Resources Coordinator, Ione Band of Miwok Indians;
Jessalynn Pastran, Chairperson, Buena Vista Rancheria of Me-Wuk Indians;
Jesse Galvan, THPO, Buena Vista Rancheria of Me-Wuk Indians;
Arian Hart, Tribal Chairman, Susanville Indian Rancheria;
Darrel Cruz, Cultural Resources Department, Washoe Tribe of Nevada and California;
Tina Goodwin, Chairperson, Pakan'yani Maidu of Strawberry Valley Rancheria;
Adam Lewis, Tribal Cultural Resources Assistant, Calaveras Band of Mi-Wuk Indians;
Debra Grimes, Cultural Resources Specialist, Calaveras Band of Mi-Wuk Indians;
Gloria Grimes, Chairperson, Calaveras Band of Mi-Wuk Indians;
Stephanie Suess, Community & Resources Development Director, Chicken Ranch Rancheria of Me-Wuk Indians;
Monica Fox, Tribal Administrator, Chicken Ranch Rancheria of Me-Wuk Indians;
Cynthia Reyes, Cultural Manager, Chicken Ranch Rancheria of Me-Wuk Indians;
Joanna Portillo-Hsu, Environmental & Planning Manager, Chicken Ranch Rancheria of Me-Wuk Indians;
Cosme Valdez, Chairperson, Nashville Enterprise Miwok-Maidu-Nishinam Tribe;
Leland Valdez, Cultural Resources, Nashville Enterprise Miwok-Maidu-Nishinam Tribe;
Adam Dalton, Chairperson, Jackson Rancheria Band of Miwuk Indians;
Rolland Fillmore, Cultural Preservation Representative, Jackson Rancheria Band of Miwuk Indians.

EMAIL: Cindy@naturalinvestigations.com

PHONE: (916) 765-9381

PROPOSED PROJECT: West Point Regulating Reservoir Project in Calaveras County, California

USGS QUAD: West Point 7.5-minute Quadrangles: Sections 35 & 36 of Township 7 north, Range 13 east of the Mount Diablo Base and Meridian

ACREAGE: ~7

Natural Investigations Company, Inc. (Natural Investigations) was retained to provide cultural resource services in support of the West Point Regulating Reservoir Project in Calaveras County, California. The Area of Potential Effect (APE) can be found on the attached Figure 1.

Project Description: The Applicant, Calaveras County Water District, proposes to increase the West Point Regulating Reservoir capacity to 150-acre feet, while adding a floating screen outlet to prevent sediment and debris from entering the reservoir.

Sacred Lands File Search: The Native American Heritage Commission (NAHC) returned the results of a Sacred Lands File search conducted for the Project, stating that records were negative for the presence of Native American cultural resources in the project vicinity. The NAHC recommended that we contact you for additional information on the potential for Native American cultural resources within or near the Project.

CHRIS File Search: Natural Investigations requested a records search of the California Historical Resources Information System (CHRIS) by the Central California Information Center to identify any previously recorded Indigenous or historic cultural resources and previously conducted surveys in the APE. The CHRIS shows 4 previous studies conducted between 1992 – 2003 within the APE, and 12 previous studies have been conducted between 1985 – 2023 within a 0.50-mile radius of the project, but outside the APE. The CHRIS further identified one historic resource (water conveyance ditch) within the APE and seventeen additional resources (15 historic era resources: 12 mining features, 2-homesteads remnants, 2-water conveyance ditches, 1-bridge and two Indigenous resources: lithic scatter and BRM) within a 0.50-mile radius of the project, but outside the APE.

We would greatly appreciate any comments that you may have on potential cultural resources in the area and invite you to raise any other concerns relating to the Project should you have them. All information provided regarding specific sites or Native American cultural resources will remain confidential. Please feel free to contact me by phone or email. We would greatly appreciate a response at your earliest convenience.

Thank you for your assistance.

Respectfully submitted,

Cindy Arrington, M.S., RPA
Administrator
916-765-9381
Cindy@naturalinvestigations.com

Attachments: Figure 1: Project Location Map

From: Adam Lewis
To: Cindy Arrington
Cc: consultation@ionemiwok.net; jereme@ionemiwok.net; Jessalynn@bvtribe.com; Jesse@bvtribe.com; ahart@sir-nsn.gov; darrel.cruz@washoetribe.us; tinagoodwin@washoetanf.org; calaverasband.miwukindians@gmail.com; calaverasmiwukpreservation@gmail.com; ssuess@crtribal.com; mfox@crbtribal.com; creyes@crtribal.com; jportillo@crtribal.com; valdezcome@comcast.net; adalton@jacksoncasino.com
Subject: Re: Tribal Outreach for Calaveras County - Project 2114
Date: Friday, March 7, 2025 1:42:07 PM

Thank you for the outrage. West point is all high sensitivity, every stream course springhead and waterway have cultural resources adjacent, and 2. This reservoir is less than a 1/2 mile from our reservation, where we currently are located. Frank Fisher allotment.
We know many things throughout the area. All are not in sacred lands files. Depending on what you're trying to do there, let's further engage.

On Fri, Mar 7, 2025, 9:32 AM Cindy Arrington <cindy@naturalinvestigations.com> wrote:

> Greetings. Natural Investigations Company was retained to provide cultural resource services in support of the West Point Regulating Reservoir Project in Calaveras County, California. Attached to this email is a project information letter, project location, map, and the NAHC SLF search results. Should you have any questions, please do not hesitate to contact me.
>
> Kindest regards,
>
> Cindy Arrington, M.S., RPA
>
> Administrator
>
> Natural Investigations Co., Inc.
>
> 3104 O Street, #221
>
> Sacramento, CA 95816
>
> Mobile: (916) 765-9381
> Email: cindy@naturalinvestigations.com
>
> SB(Micro) Certified

APPENDIX C
GEOTECHNICAL REPORT

Draft 30% Design Geotechnical Report

West Point Water Supply Drought Project – Phase 1
West Point, California

Crawford File: 24-1309.1
August 11, 2025

Prepared by:

Crawford & Associates, Inc.
4701 Freeport Boulevard
Sacramento, CA 95822

Prepared for:

Black Water Consulting Engineers, Inc.
602 Lyell Dr
Modesto, CA 95356

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services
Sacramento
Chico
Eureka
Modesto
Santa Rosa
Seattle
Ukiah

August 11, 2025
Crawford File: 24-1309.1

Jesse Franco, PE
Black Water Consulting Engineers, Inc.
602 Lyell Drive
Modesto, CA95356

Subject: **Draft 30% Design Geotechnical Report**
West Point Water Supply Drought Project – Phase 1
West Point, California

Crawford & Associates, Inc. (Crawford) prepared this Draft Geotechnical Report for the West Point Water Supply Drought Project Phase 1 project in West Point, California. Crawford prepared this report in accordance with our January 24, 2025 agreement. This draft report is provided for your review. We expect to receive comments from the California Division of Safety of Dams. Once comments are received, we will incorporate them into a final report.

Thank you for the opportunity to be part of your design team. Please call if you have questions or require additional information.

Sincerely,

Crawford & Associates, Inc.,

Reviewed by:

Maria Ayala Johnson, EIT
Project Engineer II

Ben Crawford, PE, GE
Principal

Clay Worley, PE (NV, LA)
Project Manager

Table Of Contents

1 INTRODUCTION 1
1.1 PURPOSE 1
1.2 SCOPE OF SERVICES 1
1.3 PROJECT DESCRIPTION 1
1.4 SITE DESCRIPTION 1
2 GEOLOGIC CONDITIONS 2
2.1 SITE GEOLOGY 2
3 GEOTECHNICAL EXPLORATION 2
4 SURFACE AND SUBSURFACE CONDITIONS 3
4.1 SUBSURFACE MATERIALS 3
4.2 GROUNDWATER 4
5 LABORATORY TESTING 4
6 BORROW MATERIAL 5
7 SEISMIC INFORMATION 5
7.1 GROUND MOTION 5
7.2 FAULTS AND SEISMIC ACTIVITY 5
7.3 LIQUEFACTION POTENTIAL 5
8 GEOTECHNICAL ANALYSES 5
8.1 MODEL STRATIGRAPHY, PARAMETERS, AND CONDITIONS 5
8.1.1 SLOPE STABILITY AND SEEPAGE PARAMETERS 5
8.1.2 END OF CONSTRUCTION CONDITION 6
8.1.3 STEADY-STATE CONDITION 6
8.1.4 PSUEDO-STATIC CONDITION 7
8.1.5 RAPID DRAWDOWN CONDITION 7
8.2 SLOPE STABILITY ANALYSES 7
8.3 SEEPAGE ANALYSIS 8
9 CONCLUSIONS AND RECOMMENDATIONS 8
10 LIMITATIONS 9

Table Of Contents

List of Tables

Table 1: Subsurface Exploration Summary 3
Table 2: Groundwater Data 4
Table 3: Subsurface Exploration Summary 3
Table 4: Hand-Auger Soil Classifications 7
Table 5: Laboratory Test Result Summary 8

Appendix A

Figure 1: Vicinity Map
Figure 2: Exploration Map
Figure 3: Geologic Map
Figure 4: Fault Map

Appendix B

Exploration Details
Boring Log Legend
2025 Crawford Boring Logs

Appendix C

2025 Laboratory Test Results

Appendix D

Borrow Characterization

Appendix E

Permeability References

1 INTRODUCTION

1.1 PURPOSE

Crawford & Associates, Inc. (Crawford) prepared this draft 30% Design Geotechnical Report for Calaveras County Water District's (CCWD) West Point Water Supply Drought Project in West Point, CA. We prepared this report to provide geotechnical data, conclusions, and recommendations based on the current understanding of the proposed project elements.

The purpose of this report is to identify subsurface geotechnical and material conditions, provide results of slope stability and seepage analyses and to characterize potential borrow material.

This report will be submitted to the California Division of Safety of Dams (DSOD) as part of Black Water Consulting Engineers Inc.'s (Black Water) 30% design package. We understand DSOD will provide comments to be addressed to move forward to 60% design. We understand 90% design will be covered in Phase 2 of the project.

1.2 SCOPE OF SERVICES

To prepare this report Crawford:

- Discussed the project Black Water, CCWD, and DSOD;
- Reviewed geologic, soils, and seismic maps pertaining to the site;
- Reviewed historical geotechnical documents and design plans;
- Reviewed topographic survey data provided by Black Water on March 7, 2025;
- Reviewed preliminary plan set developed by Black Water dated April 20205;
- Drilled, logged, and sampled nine exploratory borings between May 14 and 27, 2025.
- Performed laboratory testing on representative soil sample from the exploratory borings;
- Performed geotechnical engineering evaluation and analyses to develop the recommendations contained in this report.

Limitations of this study are discussed in the final section of this report.

1.3 PROJECT DESCRIPTION

The West Point Drought Water Supply project will involve modifications to the existing 35-foot high, 500-foot-long dam and reservoir to increase water storage capacity and enhance system performance. The proposed improvements include raising and enlarging the earthen dam towards the upstream side of the existing dam and excavating within the reservoir basin to increase capacity from 50 acre-feet (AF) to approximately 150 AF. The dam embankment will be raised from elevation 2,991 to 3,003. The proposed high-water level within the reservoir will be elevation 2,999. Upstream and downstream slopes will be 3 horizontal to 1 vertical (3H:1V). The low point in the reservoir will be unchanged at approximately elevation 2,961. The existing spillway will be redesigned and reconstructed. The conceptual plan for the spillway is a reinforced concrete open channel spillway measuring 3 feet deep by 10 feet wide.

1.4 SITE DESCRIPTION

The West Point Regulating Reservoir is located in Calaveras County, California, and is about 1.3 miles northeast of State Route 26 and the town of West Point. The site coordinates for the center of the project site are approximately 38.410591° latitude and -120.506338° longitude via Google Earth. A Vicinity Map is included as Figure 1 of Appendix A. An Exploration Map of our boring locations is included as Figures 2A, 2B, and 2C in Appendix A.

The existing dam structure has a top-of-dam elevation of 2991 feet, upstream slope inclination is approximately 4H:1V and downstream slope inclination is approximately 3H:1V. The dam height is approximately 35 feet. Vegetation observed at the site primarily consisted of grass, shrubs, dried grass shrubs on the waterside slopes of the embankment, and mature trees.

2 GEOLOGIC CONDITIONS

2.1 SITE GEOLOGY

The project site is located within the foothills of the Sierra Nevada Geomorphic Province[1] of California. The Sierra Nevada has a general northwest topographic trend and is on the order of 690 km long and 64-129 km wide. The mountain ranges of the Sierra Nevada were created roughly 120 to 130 million years ago when sediments as thick as 9,200 m, along with volcanic rocks, were buckled and warped, resulting in a series of low mountain ranges. The roots of these mountain ranges were then intruded by granitic rock.

The Sierra Nevada ranges were subsequently tilted upward as a result of faulting along the east edge of the ranges. In the higher elevations of the Sierra Nevada, much of the sedimentary material has been eroded to extensively expose the granitic rock. Older rocks that remain have been metamorphosed and are exposed in the foothills of the Sierra Nevada.

From our review of published regional geologic maps[2], the site is underlain by Mesozoic granitic rocks (Mzg) composed predominantly of granite to granodiorite.

A geologic map is included as Figure 3 in Appendix A.

3 GEOTECHNICAL EXPLORATION

Crawford completed a subsurface exploration at the project site between May 14 and May 16, 2025, to characterize the subsurface conditions and obtain samples for laboratory testing. Terra-Ex was subcontracted by Crawford to complete the borings under the supervision of a Crawford geologist. The exploration included 5 borings to characterize the dam and foundation materials and 2 hand-auger borings to characterize potential borrow material at the site. Additionally, Crawford completed two hand-augers on May 16 and May 27, 2025 at offsite locations to characterize potential borrow material. A summary of the subsurface explorations is provided in Table 1. Refer to Appendix B for exploration details including sampling, logging, penetration resistance, closure, and determination of locations and elevations. The boring log legend and boring logs are also included in Appendix B.

[1] California Geologic Survey (2002), *California Geomorphic Province*, Note 36.
[2] Wagner, D.L., Jennings, C.W., Bedrossian, T.L. and Bortugno, E.J.; 1981, California Division of Mines and Geology; Geologic Map of the Sacramento quadrangle, California; Regional Geologic Map Series, Map No. 1A, 1:250,000.

Table 1: Subsurface Exploration Summary

Crawford Exploratory Borings							
Boring ID[1]	Completion Date	Location	Drill Rig Type/ Drilling Equipment Type	Hammer Type	Hammer Efficiency (%)	Approx. Ground Surface Elevation (ft)	Boring Depth (ft)
A-25-001	05/14/2025	Downstream Toe	D-70 (Track Mounted)	Auto	92.2[1]	2958.6	23.0
R-25-003	05/16/2025	Dam Crest				2990.6	76.0
A-25-005	05/16/2025	Dam Crest				2989.2	50.0
A-25-006	05/16/2025	Dam Crest				2991.0	42.5
A-25-007	05/16/2025	Downstream Toe				2964.3	16.5
HA-25-002	05/15/2025	South Side of Reservoir[2]	Hand Auger	N/A	N/A	2989.3	10.0
HA-25-004	05/15/2025	Southwest Side of Reservoir[2]				3002.1	1.0
HA-25-008	05/27/2025	Off-site[2]				N/A	3.8
HA-25-009	05/16/25	Off-site[2]				N/A	5.0

[1] A hammer energy calibration test was not performed specifically for this project/site; however, a previous hammer energy testing result, provided by Geo-Ex Subsurface Exploration, found the hammer to have an energy efficiency of 92.2%.
[2]For potential borrow source

4 SURFACE AND SUBSURFACE CONDITIONS

4.1 SUBSURFACE MATERIALS

In general, the materials encountered in our 2025 borings completed for this study are considered consistent with published geologic mapping and are divided into three general units.

Unit 1 – Existing Dam (Borings R-25-03, A-25-005, and A-25-006) - Materials of this unit generally consisted of medium dense to dense clayey sand with interbedded layers of stiff to hard lean clay and sandy lean clay. This unit extends to approximately elevation 260. A layer of loose clayey sand was encountered in Boring R-25-003 from elevation 2,971 ft to 2,967.

Unit 2 – Dam Foundation and Dowstream Blanket (Borings A-25-001, R-25-003, A-25-005, A-25-006, and A25-007) – This unit was encountered below Unit 1 and from the ground surface in A-25-001 and A-25-007. Materials of this unit are similar to Unit 1 generally consisting of loose to dense clayey sand and hard sandy lean clay to approximately elevation 250.

Unit 3 – Igneous Rock (Borings A-25-001, R-25-003, A-25-005, A-25-006, and A25-007) The materials of this unit are generally very soft to soft decomposed igneous rock, primarily granite, to the terminal elevations in borings A-25-005, A-25-006, and A-25-007 between elevation 2,949 and 2,939

and to elevation 2,920 in boring R-25-003. Below elevation 2,920 in R-25-003, moderately weathered, intensely fractured, very hard igneous rock was encountered to the terminal elevation of 2,915. A layer of slightly weathered to fresh, very hard, moderately fractured igneous rock was encountered from elevation 2,946 to the terminal elevation of 2,936 in boring A-25-001.

4.2 GROUNDWATER

At the time of our field exploration, free groundwater was encountered and measured in four of the five drilled borings. Groundwater was not observed in boring R-25-003 due to the use of mud-rotary drilling. Table 2 summarizes the ground water observations. The borings were backfilled before reliable "static" groundwater level measurements could be taken (24 hours or more is commonly needed to define "static" groundwater level).

Table 2: Groundwater Data

Boring I.D.	Date of Reading	Groundwater Depth (ft)	Groundwater Elevation
A-25-001	05/14/25	9.8	2948.8
A-25-005	05/16/25	35.6	2953.6
A-25-006	05/16/25	39.5	2951.5
A-25-007	05/16/25	16.4	2947.9

Groundwater levels can fluctuate due to changes in precipitation, seasonal fluctuations, water elevation in the reservoir, and other site factors. Depth to groundwater should be determined immediately prior to work by those responsible for construction.

5 LABORATORY TESTING

The following laboratory tests were completed on representative soil samples obtained from the exploratory borings:

- Atterberg Limits (ASTM D4318);
- Moisture Content (ASTM D2216);
- No. 200 Sieve Wash (ASTM D1140);
- Particle Size Analysis (ASTM D6913);
- Point Load Index (ASTM D5731);
- Triaxial Consolidated Undrained (ASTM D4767);
- Unit Weight (ASTM D7263).
- Moisture Content (ASTM D2216);
- Compaction (ASTM 1557)
- Remolded Triaxial Consolidated Undrained (ASTM D4767)

The laboratory test results are provided in Appendix C.

6 BORROW MATERIAL

To help evaluate the acceptability of the on-site and off-site material as a potential borrow source, we performed 4 hand-augers. Please see Appendix D for our borrow material characterization.

7 SEISMIC INFORMATION

7.1 GROUND MOTION

Based on published mapping, and our exploration, igneous rock (granite) is shallow, and recommend a Site Class C for the site. Per the United States Geological Survey (USGS) 2% in 50 years deaggregation hazard tool[3], the Peak Ground Acceleration (PGA) for the project site is 0.22g. However, we understand DSOD may require a minimum design PGA of 0.25g. Additional spectral acceleration values were also obtained for use in determining the horizontal seismic coefficient.

7.2 FAULTS AND SEISMIC ACTIVITY

The site is not mapped within an Alquist-Priolo Earthquake Fault Zone[4]. Based on the California Geologic Survey[5] (CGS) fault data, the nearest active fault (i.e., activity within about the last 11,000 to 15,000 years) is the West Tahoe-Dollar Point fault zone, mapped approximately 38.4 miles northeast of the proposed project site. We present a Fault Map in Appendix A on Figure 4.

7.3 LIQUEFACTION POTENTIAL

Soil liquefaction can occur when saturated, relatively loose sand and specific soft, fine-grained saturated soils (typically within the upper 50 feet) are subject to ground shaking strong enough to create soil particle separation that results from increased pore pressure. This separation and subsequent pore pressure dissipation can lead to decreased soil shear strength and settlement. Liquefaction is known to occur in soils ranging from low-plasticity silts to gravels. However, soil most susceptible to liquefaction are clean sands to silty sands and non-plastic silts. Granular soils with SPT blow count $(N1)_{60} \geq 30$, rock, and most clay soil are not liquefiable. Liquefaction susceptibility of a soil deposit is a function of the soil grain size, relative density, percent fines, plasticity of fines, degree of saturation, age of deposit, and earthquake ground motion. Based on the groundwater depth and the predominantly clayey layers, dense granular layers, and rock encountered in the borings completed for this study along with the site being in a low seismic zone, the potential for liquefaction at the site is low.

8 GEOTECHNICAL ANALYSES

8.1 MODEL STRATIGRAPHY, PARAMETERS, AND CONDITIONS

8.1.1 SLOPE STABILITY AND SEEPAGE PARAMETERS

Soil parameters were developed from laboratory test data and supplemented by correlations using blow count data from the borings and field test data. A summary of the in-situ stratigraphy and strength parameters is presented in Table 3 below.

[3] https://earthquake.usgs.gov/hazards/interactive/
[4] https://maps.conservation.ca.gov/cgs/informationwarehouse/eqzapp/ accessed July 22, 2025
[5] United States Geologic Survey, https://usgs.maps.arcgis.com/apps/webappviewer, accessed January 2, 2023.

Table 3: Summary of Site Stratigraphy and Parameters

Unit	USCS Group	Elevation (NAVD 88)	ϕ total/effective (degrees)	c total/effective (psf)	γ (pcf)
1	SC/CL	2,992 to 2,960	20/33	500/300	124
2	SC/CL	2,960 to 2,950	22/36	450/150	124
3	Igneous Rock	2,950 to 2,920	45	0	140
4	New Fill - SC	3,003 to 2,961	22/35	300/200	126

Seepage parameters were based on permeabilities presented in Table A2-30 of the *Guidance Document for Geotechnical Analyses: Urban Levee Evaluations Project (ULE)*, developed by URS Corporation for the California Department of Water Resources (URS, 2015)[6], for the SC/CL materials. For the Igneous Rock, we used the results of a permeability test performed for a previous exploration at the site. Table 4 summarized the permeability parameters used in our analyses. Table A2-30 and the previous permeability results are presented in Appendix E.

Table 4: Summary of Permeability Parameters

Unit	USCS Group	Elevation (NAVD 88)	K_v, (cm/sec)	K_h/K_v	K_h, (cm/sec)	K_h, (ft/sec)
1	SC/CL	2,992 to 2,960	5×10^{-5}	0.25	2×10^{-4}	6.5×10^{-6}
2	SC/CL	2,960 to 2,950	5×10^{-5}	0.25	2×10^{-4}	6.5×10^{-6}
3	Igneous Rock	2,950 to 2,920	5.6×10^{-4}	0.25	2.2×10^{-3}	7.2×10^{-5}
4	New Fill - SC	3,003 to 2,961	5×10^{-5}	0.25	2×10^{-4}	6.5×10^{-6}

8.1.2 END OF CONSTRUCTION CONDITION

End of construction conditions were modeled using an empty reservoir and total strength conditions with failure surfaces towards the upstream side and downstream side of the dam. A resulting factor of safety of 1.5 or greater is acceptable.

8.1.3 STEADY-STATE CONDITION

Steady-state conditions occur when the water level and dam are in place for a long period of time and the seepage pressures are no longer changing over time (steady-state condition). Steady-state conditions were modeled with the water level at the design high-water level at elevation 2,999. We used seepage analysis software to develop the in-situ steady-state pore pressures and the phreatic surface and used drained (effective) strength parameters to evaluate steady-state stability during a prolonged high-water event. Failure surfaces were modeled to the downstream side of the dam. A resulting factor of safety of 1.5 or greater is acceptable.

[6] URS Corporation, Guidance Document for Geotechnical Analyses: Urban Levee Evaluations Project, April 2015.

8.1.4 PSUEDO-STATIC CONDITION

To establish the horizontal seismic coefficient (k_h), we utilized the Simplified Seismic Slope Displacement method outlined by Bray and Travasarou (2009)[7] with an assumed 12 inches of slope displacement and the spectral accelerations from the USGS deaggregation hazard tool. The resulting k_h was 0.05. Although our experience shows that 12 inches of displacement is in the low to moderate risk range for similar projects, if this displacement assumption is not acceptable, Crawford should be notified to perform additional stability analyses. Psuedo-static conditions were modeled for all analyses described in Sections 8.1.2 and 8.1.3. A resulting factor of safety of 1.1 or greater is acceptable.

8.1.5 RAPID DRAWDOWN CONDITION

Rapid drawdown was modeled assuming the rapid drawdown process occurs instantaneously. The piezometric surface follows the upstream slope of the dam and remains unchanged in the dam. In general, this approach is conservative and represents the worst-case scenario. The analysis was performed using effective strength parameters. A resulting factor of safety of 1.25 is acceptable.

8.2 SLOPE STABILITY ANALYSES

The cross-section location was selected based on our interpretation of the critical cross-section for slope stability and seepage. The cross-section is based on existing topographic data furnished by Black Water and Section A from Black Water's preliminary grading plan. The approximate location of the cross-section analyzed is shown on Figure 2A in Appendix A. The deep-seated stability of the pond embankment was analyzed using Spencer's Method of Slices using circular failure surfaces. Spencer's Method satisfies both force and moment equilibrium of the failure mass including interslice forces. The analyses were performed using SLOPE/W and SEEP/W by GeoStudio, Version 24.2.1. The "Entry and Exit" search routine was used to determine the slip surface with the lowest factor of safety. A summary of the slope stability analyses is tabulated in Table 5. The results of our analyses are presented graphically in Figures 1 through 8.

Table 5: Stability Analyses Results

Loading Condition	Direction of Analysis	Factor of Safety		Meets Criterion?	Figure
		Result	Criterion		
End of Construction	Downstream	1.99	1.5	Yes	1
End of Construction	Upstream	2.08	1.5	Yes	2
End of Construction - PS	Downstream	1.72	1.1	Yes	3
End of Construction – PS	Upstream	1.78	1.1	Yes	4
Steady State	Downstream	1.88	1.5	Yes	5
Steady State – PS	Downstream	1.57	1.1	Yes	6
Rapid Drawdown	Upstream	1.62	1.25	Yes	7

[7] Pseudostatic Seismic Coefficient Based on the Bray and Travasarou (2009) Simplified Seismic Slope Displacement Methodology

8.3 SEEPAGE ANALYSIS

We extended our seepage model 500 feet beyond the survey limits to more accurately estimate seepage. SEEP/W was used to analyze dam under seepage and phreatic surface breakout. Phreatic surface breakout is when phreatic surface daylights on the upstream slope of the dam under steady-state seepage conditions. In our analysis, the phreatic surface daylights on the downstream slope approximately 10 feet above the levee toe. This could indicate a potential for through seepage distress. Through seepage distress can reduce soil strength of a dam embankment causing sloughing and erosion of the downstream surface. However, plastic soils such as the clayey sands and sandy clays in the dam are not as susceptible to surface erosion as low plasticity soils such as clean sands. This phenomenon will need to be studied further as design progresses. Should it be determined that levee through seepage is a concern there are various solutions that can considered to mitigate the effects of through seepage.

Under seepage was analyzed by determining the exit gradient at the dam toe. The exit gradient is the total head drop across the downstream blanket layer divided by the blanket thickness. The head drop at the dam toe from the SEEP/W analyses is 5.1 feet. The blanket in the SEEP/W model is 8.3 feet. This results in an exit gradient of 0.61. The results are printed graphically in Figure 9. Boring A-25-001 near the dam toe shows a blanket thickness of approximately 12 feet. Using this blanket thickness, the exit gradient is 0.43.

9 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our laboratory testing, field exploration, and geotechnical analyses, the proposed dam enlargement is stable. Seepage may be a concern and should be further investigated for the 60% design.

Our recommendations for additional work for 60% design include:

- Perform permeability testing on the in-situ materials to use in seepage analysis. Rerun seepage analysis with site-specific permeability values. Determine if through seepage is a concern and provide alternatives to mitigate.
- Provide recommendations for the proposed spillway once it is more well defined.
- Provide site preparation and construction recommendations.

Settlement analysis of the proposed dam enlargement was not performed as we did not perform borings on the upstream side of the dam and do not have relevant data. However, we do not expect settlement to be a significant concern due to the small zone of compressible material at other areas at the site. Borrow material characterization needs to be further studied. We understand funding for additional exploration will not be available until Phase 2 (90% design) of the project. Our recommendations for additional work for 90% design include:

- Perform test pits in the reservoir and at off-site locations to further characterize borrow materials.
- Perform borings near the upstream dam toe to acquire data for settlement analysis and determine blanket thickness.
- Perform hand augers downstream from the dam to confirm blanket thickness is adequate to resist underseepage.
- Provide recommendations for final dam enlargement configuration.

10 LIMITATIONS

Crawford performed services in accordance with generally accepted geotechnical engineering principles and practices currently used in this area. This report is intended to assist Black Water for the West Point Drought Water Supply – Phase 1 in West Point, CA. Do not use this report for different locations and/or projects without the written consent of Crawford. Where referenced, we used ASTM and Caltrans as a general (not strict) *guideline* only.

Crawford based this report on the current site conditions. We assume the soil and groundwater conditions are representative of the subsurface conditions on the site. Actual conditions between explorations will vary along the project alignment segments.

Our scope did not include evaluation of on-site hazardous materials.

Logs of our explorations are found in Appendix B**. The lines designating the interface between soil types are approximate. The transition between soil types may be abrupt or gradual. Our recommendations are based on the final logs, which represent our interpretation of the field logs and general knowledge of the site and geological conditions.**

Modern design and construction are complex, with many regulatory sources/restrictions, involved parties, construction alternatives, etc. It is common to experience changes and delays. The owner should set aside a reasonable contingency fund based on complexities and cost estimates to cover changes and delays

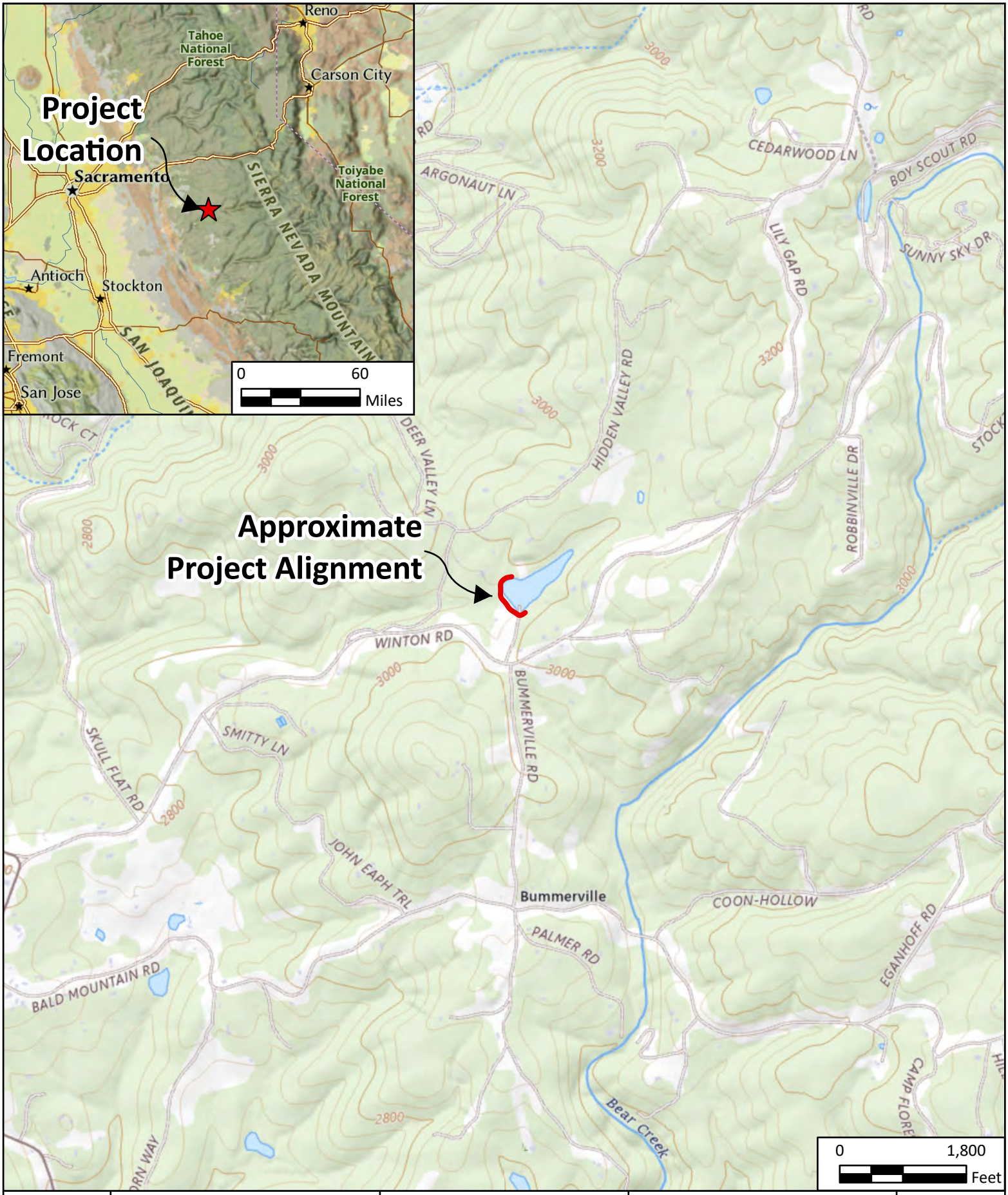
Appendix A

Figure 1: Vicinity Map

Figure 2: Exploration Map

Figure 3: Geologic Map

Figure 4: Fault Map



NORTH

References

1. Base Map: USGS Topographic Map Layer, ArcGIS Pro, ESRI

2. Insert Base Map: National Geographic Style, ArcGIS Pro, ESRI

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West Point Water Supply Drought Project – Phase 1

West Point, CA

Figure 1
Vicinity Map

Prj. No: 24-1309.1
Date: 03/21/2025

NORTH

Source:
Basemap: AutoCAD Civil3D Geolocation Tool, using Bing Maps.

Topographic Data: Provided by Calaveras County Water District via electronic transfer on 03/07/2025.

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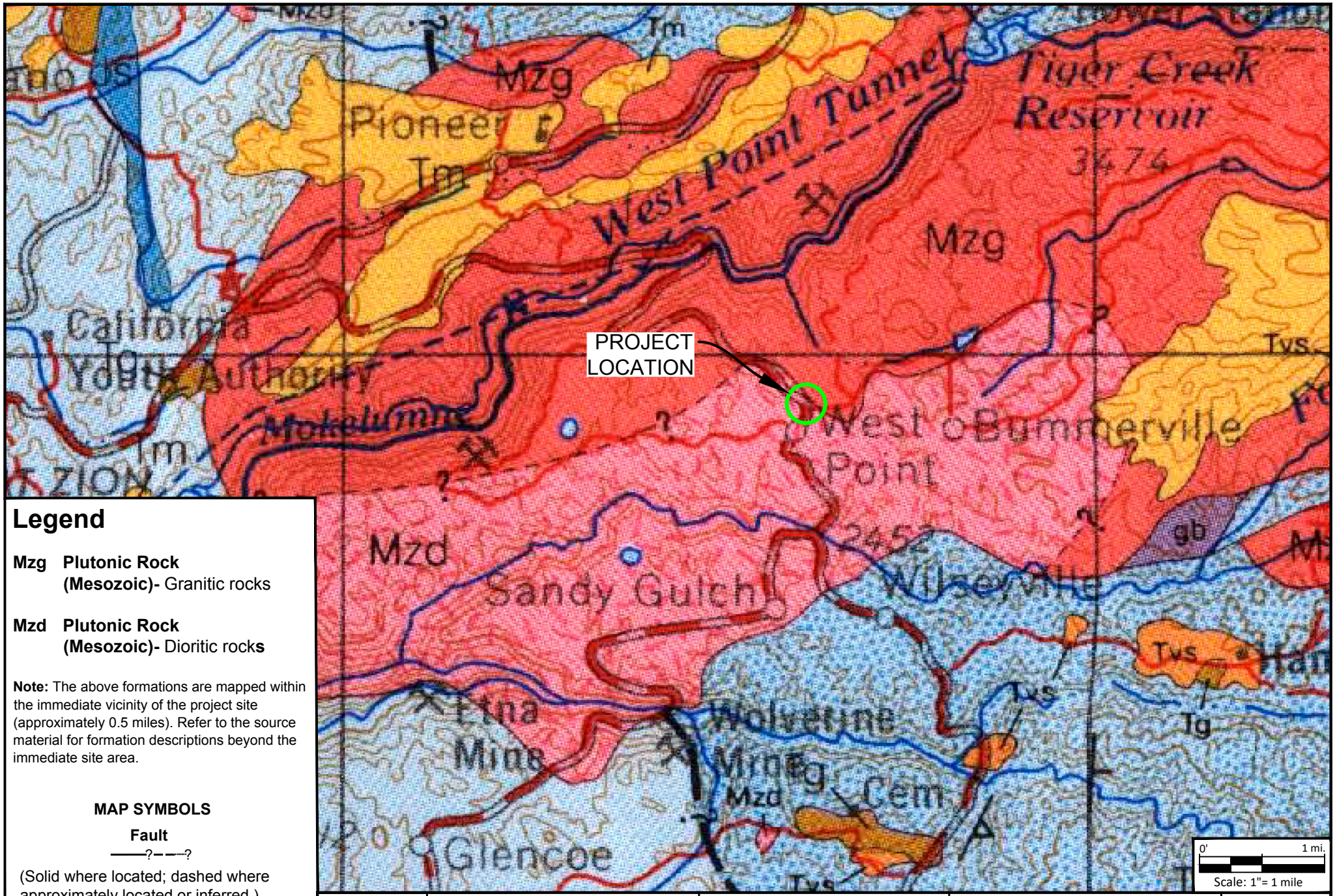
CCWD West Point Drought Water Supply

West Point, CA

Figure 2
Exploration Map

Prj. No: 24-1309.1
Date: 05/29/2025



Legend

Mzg **Plutonic Rock (Mesozoic)-** Granitic rocks

Mzd **Plutonic Rock (Mesozoic)-** Dioritic rocks

Note: The above formations are mapped within the immediate vicinity of the project site (approximately 0.5 miles). Refer to the source material for formation descriptions beyond the immediate site area.

MAP SYMBOLS

Fault

——?– –?

(Solid where located; dashed where approximately located or inferred.)

Strike and dip of foliation (General strike and dip of foliation in metamorphic rocks)

NORTH

Source:
Wagner, D.L., Jennings, C.W., Bedrossian, T.L., and Bortugno, E.J.; 1981, California Division of Mines and Geology; Geologic Map of the Sacramento Quadrangle, California; Regional Geologic Map Series, Map No. 1A, Sheet 1 of 4, 1:250,000.

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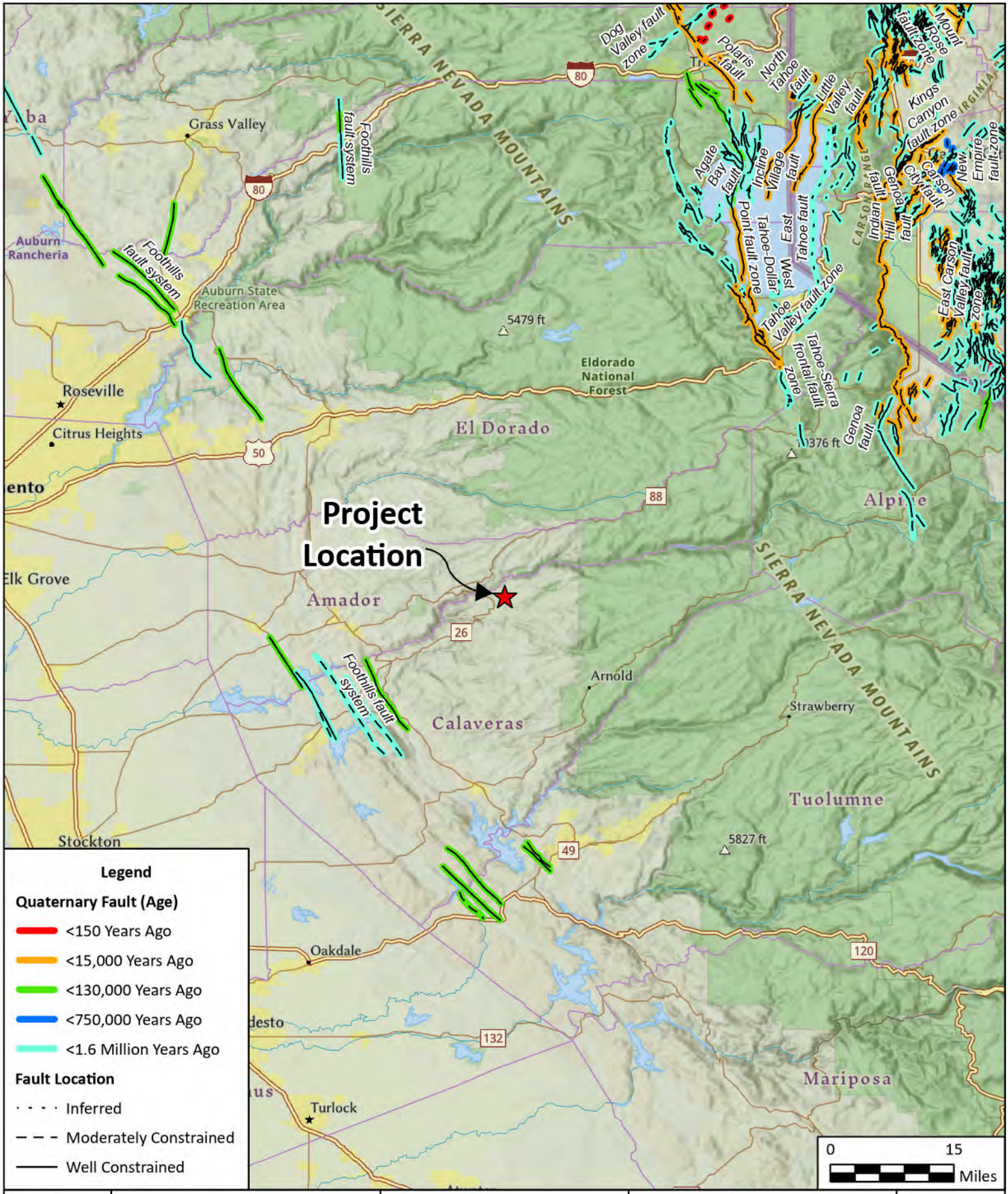
CCWD West Point Drought Water Supply

West Point, CA

Figure 3
Geologic Map

Prj. No: 24-1309.1
Date: 05/29/2025



NORTH

References

1. Fault Data: USGS GIS Data

2. Base Map: National Geographic Style, ArcGIS Pro, ESRI

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West Point Water Supply Drought Project – Phase 1

West Point, CA

Figure 4
Fault Map

Prj. No: 24-1309.1
Date: 03/21/2025

Appendix B

Exploration Details

Boring Log Legend

2025 Crawford Boring Logs

GEOTECHNICAL EXPLORATION SUMMARY

Crawford completed a subsurface exploration at the project site between May 14 and May 16, 2025, to characterize the subsurface conditions and obtain samples for laboratory testing. Terra-Ex was subcontracted by Crawford to complete the borings under the supervision of a Crawford geologist. The exploration included 5 borings to characterize the dam and foundation materials and 2 hand-auger borings to characterize potential borrow material at the site. Additionally, Crawford completed two hand-augers on May 16 and May 27, 2025 at offsite locations to characterize potential borrow material. A summary of the subsurface explorations is provided in Table 1. Refer to Appendix B **for exploration details including sampling, logging, penetration resistance, closure, and determination of locations and elevations. The boring log legend and boring logs are included in Appendix** B**.**

Table 3: Subsurface Exploration Summary

Crawford Exploratory Borings							
Boring ID[1]	Completion Date	Location	Drill Rig Type/ Drilling Equipment Type	Hammer Type	Hammer Efficiency (%)	Approx. Ground Surface Elevation (ft)	Boring Depth (ft)
A-25-001	05/14/2025	Downstream Toe	D-70 (Track Mounted)	Auto	92.2[1]	2958.6	23.0
R-25-003	05/16/2025	Dam Crest				2990.6	76.0
A-25-005	05/16/2025	Dam Crest				2989.2	50.0
A-25-006	05/16/2025	Dam Crest				2991.0	42.5
A-25-007	05/16/2025	Downstream Toe				2964.3	16.5
HA-25-002	05/15/2025	South Side of Reservoir[2]	Hand Auger	N/A	N/A	2989.3	10.0
HA-25-004	05/15/2025	Southwest Side of Reservoir[2]				3002.1	1.0
HA-25-008	05/27/2025	Off-site[2]				N/A	3.8
HA-25-009	05/16/25	Off-site[2]				N/A	5.0

[1] A hammer energy calibration test was not performed specifically for this project/site; however, a previous hammer energy testing result, provided by Geo-Ex Subsurface Exploration, found the hammer to have an energy efficiency of 92.2%.
[2] For potential borrow source

DRILLING AND SAMPLING

The borings were drilled with an 8-inch diameter hollow-stem auger, 4-inch mud rotary drilling equipment, and 3.75-inch outer diameter HQ rock coring. Soil samples were recovered from the borings by means of 2.0-inch O.D. Standard Penetration Test split-spoon sampler (ASTM D1586) without liners and a 3.0-inch O.D. thin-walled Shelby Tube (ASTM D 1587). SPT samplers were each advanced with the standard 350 ft-lb striking force using a 140-lb automatic hammer and a drop height of 30 inches. A hammer energy calibration test was not performed specifically for this

project; however, Terra-Ex reported an energy efficiency of 92.2% (D-70 Track). At completion, exploratory borings were backfilled with cement grout.

At each test interval, the sampler was driven 18 inches (or until sampler refusal criterion was met), and the blows required to advance the sampler each 6-inches of penetration were recorded. The field blow counts were recorded as the number of hammer blows required to drive the sampler the final 12-inches of the 18-inch sample interval, unless refusal was met. The sampler refusal criterion is defined as 50 or more blows with less than 6-inches of sampler advancement. Sampler penetration resistance was recorded to provide a field measure of relative densities and can be correlated to soils strength and bearing characteristics. The field-recorded (uncorrected) blow counts are shown on the boring logs.

We planned the general location and depth of the borings for this study based on our discussions with Black Water. An Exploration Map of our boring locations is presented in Figure 2 in Appendix A. We include a soil legend with descriptions and an explanation of the descriptive terms used to log the soil samples. The boring log legend and boring logs are included in Appendix B.

Selected portions of recovered soil samples from the driven samplers were retained in sealed containers for laboratory testing and reference. The bulk soil samples collected from the auger cuttings were placed in plastic bags for laboratory testing and reference.

LOGGING

Crawford's personnel logged the exploratory borings consistent with the Unified Soil Classification System (USCS) and the Caltrans 2022 Logging Manual. Selected portions of recovered soil drive samples were retained in sealed containers for laboratory testing and reference. Bulk soil samples were retained in sealed bags for laboratory testing and reference. At completion, exploratory borings were backfilled with cement grout.

EXPLORATION LOCATIONS AND ELEVATIONS

The location and depths of the borings for this study are based on our discussions with Black water and the County. The boring elevations are based on topographic data provided by Black Water.

UNIFIED SOIL CLASSIFICATION (ASTM D 2487-06)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES			GRAPHIC SYMBOL	GROUP SYMBOL	SOIL GROUP NAMES
COARSE-GRAINED SOILS >50% RETAINED ON NO. 200 SIEVE	GRAVELS >50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS <5% FINES	Cu ≥ 4 AND 1 ≤ Cc ≤ 3		GW	WELL-GRADED GRAVEL
			Cu < 4 AND/OR 1 > Cc > 3		GP	POORLY-GRADED GRAVEL
		GRAVELS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR MH		GM	SILTY GRAVEL
			FINES CLASSIFY AS CL OR CH		GC	CLAYEY GRAVEL
	SANDS <50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN SANDS <5% FINES	Cu ≥ 6 AND 1 ≤ Cc ≤ 3		SW	WELL-GRADED SAND
			Cu < 6 AND/OR 1 > Cc > 3		SP	POORLY-GRADED SAND
		SANDS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR MH		SM	SILTY SAND
			FINES CLASSIFY AS CL OR CH		SC	CLAYEY SAND
FINE-GRAINED SOILS >50% PASSING NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT <50	INORGANIC	PI>7 AND PLOTS ON OR ABOVE "A" LINE		CL	LEAN CLAY
			PI>4 AND PLOTS BELOW "A" LINE		ML	SILT
		ORGANIC	LL (oven dried)<0.75/LL (not dried)		OL	ORGANIC CLAY OR SILT
	SILTS AND CLAYS LIQUID LIMIT >50	INORGANIC	PI PLOTS ON OR ABOVE "A" LINE		CH	FAT CLAY
			PI PLOTS BELOW "A" LINE		MH	ELASTIC SILT
		ORGANIC	LL (oven dried)<0.75/LL (not dried)		OH	ORGANIC CLAY OR SILT
HIGHLY ORGANIC SOILS		PRIMARILY ORGANIC MATTER, DARK COLOR, ORGANIC ODOR			PT	PEAT

NOTE: $Cu=D_{60}/D_{10}$

$Cc=(D_{30})^2/ D_{10} x D_{60}$

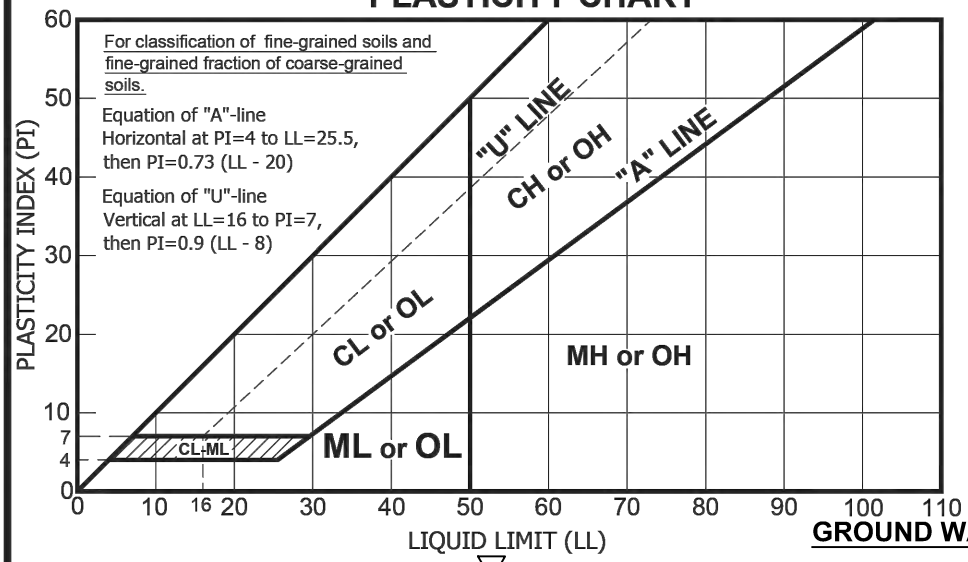
BLOW COUNT

The number of blows of a 140-lb. hammer falling 30-inches required to drive the sampler the last 12-inches of an 18-inch drive. The notation 50/0.4 indicates 4-inches of penetration achieved in 50 blows.

SAMPLE TYPES

- Auger or backhoe cuttings
- Shelby tube
- Standard Penetration (SPT)
- Bulk Sample
- Modified California 2.5"
- Rock core

PLASTICITY CHART



ADDITIONAL TESTS

C	- Consolidation
CP	- Compaction Curve
CR	- Corrosivity Testing
CU	- Consolidated Undrained Triaxial
DS	- Direct Shear
EI	- Expansion Index
P	- Permeability
PA	- Partical Size Analysis
PI	- Plasticity Index
PP	- Pocket Penetrometer
R	- R-Value
SE	- Sand Equivalent
SG	- Specific Gravity
SL	- Shrinkage Limit
SW	- Swell Potential
TV	- Pocket Torvane Shear Test
UC	- Unconfined Compression
UU	- Unconsolidated Undrained Triaxial

GROUND WATER LEVELS

- First Water Level Reading (during drilling)
- Static Water Level Reading (short-term)
- Static Water Level Reading (long-term)

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BORING LOG / TEST PIT LEGEND AND SOIL DESCRIPTIONS

LOG OF BORING A-25-001

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
LOCATION: West Point, CA
COUNTY: Calaveras
CLIENT: Blackwater Consulting Engineers
LOGGED BY: LEK
DEPTH OF BORING: 23.0 (ft)

BEGIN DATE: 05/14/2025
COMPLETION DATE: 05/14/2025
SURFACE ELEVATION: 2958.6 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: 9.8 ft
READING TAKEN: 05/14/25
HAMMER EFFICIENCY: 92.2 (%)

DRILLING CONTRACTOR: Terra-Ex
DRILLING METHOD: Hollow-Stem Auger, HQ
DRILL RIG: D-70 (Track)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: ST, HQ (2.5" ID), SPT (1.4" ID), Bulk
BOREHOLE DIAMETER: 3.8 (in)
BACKFILL METHOD: Neat Cement Grout

ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD	CASING DEPTH	REMARKS
2958	1		Bulk						CLAYEY SAND (SC); brown; dry; mostly fine to coarse SAND; some medium plasticity fines.	100									
2957	2								SANDY lean CLAY (CL); hard; brown; moist; mostly medium plasticity fines; some fine to coarse SAND.										
2956	3		1	500 psi		+4.5				67									
2955	4																		
2954	5													15.3	102.9				CU
2953	6		2	/5 /5 /5					Poorly-graded SAND with CLAY (SP-SC); yellowish brown; wet; mostly medium SAND; few low plasticity fines.	100						14			
2952	7		3	7 9 17	26					67									
2951	8								CLAYEY SAND (SC); dense; brown mottled with yellowish brown and gray; moist; mostly fine to coarse SAND; some medium plasticity fines. Medium dense.										
2950	9		4	5 7 9	16					100									PA
2949	10															32			
2948	11																		
2947	12																		Driller reports hard drilling at 8.5-15'.
2946	13								IGNEOUS ROCK (Granite); medium-grained; blueish gray with white; slightly weathered to fresh; very hard; moderately fractured.										
2945	14																		
2944	15		Run A	50/0.5						63	48								Driller reports water at the bottom of SPT sampler; rebound observed.
2943	16																		
2942	17																		
2941	18																		
2940	19		Run B							58	58								
2939	20																		100 psi fluid pressure
2938	21																		
2937	22																		
2936	23																		350 psi fluid pressure
2935	24								Bottom of borehole at 23.0 ft bgs										
2934	25																		
2933	26																		
2932	27																		
2931	28																		
2930																			

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Geotechnical Engineering, Design and Construction Services

Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822
(916) 455-4225

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: A-25-001
ENTRY BY: JOM
CHECKED BY: MNAJ

LOG OF BORING HA-25-002

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
LOCATION: West Point, CA
COUNTY: Calaveras
CLIENT: Blackwater Consulting Engineers
LOGGED BY: LEK
DEPTH OF BORING: 10.0 (ft)

BEGIN DATE: 05/15/2025
COMPLETION DATE: 05/15/2025
SURFACE ELEVATION: 2989.3 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: N/A

DRILLING CONTRACTOR: Crawford & Associates, Inc.
DRILLING METHOD: Hand Auger
DRILL RIG: N/A
HAMMER TYPE: N/A
SAMPLER TYPE & SIZE: Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD	CASING DEPTH	REMARKS
2989			Bulk						SILTY SAND (SM); yellowish brown; moist; mostly fine to medium SAND; some low plasticity fines.	100									
2988	1																		
2987	2																		PA
2986	3																		
2985	4																		
2984	5															38			
2983	6																		
2982	7																		
2981	8																		
2980	9																		
2979	10								Bottom of borehole at 10.0 ft bgs										
2978	11																		
2977	12																		
2976	13																		
2975	14																		
2974	15																		
2973	16																		
2972	17																		
2971	18																		
2970	19																		
2969	20																		
2968	21																		
2967	22																		
2966	23																		
2965	24																		
2964	25																		
2963	26																		
2962	27																		
2961	28																		

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PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: HA-25-002
ENTRY BY: JOM
CHECKED BY: MNAJ

LOG OF BORING R-25-003

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
LOCATION: West Point, CA
COUNTY: Calaveras
CLIENT: Blackwater Consulting Engineers
LOGGED BY: LEK
DEPTH OF BORING: 76.0 (ft)

BEGIN DATE: 05/14/2025
COMPLETION DATE: 05/16/2025
SURFACE ELEVATION: 2990.6 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: 92.2 (%)

DRILLING CONTRACTOR: Terra-Ex
DRILLING METHOD: Hollow-Stem Auger
DRILL RIG: D-70 (Track)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: ST, SPT (1.4" ID), Bulk, HQ (2.5" ID)
BOREHOLE DIAMETER: 8.0 (in)
BACKFILL METHOD: Tremie Grout

FIELD									LABORATORY								
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
2990	1		Bulk						SANDY lean CLAY (CL); stiff to very stiff; reddish brown; dry; mostly medium plasticity fines; some fine to coarse SAND.	100								
2989	2																	
2988	3		1	350 psi					Some fine to medium SAND; few cobbles; mica present.	83								
2987	4					3.30	0.75											CU
2986	5													21.4	102.7			
2985	6		2	3 3 6	9	1.50 2.75	0.88			100								
2984	7																	
2983	8								SILTY SAND (SM); yellowish brown; moist; mostly fine to medium SAND; little low plasticity fines.									Driller reports easy drilling from 0'-15'.
2982	9		3	400 psi						90								
2981	10																	
2980	11																	
2979	12																	
2978	13								CLAYEY SAND (SC); medium dense; yellowish brown; moist; mostly fine to coarse SAND; some medium plasticity fines.									
2977	14																	
2976	15																	
2975	16		4	1 5 5	10	1.67				100						43		
2974	17								12" thick interbed of SANDY lean CLAY (CL); stiff; mostly medium plasticity fines; some fine to coarse SAND.									
2973	18		5	450 psi						100								Driller reports moderate drilling effort required from 15'-20'.
2972	19													20.0	109.2			
2971	20																	
2970	21		6	4 3 3	6				Loose.	67						47		
2969	22																	
2968	23																	
2967	24								CLAYEY SAND with GRAVEL (SC); gray; moist; mostly fine to coarse SAND; some medium plasticity fines; little subangular coarse GRAVEL.									
2966	25																	
2965	26		7	350 psi						100								
2964	27																	
2963	28								CLAYEY SAND (SC); yellowish brown; moist; mostly fine to coarse SAND; some low to medium plasticity fines.									
2962																		

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PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: R-25-003
ENTRY BY: JOM
CHECKED BY: MNAJ

FIELD									LABORATORY								
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
2961									CLAYEY SAND (SC); yellowish brown; moist; mostly fine to coarse SAND; some low to medium plasticity fines.									
2960	30		8	400 psi						100								Driller reports soft material at 30'.
2959	31																	CU
2958	32					3.50								18.8	110.7			
2957	33		9	4 4 4	8	1.50 0.50			Medium dense; yellowish brown mottled with reddish brown.	100						47		PA
2956	34																	
2955	35		10	300 psi						100								Switched to mud rotary at 35'.
2954	36																	CU
2953	37													22.6	101.3			
2952	38																	
2951	39																	
2950	40		11	6 8 12	20				Brown with yellowish brown; mostly fine to medium SAND.	44								
2949	41																	
2948	42																	
2947	43								IGNEOUS ROCK (Granite); fine-grained; light gray; decomposed; very soft.									Driller reports harder drilling effort at 43'.
2946	44																	
2945	45		12	50/6						67								sampler rebounded.
2944	46																	
2943	47																	Driller reports minor fluid loss at 45'-50'.
2942	48																	
2941	49																	
2940	50		13	39 50/3					Yellowish brown.	50								Driller reports hard drilling at 50'. Sampler rebounding at 50'.
2939	51																	
2938	52																	
2937	53																	
2936	54																	
2935	55		14	50/2						17								Sampler rebounding at 55'.
2934	56																	
2933	57																	Driller reports minor fluid loss from 55'-60'.
2932	58																	
2931	59																	
2930	60		15	22 18 43	61					56								Sampler rebounding at 60'.
2929	61																	
2928	62																	
2927	63																	

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PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: R-25-003
ENTRY BY: JOM
CHECKED BY: MNAJ

FIELD												LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD	CASING DEPTH	REMARKS
2926	65								IGNEOUS ROCK (Granite); fine-grained; light gray; decomposed; very soft.										
2925	66																		
2924	67																		
2923	68																		Driller reports minor fluid loss from 65'-70'. Intermittent grinding from 65'-70'.
2922	69																		
2921	70																		
2920	71		16	16 50/5					Gray; medium-fine grained; decomposed to intensely weathered; moderately soft to moderately hard.	92									Sampler rebounding at 70'.
2919	72		Run A							60	20								Uniaxial compressive strength: 15040 psi.
2918	73								Blueish gray with white; moderately weathered; intensely fractured; very hard.										
2917	74																		
2916	75																		
2915	76								Bottom of borehole at 76.0 ft bgs										
2914	77																		
2913	78																		
2912	79																		
2911	80																		
2910	81																		
2909	82																		
2908	83																		
2907	84																		
2906	85																		
2905	86																		
2904	87																		
2903	88																		
2902	89																		
2901	90																		
2900	91																		
2899	92																		
2898	93																		
2897	94																		
2896	95																		
2895	96																		
2894	97																		
2893	98																		
2892																			

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PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: R-25-003
ENTRY BY: JOM
CHECKED BY: MNAJ

LOG OF BORING HA-25-004

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
LOCATION: West Point, CA
COUNTY: Calaveras
CLIENT: Blackwater Consulting Engineers
LOGGED BY: LEK/JDH
DEPTH OF BORING: 1.0 (ft)

BEGIN DATE: 05/15/2025
COMPLETION DATE: 05/15/2025
SURFACE ELEVATION: 3002.1 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: N/A

DRILLING CONTRACTOR: Crawford & Associates, Inc.
DRILLING METHOD: Hand Auger
DRILL RIG: N/A
HAMMER TYPE: N/A
SAMPLER TYPE & SIZE: Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD												LABORATORY						
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
3001	1		Bulk						CLAYEY SAND (SC); brown; moist; mostly fine to coarse SAND; some medium plasticity fines.	100		8	49			32		Refusal at 1' due to roots.
									Bottom of borehole at 1.0 ft bgs									
3000	2																	
2999	3																	
2998	4																	
2997	5																	
2996	6																	
2995	7																	
2994	8																	
2993	9																	
2992	10																	
2991	11																	
2990	12																	
2989	13																	
2988	14																	
2987	15																	
2986	16																	
2985	17																	
2984	18																	
2983	19																	
2982	20																	
2981	21																	
2980	22																	
2979	23																	
2978	24																	
2977	25																	
2976	26																	
2975	27																	
2974	28																	

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PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: HA-25-004
ENTRY BY: JOM
CHECKED BY: MNAJ

LOG OF BORING A-25-005

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
LOCATION: West Point, CA
COUNTY: Calaveras
CLIENT: Blackwater Consulting Engineers
LOGGED BY: JDH
DEPTH OF BORING: 50.0 (ft)

BEGIN DATE: 05/16/2025
COMPLETION DATE: 05/16/2025
SURFACE ELEVATION: 2989.2 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: 35.6 ft
READING TAKEN: 05/16/25
HAMMER EFFICIENCY: 92.2 (%)

DRILLING CONTRACTOR: Terra-Ex
DRILLING METHOD: Hollow-Stem Auger
DRILL RIG: D-70 (Track)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: ST, SPT (1.4" ID), Bulk
BOREHOLE DIAMETER: 8.0 (in)
BACKFILL METHOD: Tremie Grout

FIELD									LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD	CASING DEPTH	REMARKS
2988	1		Bulk						SANDY lean CLAY (CL); very stiff; reddish brown; moist; mostly medium plasticity fines; some fine to coarse SAND.	100									
2987	2																		
2986	3		1	17 7 5	12	2.00	2.50		SANDY elastic SILT (MH); very stiff; reddish brown; moist; mostly high plasticity fines; some fine to medium SAND.	56		24	57						Driller reports higher drilling effort required.
2985	4								SANDY lean CLAY (CL); very stiff; reddish brown; moist; mostly medium plasticity fines; some fine to coarse SAND.										
2984	5		2	3 4 7	11	3.00				72									
2983	6																		
2982	7								CLAYEY SAND (SC); medium dense; brown; moist; mostly fine to coarse SAND; some medium plasticity fines.										
2981	8		3	4 4 5	9					83						45			
2980	9																		
2979	10																		
2978	11																		
2977	12								SANDY lean CLAY (CL); very stiff to hard; dark brown; moist; mostly medium plasticity fines; some fine to coarse SAND.										
2976	13																		
2975	14																		
2974	15		4	250 psi						70									
2973	16																		
2972	17					3.50								23.0	100.9				CU
2971	18																		
2970	19																		
2969	20		5	200 psi					Reddish brown with gray.	63									
2968	21																		
2967	22					1.00	2.50												
2966	23																		
2965	24								CLAYEY SAND (SC); medium dense; dark brown; moist; mostly fine to medium SAND; some medium plasticity fines; trace fine GRAVEL.										
2964	25		6	4 4 5	9					100						47			PA
2963	26																		
2962	27																		
2961	28																		

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PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: A-25-005
ENTRY BY: JOM
CHECKED BY: MNAJ

FIELD									LABORATORY								
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
									CLAYEY SAND (SC); medium dense; dark brown; moist; mostly fine to medium SAND; some medium plasticity fines; trace fine GRAVEL. Blueish Gray.								
2959	30		7	4 4 7	11					100							
2958	31																
2957	32																
2956	33																
2955	34																
2954	35		8	500 psi						70							
2953	36																
2952	37																
2951	38																
2950	39								IGNEOUS ROCK (Granite); fine to medium grained; reddish brown, white, and black; decomposed; very soft.								
2949	40		9	7 9 14	23					83								250 psi fluid pressure.
2948	41																
2947	42																
2946	43																
2945	44																
2944	45		10	7 9 10	19					78							
2943	46																
2942	47																
2941	48																
2940	49																Drilling chatter from 49-50'.
2939	50								Bottom of borehole at 50.0 ft bgs								Refusal at 50'.
2938	51																
2937	52																
2936	53																
2935	54																
2934	55																
2933	56																
2932	57																
2931	58																
2930	59																
2929	60																
2928	61																
2927	62																
2926	63																

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PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: A-25-005
ENTRY BY: JOM
CHECKED BY: MNAJ
SHEET # 2 of 2

LOG OF BORING A-25-006

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
LOCATION: West Point, CA
COUNTY: Calaveras
CLIENT: Blackwater Consulting Engineers
LOGGED BY: JDH
DEPTH OF BORING: 42.5 (ft)

BEGIN DATE: 05/16/2025
COMPLETION DATE: 05/16/2025
SURFACE ELEVATION: 2991.0 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: 39.5 ft
READING TAKEN: 05/16/25
HAMMER EFFICIENCY: 92.2 (%)

DRILLING CONTRACTOR: Terra-Ex
DRILLING METHOD: Hollow-Stem Auger
DRILL RIG: D-70 (Track)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: SPT (1.4" ID), ST, Bulk
BOREHOLE DIAMETER: 8.0 (in)
BACKFILL METHOD: Tremie Grout

FIELD										LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD / CASING DEPTH	REMARKS
2990	1		Bulk						SANDY lean CLAY (CL); very stiff; reddish brown; moist; mostly medium plasticity fines; some fine to coarse SAND.	100								
2989	2																	
2988	3		1	7 4 6	10	1.50 2.00	3.00		SANDY elastic SILT (MH); very stiff to hard; reddish brown; moist; mostly high plasticity fines; some fine to coarse SAND.	67		23	53					
2987	4																	
2986	5		2	500 psi					CLAYEY SAND (SC); very; yellowish brown; moist; mostly fine to coarse SAND; some medium plasticity fines.	87								
2985	6																	
2984	7													18.4	103.7			
2983	8		3	3 3 6	9	3.00 4.50	3.50		SANDY lean CLAY (CL); very stiff to hard; reddish brown; moist; mostly medium plasticity fines; some fine to coarse SAND.	100								
2982	9																	
2981	10																	
2980	11																	
2979	12																	
2978	13																	
2977	14																	
2976	15		4	450 psi						93								Driller reports medium drilling effort required.
2975	16															52		
2974	17					4.00								22.7	101.5			CU
2973	18																	
2972	19								CLAYEY SAND (SC); reddish brown; moist; mostly fine to coarse SAND; some medium plasticity fines.									
2971	20		5	400 psi					Yellowish brown	90								
2970	21																	
2969	22																	
2968	23																	
2967	24																	
2966	25		6	3 3 5	8				Medium dense.	100								
2965	26															29		
2964	27																	
2963	28																	

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PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: A-25-006
ENTRY BY: JOM
CHECKED BY: MNAJ

FIELD										LABORATORY								
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD	CASING DEPTH	REMARKS
									CLAYEY SAND (SC); reddish brown; moist; mostly fine to coarse SAND; some medium plasticity fines. Yellowish brown, white, and black.										
2961	30		7	5 5 6	11					100									
2960	31																		
2959	32																		
2958	33																		
2957	34																		
2956	35		8	4 6 6	12					100						29			PA
2955	36																		
2954	37																		
2953	38																		
2952	39								IGNEOUS ROCK (Granite); medium-grained; yellowish brown, white, and black; decomposed; very soft.										
2951	40		9	500 psi						30									
2950	41																		
2949	42																		
2948	43								Bottom of borehole at 42.5 ft bgs										
2947	44																		
2946	45																		
2945	46																		
2944	47																		
2943	48																		
2942	49																		
2941	50																		
2940	51																		
2939	52																		
2938	53																		
2937	54																		
2936	55																		
2935	56																		
2934	57																		
2933	58																		
2932	59																		
2931	60																		
2930	61																		
2929	62																		
2928	63																		

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PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: A-25-006
ENTRY BY: JOM
CHECKED BY: MNAJ

LOG OF BORING A-25-007

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
LOCATION: West Point, CA
COUNTY: Calaveras
CLIENT: Blackwater Consulting Engineers
LOGGED BY: JDH
DEPTH OF BORING: 16.5 (ft)

BEGIN DATE: 05/16/2025
COMPLETION DATE: 05/16/2025
SURFACE ELEVATION: 2964.3 (ft)
SURFACE CONDITION: Soil
WATER DEPTH: 16.4 ft
READING TAKEN: 05/16/25
HAMMER EFFICIENCY: 92.2 (%)

DRILLING CONTRACTOR: Terra-Ex
DRILLING METHOD: Hollow-Stem Auger
DRILL RIG: D-70 (Track)
HAMMER TYPE: Automatic; 140 (lbs); 30 (in) drop
SAMPLER TYPE & SIZE: ST, Bulk, SPT (1.4" ID)
BOREHOLE DIAMETER: 8.0 (in)
BACKFILL METHOD: Neat Cement Grout

FIELD											LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD	CASING DEPTH	REMARKS
2964			Bulk						CLAYEY SAND (SC); loose; reddish brown; moist; mostly fine to coarse SAND; some medium plasticity fines; trace fine GRAVEL.	100									PA
2963	1																		
2962	2																		
2961	3		1	4 2 2	4					89						49			
2960	4																		
2959	5		2	200 psi						70									
2958	6																		
2957	7													21.1	99.2				CU
2956	8		3	4 4 10	14				CLAYEY SAND with GRAVEL (SC); medium dense; yellowish brown; moist; mostly fine to coarse SAND; some medium plasticity fines; little coarse GRAVEL.	67						34			
2955	9																		
2954	10																		
2953	11																		
2952	12																		Driller reports harder drilling effort from12-15'.
2951	13								IGNEOUS ROCK (Granite); fine-medium-grained; blueish gray; intensely to moderately weathered; moderately soft.										
2950	14																		
2949	15		4	6 50/5						50									
2948	16																		
2947	17								Bottom of borehole at 16.5 ft bgs										
2946	18																		
2945	19																		
2944	20																		
2943	21																		
2942	22																		
2941	23																		
2940	24																		
2939	25																		
2938	26																		
2937	27																		
2936	28																		

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822
(916) 455-4225

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: A-25-007
ENTRY BY: JOM
CHECKED BY: MNAJ

LOG OF BORING HA-25-008

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
LOCATION: West Point, CA
COUNTY: Calaveras
CLIENT: Blackwater Consulting Engineers
LOGGED BY: LEK
DEPTH OF BORING: 3.8 (ft)

BEGIN DATE: 05/27/2025
COMPLETION DATE: 05/27/2025
SURFACE ELEVATION:
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: N/A

DRILLING CONTRACTOR: Crawford & Associates. Inc.
DRILLING METHOD: Hand Auger
DRILL RIG: N/A
HAMMER TYPE: N/A
SAMPLER TYPE & SIZE: Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD												LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD	CASING DEPTH	REMARKS
			Bulk						CLAYEY SAND (SC); reddish brown; moist; some fine to coarse SAND; some medium plasticity fines; few fine GRAVEL; mica present.	100									
-1	1																		PA
-2	2															46			Remolded CU Roots present.
-3	3													15.8	109.5				
-4	4								Bottom of borehole at 3.8 ft bgs										Rock refusal at 3.75
-5	5																		
-6	6																		
-7	7																		
-8	8																		
-9	9																		
-10	10																		
-11	11																		
-12	12																		
-13	13																		
-14	14																		
-15	15																		
-16	16																		
-17	17																		
-18	18																		
-19	19																		
-20	20																		
-21	21																		
-22	22																		
-23	23																		
-24	24																		
-25	25																		
-26	26																		
-27	27																		
-28	28																		

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Crawford & Associates, Inc.
4701 Freeport Blvd
Sacramento, CA 95822
(916) 455-4225

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: HA-25-008
ENTRY BY: JOM
CHECKED BY: MNAJ

LOG OF BORING HA-25-009

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
LOCATION: West Point, CA
COUNTY: Calaveras
CLIENT: Blackwater Consulting Engineers
LOGGED BY: LEK
DEPTH OF BORING: 5.0 (ft)

BEGIN DATE: 05/16/2025
COMPLETION DATE: 05/16/2025
SURFACE ELEVATION:
SURFACE CONDITION: Soil
WATER DEPTH: Not Encountered
READING TAKEN: N/A
HAMMER EFFICIENCY: N/A

DRILLING CONTRACTOR: Crawford & Associates, Inc.
DRILLING METHOD: Hand Auger
DRILL RIG: N/A
HAMMER TYPE: N/A
SAMPLER TYPE & SIZE: Bulk
BOREHOLE DIAMETER: 4.0 (in)
BACKFILL METHOD: Native Cuttings

FIELD												LABORATORY							
ELEVATION (ft)	DEPTH (ft)	SAMPLE	SAMPLE NO	BLOWS PER 6 IN.	BLOWS PER FOOT	POCKET PEN. (TSF)	TORVANE (TSF)	GRAPHIC LOG	DESCRIPTION	RECOVERY(%)	RQD (%)	PLASTICITY INDEX	LIQUID LIMIT	MOISTURE (%)	D. DENSITY (PCF)	% PASSING 200 SIEVE	DRILL METHOD	CASING DEPTH	REMARKS
			Bulk 1						CLAYEY SAND (SC); reddish brown mottled with black; dry; mostly fine to coarse SAND; some medium plasticity fines; few fine subangular GRAVEL; mica present; [FILL]. Moist to wet	100						40			
-1	1																		
-2	2																		
-3	3																		
-4	4		Bulk 2						CLAYEY SAND (SC); brown; moist; mostly fine to coarse SAND; some low plasticity fines; few subangular GRAVEL.	100									
-5	5								Bottom of borehole at 5.0 ft bgs										
-6	6																		
-7	7																		
-8	8																		
-9	9																		
-10	10																		
-11	11																		
-12	12																		
-13	13																		
-14	14																		
-15	15																		
-16	16																		
-17	17																		
-18	18																		
-19	19																		
-20	20																		
-21	21																		
-22	22																		
-23	23																		
-24	24																		
-25	25																		
-26	26																		
-27	27																		
-28	28																		

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

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4701 Freeport Blvd
Sacramento, CA 95822
(916) 455-4225

PROJECT NO: 24-1309.1
PROJECT: West Point Water Supply Drought Project
BORING: HA-25-009
ENTRY BY: JOM
CHECKED BY: MNAJ

Appendix C

Laboratory Test Results

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/4/25
Technician: J. Ortiz / B.Peters

MOISTURE-DENSITY TESTS - D2216/D7263

	1	2	3	4	5
Sample No.	R-25-003-5	A-25-006-2			
USCS Symbol	SC	SC			
Depth (ft.)	17	7			
Sample Length (in.)	5.946	4.008			
Diameter (in.)	2.837	2.754			
Sample Volume (ft^3)	0.02174	0.01382			
Total Mass Soil+Tube (g)	1721.9	1188.4			
Mass of Tube (g)	429.1	419.2			
Tare No.	G17	G4			
Tare (g)	13.6	13.4			
Wet Soil + Tare (g)	92.4	104.5			
Dry Soil + Tare (g)	79.3	90.4			
Dry Soil (g)	65.7	76.9			
Water (g)	13.1	14.1			
Moisture (%)	**20.0**	**18.4**			
Dry Density (pcf)	**109.2**	**103.7**			

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/3/25
Technician: J. Ortiz / C. Brathwaite

200 Wash - ASTM D1140
Method A

Max Particle	Standard	Recommend
2 mm or less	No. 10	20 g
4.75 mm	No. 4	100 g
9.5 mm	3/8 "	500 g
19.0 mm	3/4 "	2.5 kg
37.5 mm	1 1/2 "	10 kg
75.0 mm	3 "	50 kg

Table from 6.2 of ASTM D1140

Sample No.	A-25-001-2	R-25-003-4C/4B	R-25-003-6A	HA-25-004-Bulk	R-25-005-3B
USCS Symbol	SP-SC	SC	SC	SC	SC
Depth (ft.)	5	15	21	0.0-10.0	8.5
Tare No.	2037	X27	4005	2014	9014
Tare (g)	120.33	113.36	113.93	113.41	114.55
Dry Soil + Tare (g)	352.11	242.53	315.87	327.27	334.33
Dry Mass before (g)	231.8	129.2	201.9	213.9	219.8
Dry Mass after (g)	199.0	73.2	107.6	144.5	120.6
Percent Fines (%)	14	43	47	32	45

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/3/25
Technician: J. Ortiz / C. Brathwaite

200 Wash - ASTM D1140
Method A

Max Particle	Standard	Recommend
2 mm or less	No. 10	20 g
4.75 mm	No. 4	100 g
9.5 mm	3/8 "	500 g
19.0 mm	3/4 "	2.5 kg
37.5 mm	1 1/2 "	10 kg
75.0 mm	3 "	50 kg

Table from 6.2 of ASTM D1140

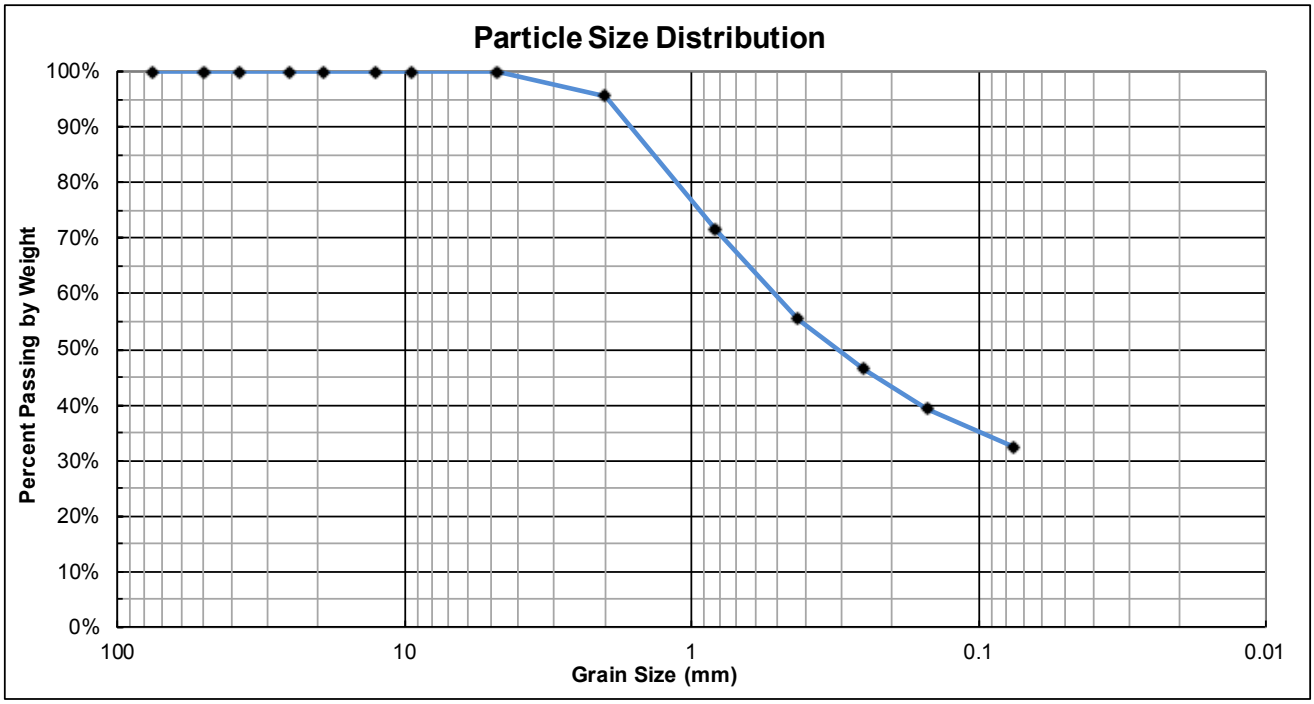
Sample No.	A-25-006-4	A-25-006-6A	A-25-007-3A		
USCS Symbol	CL	SC	SC		
Depth (ft.)	15	26	9		
Tare No.	X18	1016	X19		
Tare (g)	116.5	126.59	115		
Dry Soil + Tare (g)	311.08	302.76	361.44		
Dry Mass before (g)	194.6	176.2	246.4		
Dry Mass after (g)	93.8	124.4	161.8		
Percent Fines (%)	52	29	34		

Notes:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/6/25
Technician: A. Madden
Sample ID: A-25-001-4A
Depth (ft): 9.5
USCS Classification: CLAYEY SAND

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	0	4	41	23	
0	**0**		**68**			**32**

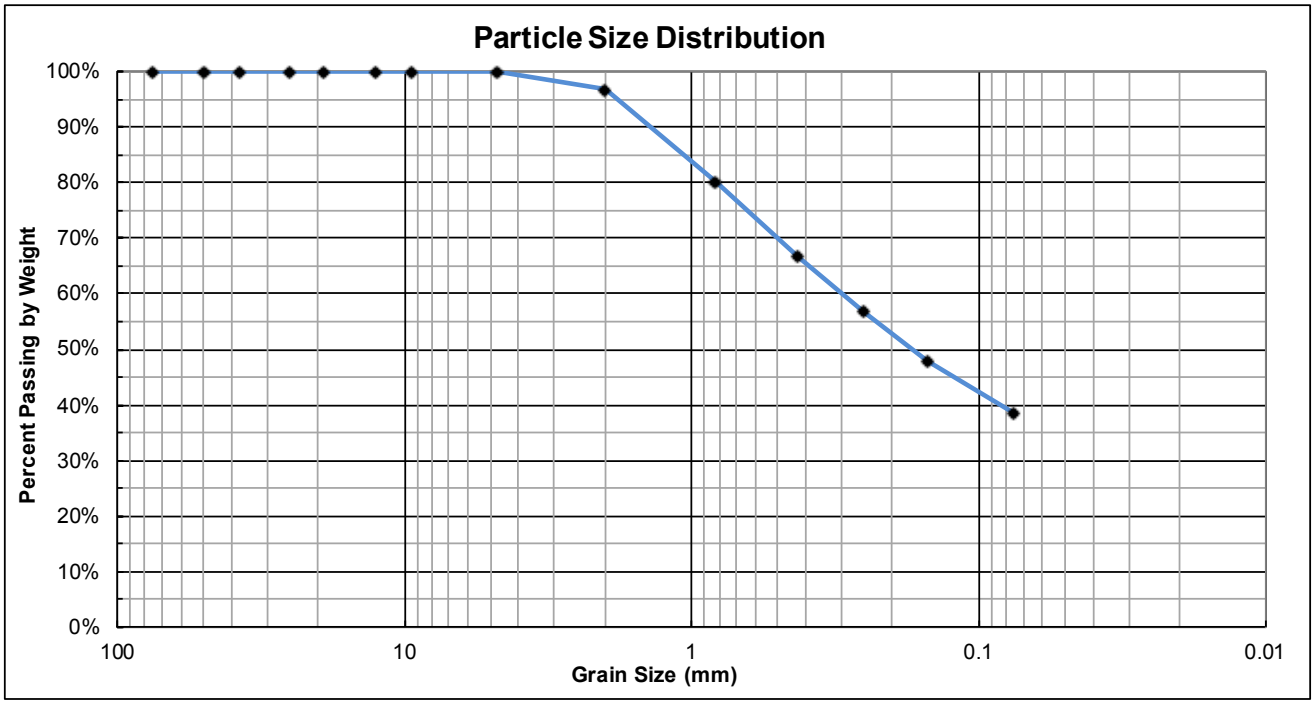
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	0.0	100%
		3/8"	9.50	0.0	100%
		#4	4.75	0.0	100%
Sand	Coarse	**#10**	2.00	10.2	96%
	Medium	**#20**	0.825	66.8	72%
		#40	0.425	104.6	55%
	Fine	**#60**	0.250	126.0	46%
		#100	0.150	142.3	39%
Silt/Clay		**#200**	0.075	158.7	32%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/5/25
Technician: A. Crawford
Sample ID: HA-25-002-Bulk
Depth (ft): 0.0-5.0
USCS Classification: Silty Sand

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	0	3	30	29	
0	**0**		**62**			**38**

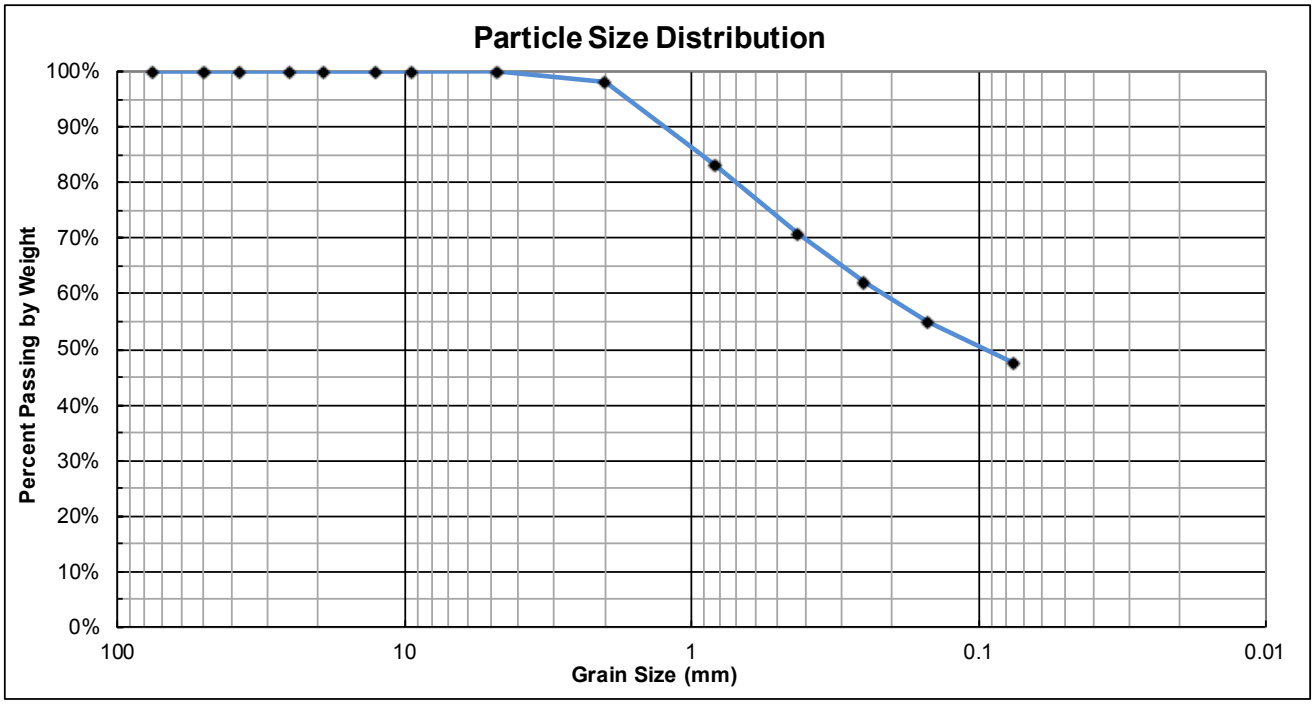
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	0.0	100%
		3/8"	9.50	0.0	100%
		#4	4.75	0.0	100%
Sand	Coarse	**#10**	2.00	5.2	97%
	Medium	**#20**	0.825	31.7	80%
		#40	0.425	52.9	67%
	Fine	**#60**	0.250	68.7	57%
		#100	0.150	82.8	48%
Silt/Clay		**#200**	0.075	97.6	38%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/12/25
Technician: A. Madden
Sample ID: R-25-003-9C/9B/9A
Depth (ft): 33
USCS Classification: Clayey Sand

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	0	2	27	24	
0	**0**		**53**			**47**

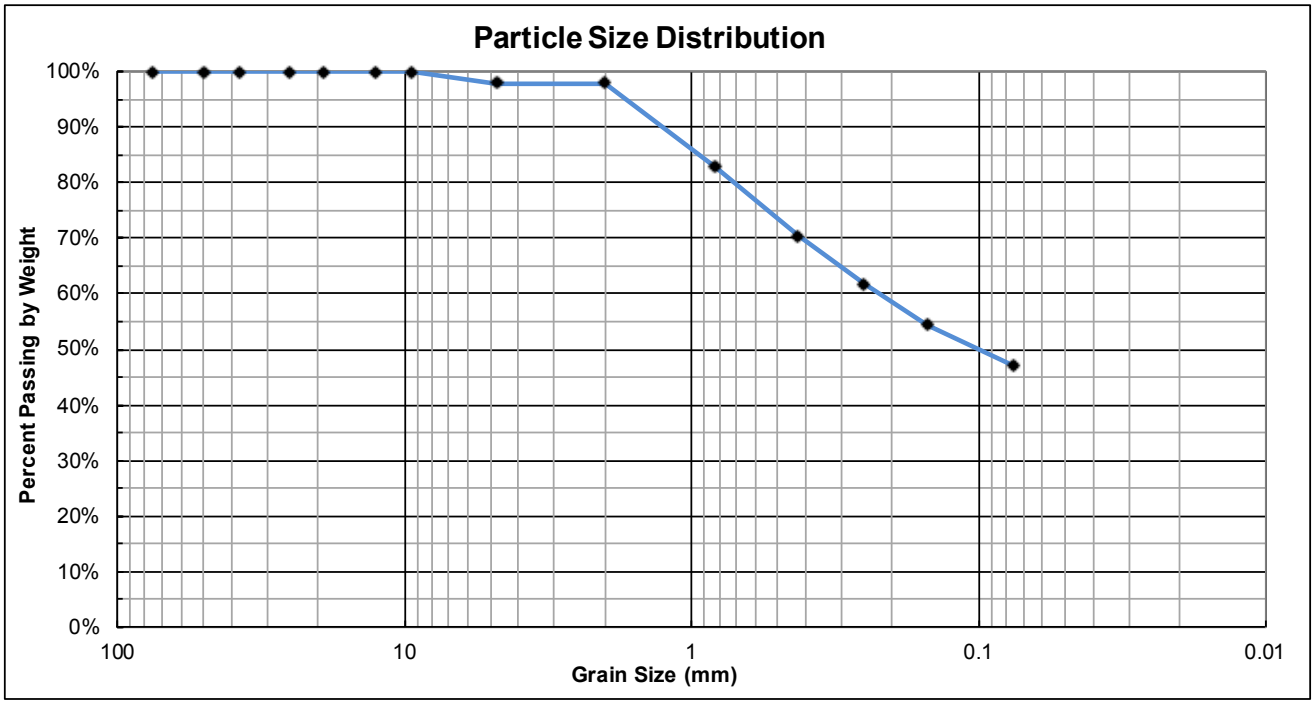
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	0.0	100%
		3/8"	9.50	0.0	100%
		#4	4.75	0.2	100%
Sand	Coarse	**#10**	2.00	3.3	98%
	Medium	**#20**	0.825	28.7	83%
		#40	0.425	49.5	71%
	Fine	**#60**	0.250	64.3	62%
		#100	0.150	76.2	55%
Silt/Clay		**#200**	0.075	88.9	47%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/5/25
Technician: A. Crawford
Sample ID: A-25-005-6B
Depth (ft): 25.5
USCS Classification: Clayey Sand

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	2	0	28	23	
0	**2**		**51**			**47**

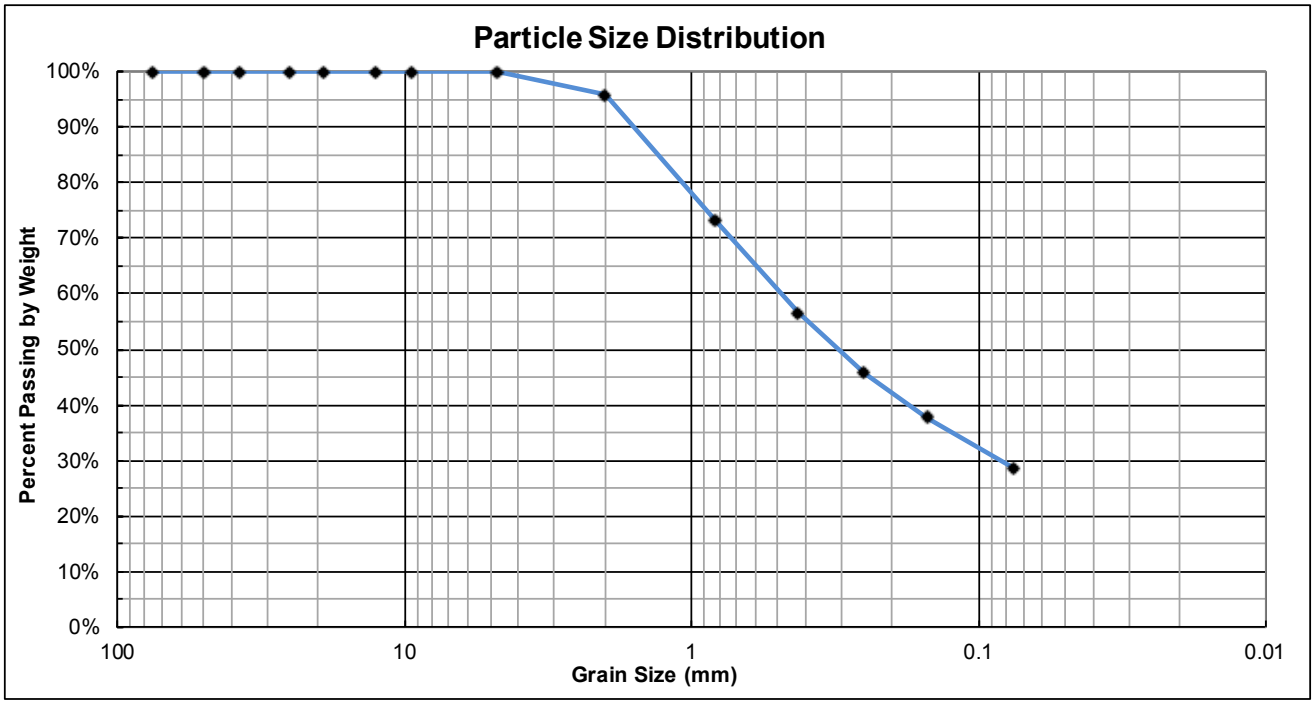
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	0.0	100%
		3/8"	9.50	0.0	100%
		#4	4.75	6.4	98%
Sand	Coarse	**#10**	2.00	6.4	98%
	Medium	**#20**	0.825	51.4	83%
		#40	0.425	88.8	70%
	Fine	**#60**	0.250	114.6	62%
		#100	0.150	136.4	54%
Silt/Clay		**#200**	0.075	158.6	47%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/5/25
Technician: A. Crawford
Sample ID: A-25-006-8C/8B/8C
Depth (ft): 35
USCS Classification: Clayey Sand

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	0	4	39	28	
0	**0**		**71**			**29**

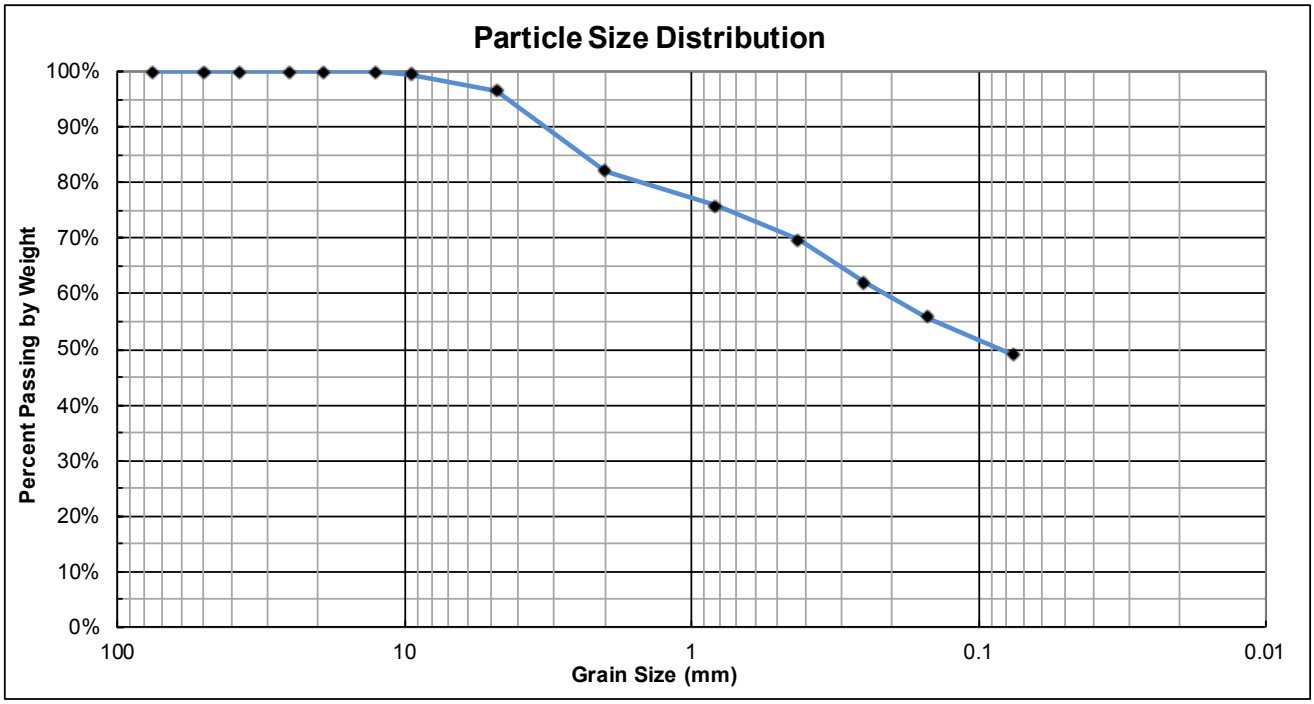
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	0.0	100%
		3/8"	9.50	0.0	100%
		#4	4.75	0.0	100%
Sand	Coarse	**#10**	2.00	9.8	96%
	Medium	**#20**	0.825	61.8	73%
		#40	0.425	100.0	57%
	Fine	**#60**	0.250	124.6	46%
		#100	0.150	143.3	38%
Silt/Clay		**#200**	0.075	164.3	29%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/5/25
Technician: A. Crawford
Sample ID: A-25-007-1C/1A/1B
Depth (ft): 2.5
USCS Classification: Clayey Sand

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	3	15	12	21	
0	**3**		**48**			**49**

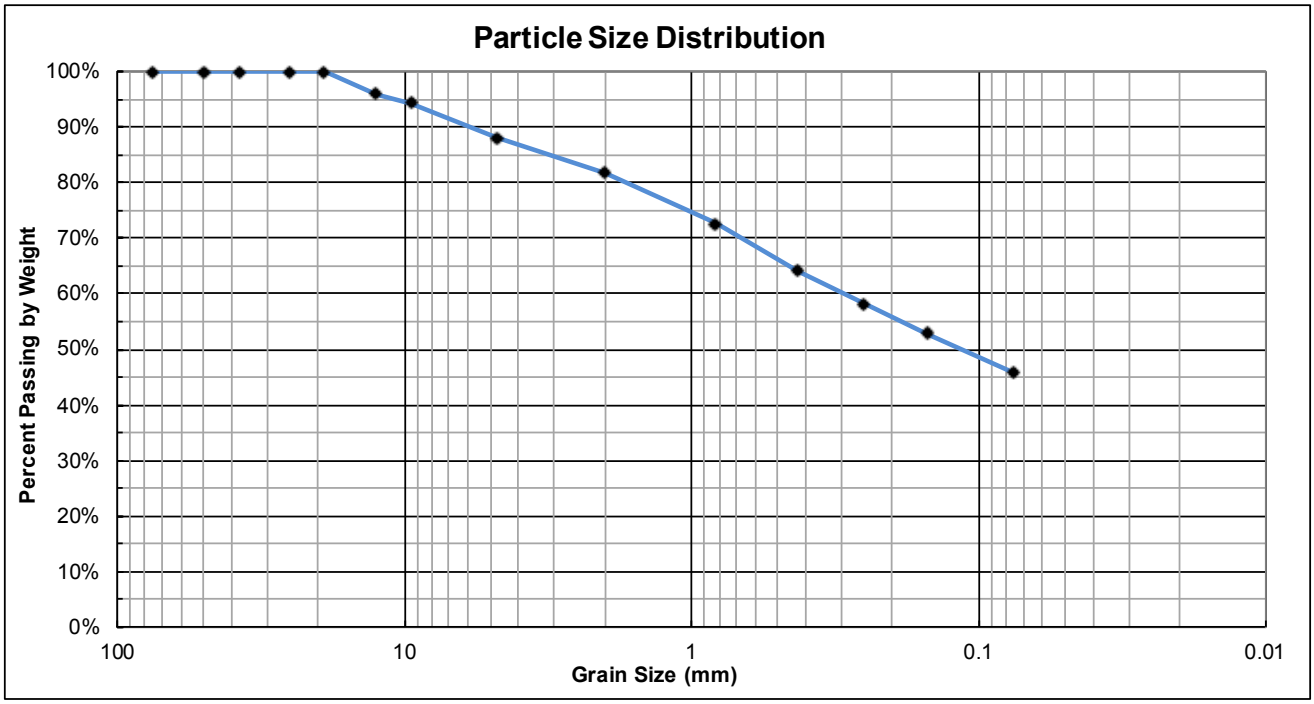
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	0.0	100%
		3/8"	9.50	1.2	99%
		#4	4.75	7.1	97%
Sand	Coarse	**#10**	2.00	36.8	82%
	Medium	**#20**	0.825	49.7	76%
		#40	0.425	62.3	70%
	Fine	**#60**	0.250	78.2	62%
		#100	0.150	90.9	56%
Silt/Clay		**#200**	0.075	104.9	49%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/6/25
Technician: A. Madden
Sample ID: HA-25-008-Bulk
Depth (ft): 0.0-3.8
USCS Classification: Clayey Sand

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	12	6	18	18	
0	**12**		**42**			**46**

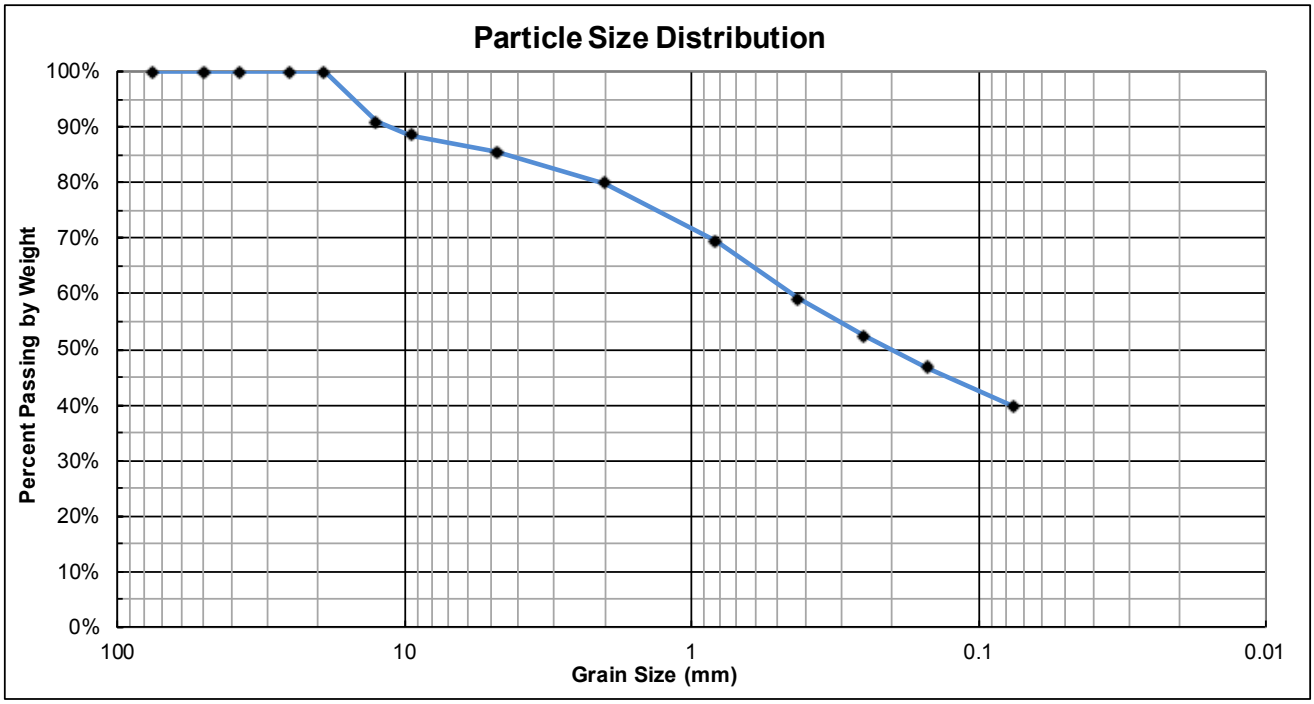
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	14.5	96%
		3/8"	9.50	20.2	94%
		#4	4.75	42.2	88%
Sand	Coarse	**#10**	2.00	64.5	82%
	Medium	**#20**	0.825	96.5	73%
		#40	0.425	126.7	64%
	Fine	**#60**	0.250	148.0	58%
		#100	0.150	166.8	53%
Silt/Clay		**#200**	0.075	191.6	46%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/6/25
Technician: A. Madden
Sample ID: A-25-009-Bulk 1
Depth (ft): 0.0-4.0
USCS Classification: Clayey Sand

ASTM 6913 - Method A



% Cobble	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	Silt/Clay
	0	14	6	21	19	
0	**14**		**46**			**40**

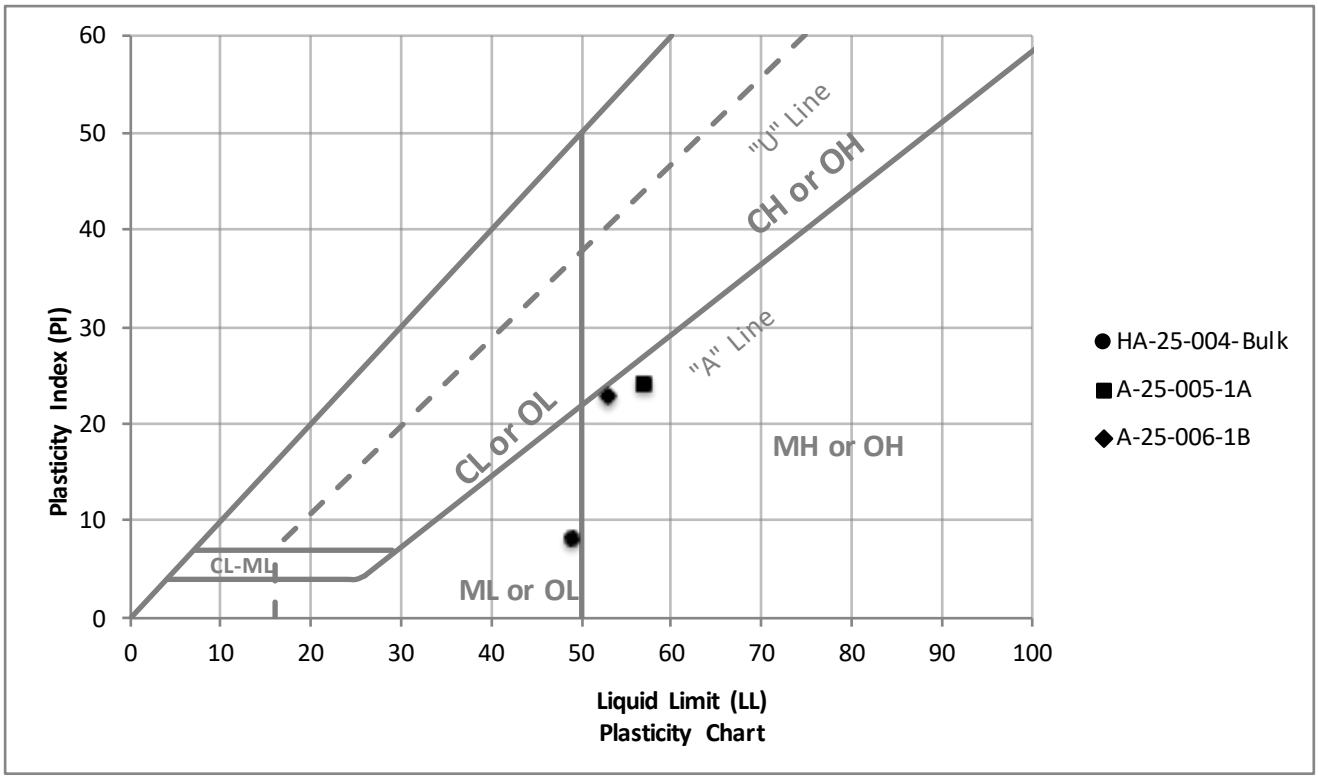
		Sieve #	Opening mm	Cummulative Mass Retained (g)	% Passing %
Cobbles		**3"**	75	0.0	100%
Gravel	Coarse	**2"**	50	0.0	100%
		1-1/2"	37.5	0.0	100%
		1"	25.0	0.0	100%
		3/4"	19.0	0.0	100%
	Fine	**1/2"**	12.5	27.6	91%
		3/8"	9.50	34.8	89%
		#4	4.75	44.1	86%
Sand	Coarse	**#10**	2.00	61.5	80%
	Medium	**#20**	0.825	93.4	69%
		#40	0.425	124.6	59%
	Fine	**#60**	0.250	145.0	52%
		#100	0.150	162.2	47%
Silt/Clay		**#200**	0.075	183.8	40%

Coefficient of Uniformity	Coefficient of Curvature
Cu = NA	Cc = NA

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/5/25
Technician: A. Madden

Plasticity Index - ASTM D4318

Sample ID	Depth (ft)	Liquid Limit	Plastic Limit	PI
HA-25-004-Bulk	0.0-10.0	49	41	8
A-25-005-1A	3.5	57	33	24
A-25-006-1B	3.0	53	30	23

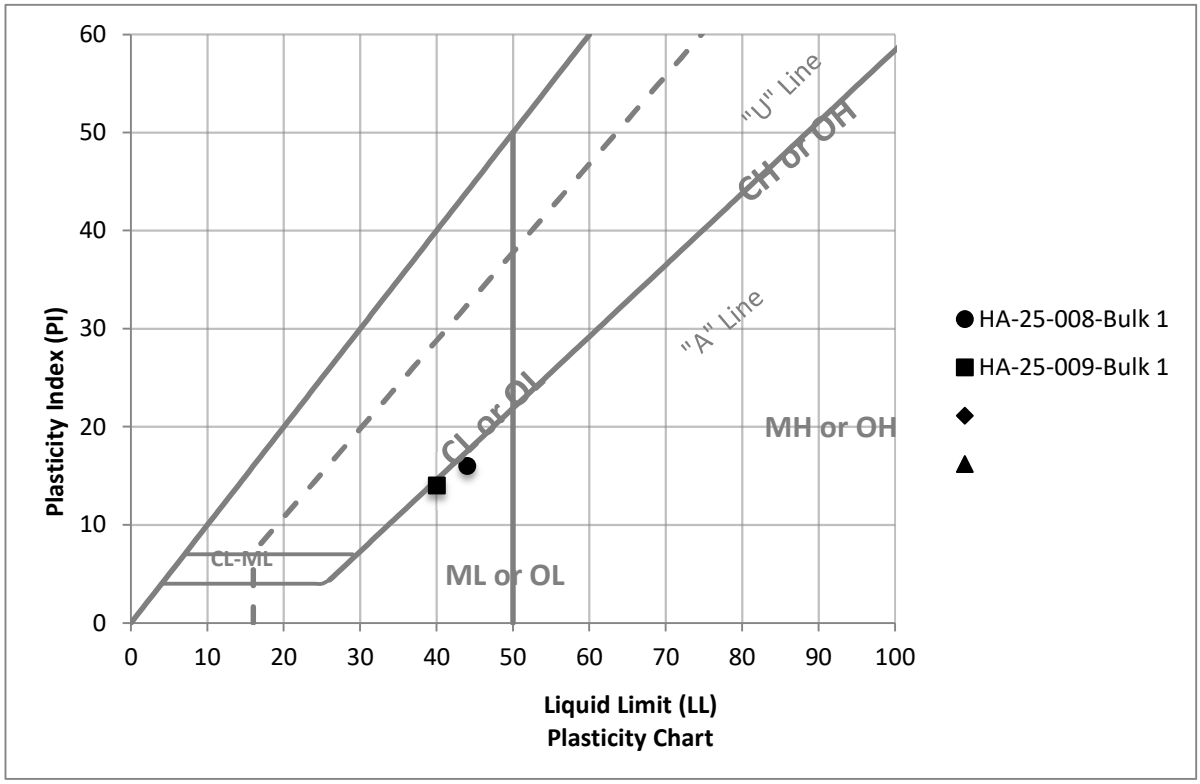


Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-11309.1
Date: 8/5/2025
Technician: A. Madden

Plasticity Index - ASTM D4318

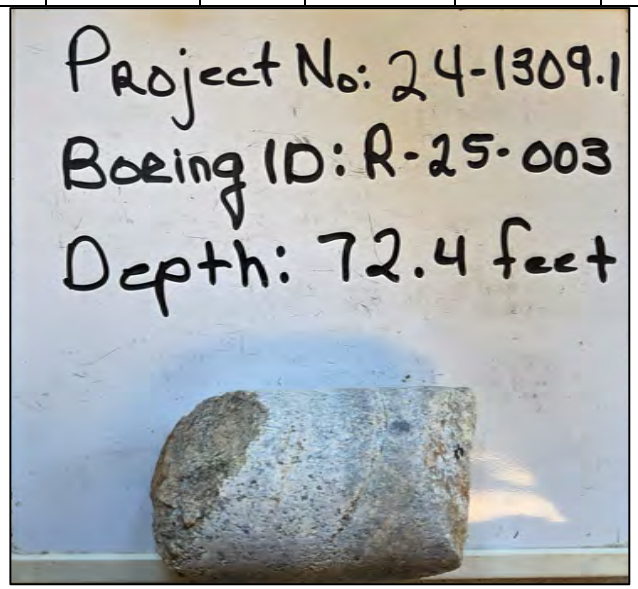
Sample ID	Depth (ft)	Liquid Limit	Plastic Limit	PI
HA-25-008-Bulk 1	0.0-3.75	44	28	16
HA-25-009-Bulk 1	0.0-4.0	40	26	14



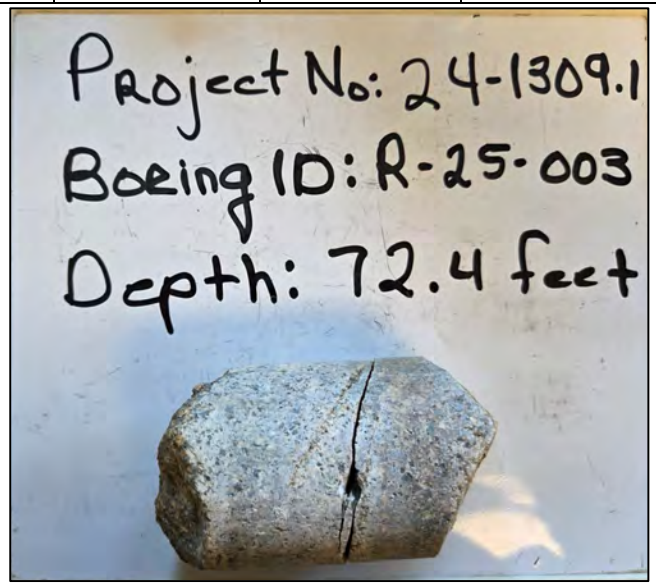
Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Date: 6/12/25
Technician: J. Slinkard

Boring	Top Hole Elev. (feet)	Core Run	Depth (feet)	Elev. (feet)	Core Diameter (inches)	Failure Load (P) (lbf)	Point Load Index (I_S) (psi)	Correlated Uniaxial Compressive Strength (psi)	Remarks/Notes
R-25-003	0	**A**	72.4		2.421	3551.29	606	15040	A-1



Before



After

Uniaxial compressive strength values based on point load test data and correlations derived from Bieniawski (1975); "Rock Mechanics for Underground Mining", Brady & Brown, 1985 (page 98-99).

Equation to Determine Uniaxial Compressive Strength:

Uniaxial Compressive Strength = $s_c = (14 + 0.175D)I_s$

Point Load Index = $I_s = P/D^2$

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

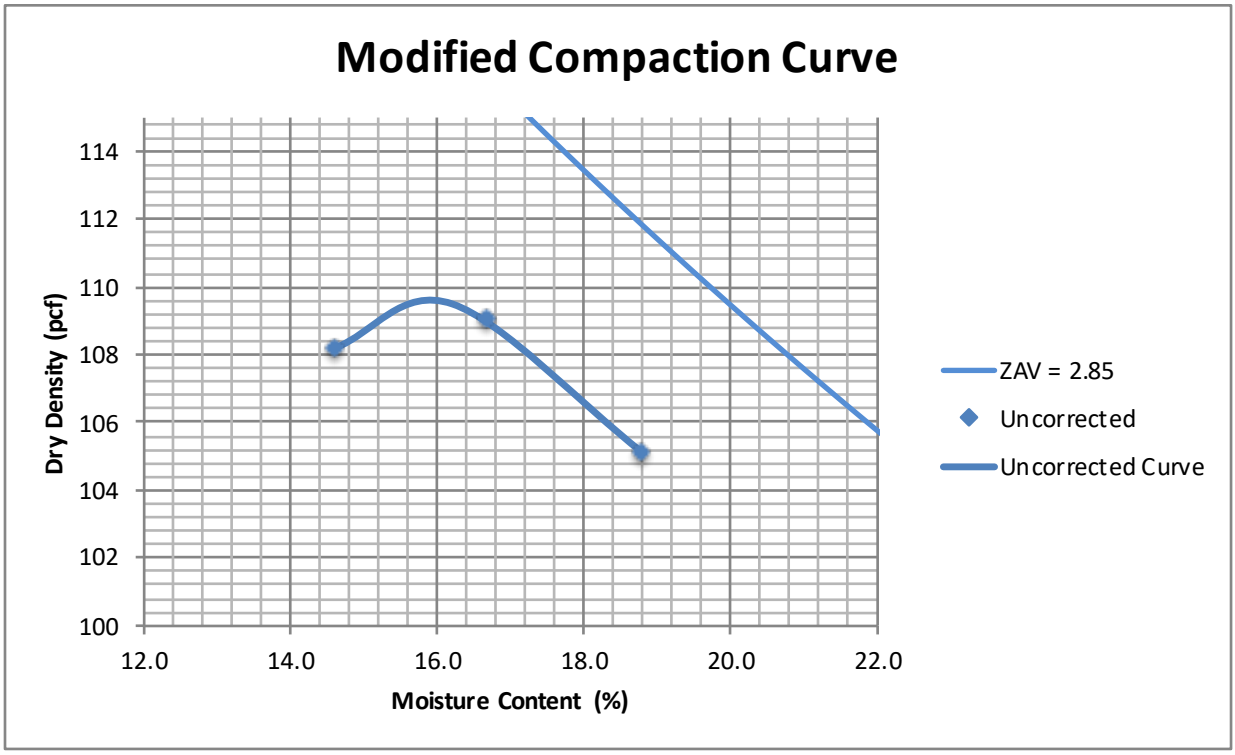
Project Name: West Point Water Supply Drought Project
Crawford File No: 24-1309.1
Technician: A. Crawford
Date: 06/04/25
Sample ID: Composite Bulk 4 and Bulk 8
Elevation: Not provided
Sample Source: Not Applicable
Intended Use: Remolded Triax
Material Type: Soil
USCS Classification: SC

Compaction Curve - ASTMD 1557

Method B

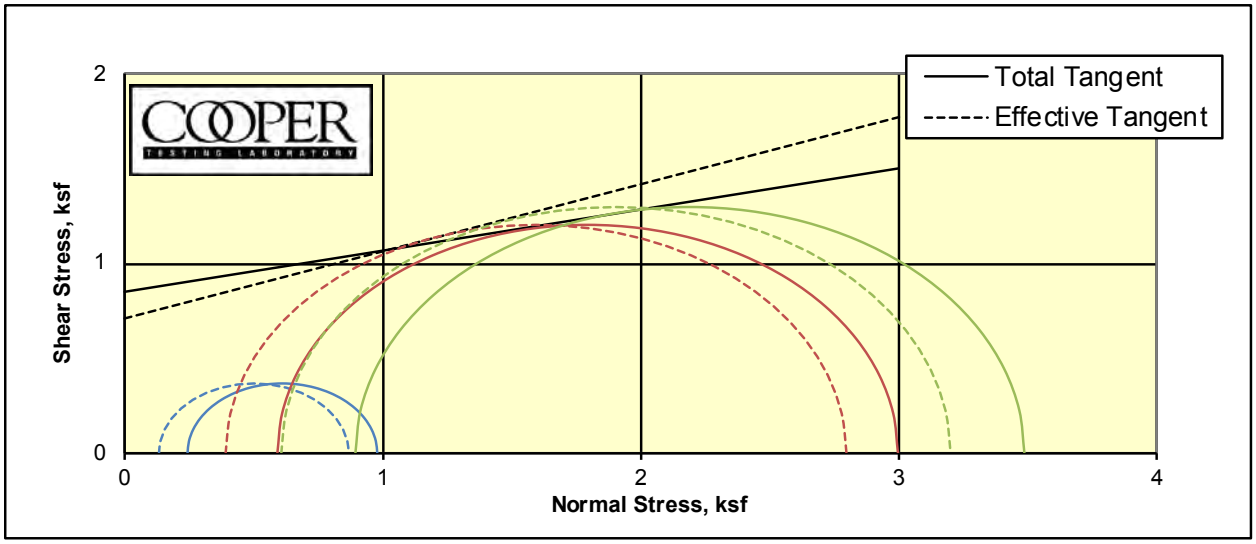
Oversize Fraction: 0.03 %

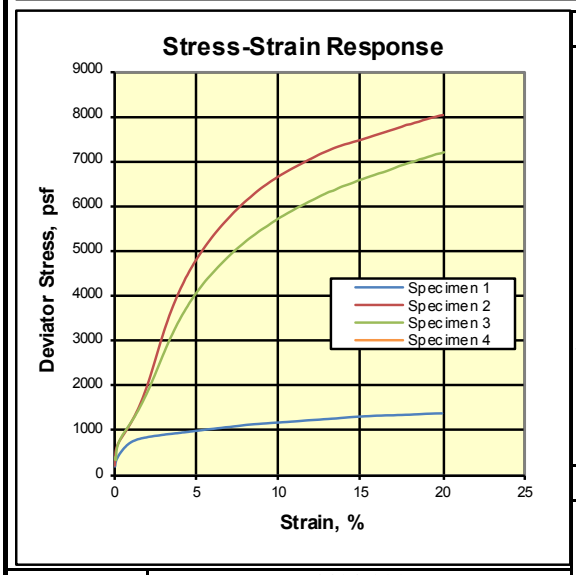
Moisture (%)	14.6	16.6	18.8		
Dry Density (pcf)	108.2	109.1	105.1		



Optimum Moisture (%)	16.2
Maximum Dry Denstiy (pcf)	109.5

Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767



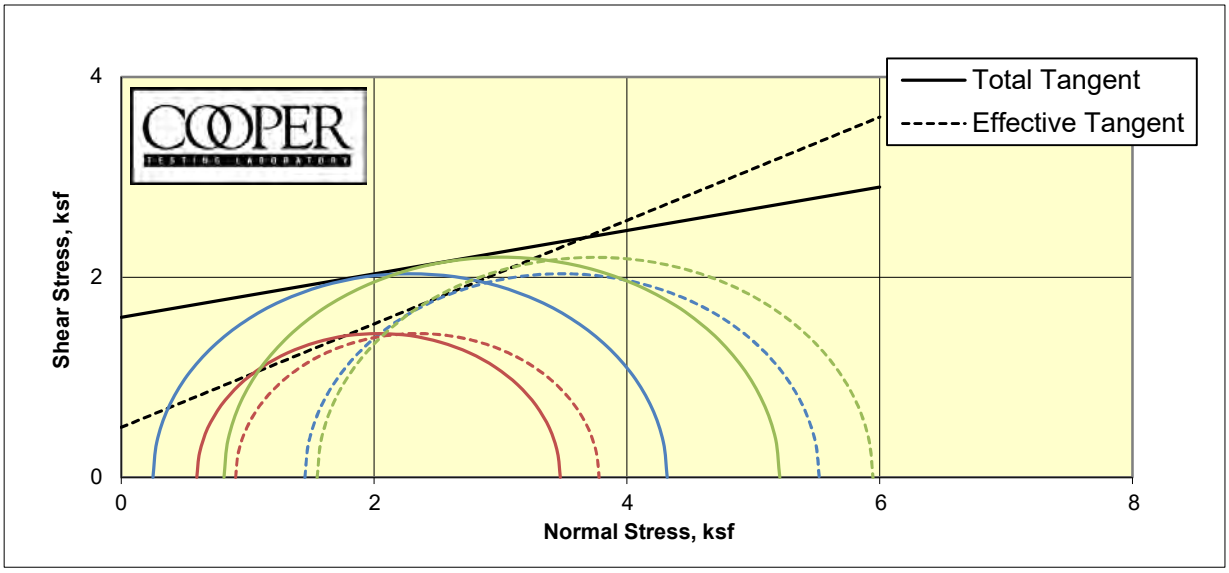


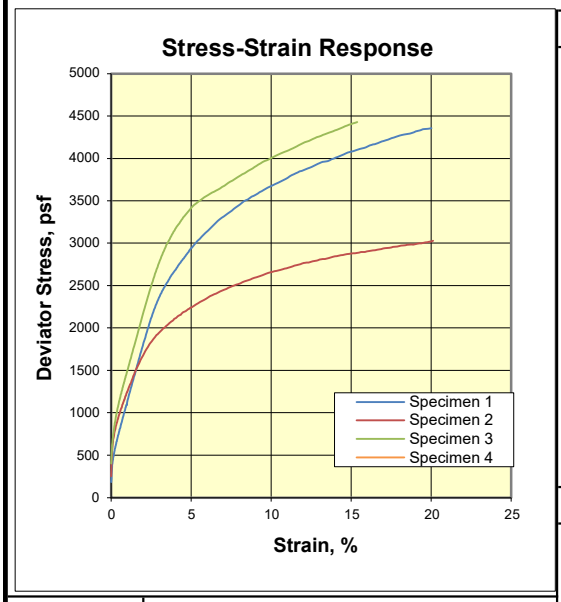
CTL Number:	1181-006		
Client Name:	Crawford & Associates		
Project Name:	West Point Water Supply Drought Project		
Project Number:	24-1309.1		
Date:	6/17/25	By:	MD/DC
Total C	0.850	ksf	
Total phi	12.2	degrees	
Eff. C	0.710	ksf	
Eff. Phi	19.5	degrees	©

Remarks: Strengths picked at the peak effective stress ratios.

Specimen	1	2	3	4
Boring	A-25-001	A-25-001	A-25-001	
Sample	1	1	1	
Depth	2.5-5.0(Tip-13")	2.5-5.0(Tip-6.5")	2.5-5.0(Tip)	
Visual Description	Dark Reddish Brown Sandy CLAY, trace Gravel & organics	Dark Reddish Brown Sandy CLAY	Dark Reddish Brown Sandy CLAY	
MC (%)	15.6	15.3	15.8	
Dry Density (pcf)	102.9	115.3	115.0	
Saturation (%)	62.5	82.9	84.9	
Void Ratio	0.699	0.516	0.520	
Diameter (in)	2.81	2.81	2.83	
Height (in)	6.00	6.00	6.00	
	Final			
MC (%)	24.5	17.9	17.6	
Dry Density (pcf)	103.0	115.9	116.4	
Saturation (%)	98.5	98.6	98.1	
Void Ratio	0.696	0.508	0.502	
Diameter (in)	2.80	2.80	2.82	
Height (in)	6.01	6.00	5.98	
Cell Pressure (psi)	82.0	83.7	86.2	
Back Pressure (psi)	80.3	79.5	80.0	
	Effective Stresses At:			
Strain (%)	0.9	2.3	2.8	
Deviator (ksf)	0.736	2.405	2.593	
Excess PP (psi)	0.8	1.4	2.0	
Sigma 1 (ksf)	0.868	2.797	3.200	
Sigma 3 (ksf)	0.133	0.391	0.607	
P (ksf)	0.501	1.594	1.904	
Q (ksf)	0.368	1.203	1.297	
Stress Ratio	6.535	7.149	5.273	
Rate (in/min)	0.0005	0.0005	0.0005	

Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767



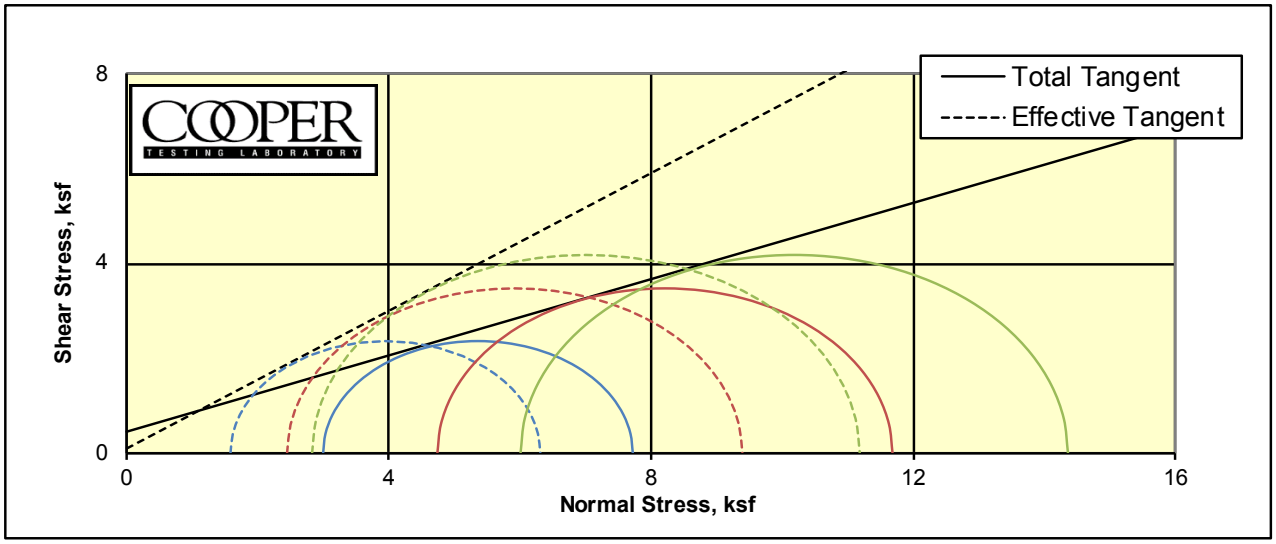


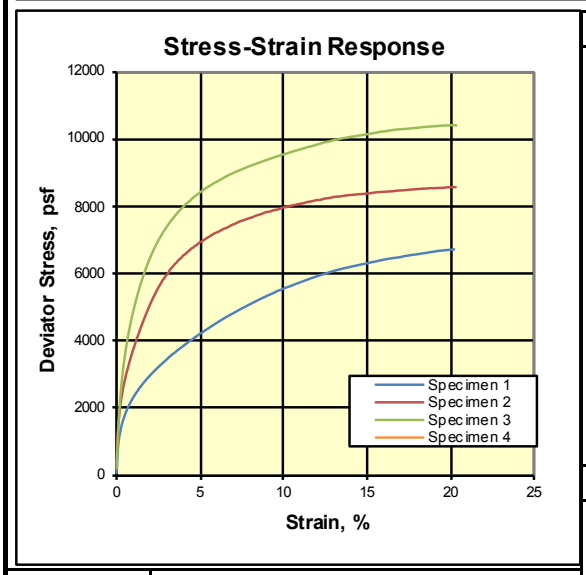
CTL Number:	1181-006		
Client Name:	Crawford & Associates		
Project Name:	West Point Water Supply Drought Project		
Project Number:	24-1309.1		
Date:	6/23/2025	By:	MD/DC
Total C	**1.600**	**ksf**	
Total phi	**12.2**	**degrees**	
Eff. C	**0.500**	**ksf**	
Eff. Phi	**27.3**	**degrees**	©

Remarks: Strengths picked at the peak effective stress ratios.

Specimen	**1**	**2**	**3**	**4**
Boring	R-25-003	R-25-003	R-25-003	
Sample	1	1	1	
Depth	2.5-5.0(Tip-13")	2.5-5.0(Tip-6.5")	2.5-5.0(Tip)	
Visual Description	Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	
MC (%)	21.4	25.0	25.6	
Dry Density (pcf)	102.7	94.2	96.3	
Saturation (%)	87.7	83.6	90.0	
Void Ratio	0.671	0.822	0.783	
Diameter (in)	2.86	2.85	2.85	
Height (in)	5.96	6.00	6.01	
	Final			
MC (%)	24.1	29.1	28.0	
Dry Density (pcf)	103.2	95.4	97.0	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.663	0.800	0.770	
Diameter (in)	2.85	2.84	2.85	
Height (in)	5.95	5.97	5.97	
Cell Pressure (psi)	82.0	84.0	86.0	
Back Pressure (psi)	80.2	79.9	80.3	
	Effective Stresses At:			
Strain (%)	15.0	15.0	15.0	
Deviator (ksf)	4.069	2.875	4.397	
Excess PP (psi)	-8.3	-2.1	-5.1	
Sigma 1 (ksf)	5.522	3.780	5.947	
Sigma 3 (ksf)	1.453	0.905	1.550	
P (ksf)	3.487	2.343	3.748	
Q (ksf)	2.035	1.438	2.199	
Stress Ratio	3.801	4.177	3.838	
Rate (in/min)	0.0005	0.0005	0.0005	

Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767



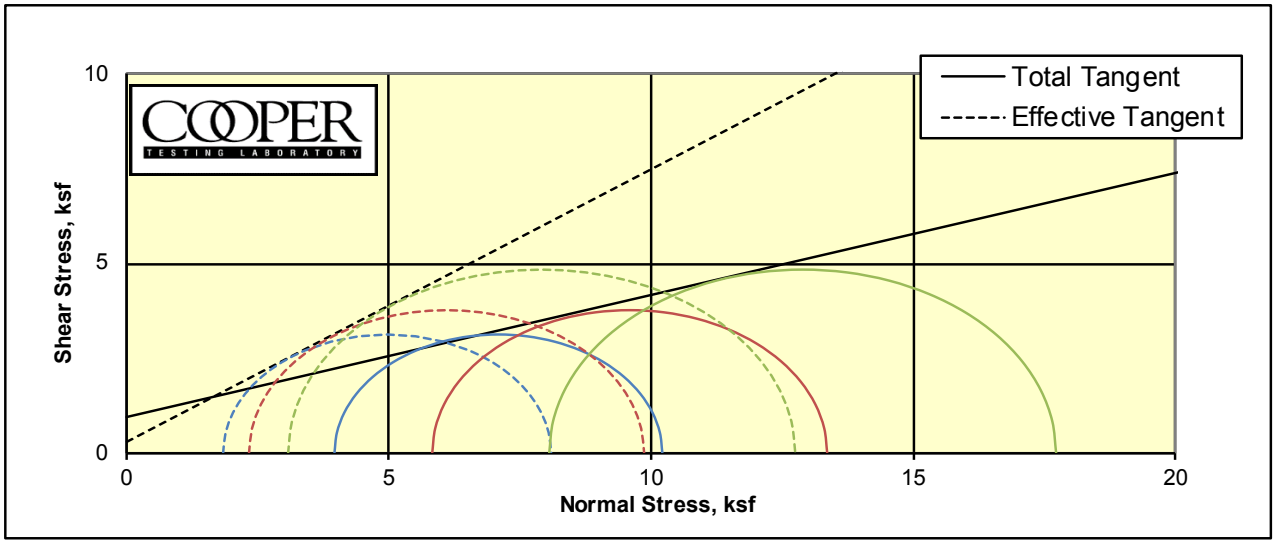


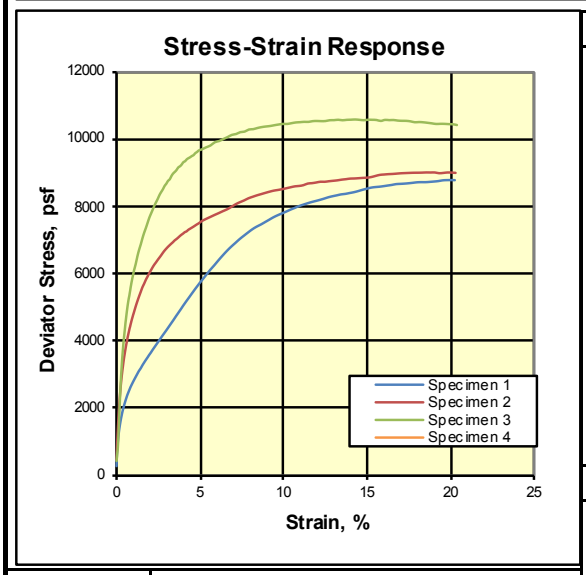
CTL Number:	1181-006		
Client Name:	Crawford & Associates		
Project Name:	West Point Water Supply Drought Project		
Project Number:	24-1309.1		
Date:	6/27/25	By:	MD/DC
Total C	0.450	ksf	
Total phi	21.9	degrees	
Eff. C	0.100	ksf	
Eff. Phi	35.9	degrees	©

Remarks: Strengths picked at the peak effective stress ratios.

Specimen	1	2	3	4
Boring	R-25-003	R-25-003	R-25-003	
Sample	8	8	8	
Depth	30-32.5(Tip-14")	30-32.5(Tip-7")	30-32.5(Tip)	
Visual Description	Strong Brown Sandy CLAY change to Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	
MC (%)	18.8	21.7	23.5	
Dry Density (pcf)	110.7	103.2	102.0	
Saturation (%)	94.0	90.0	94.4	
Void Ratio	0.550	0.663	0.684	
Diameter (in)	2.86	2.85	2.85	
Height (in)	5.96	5.96	5.96	
	Final			
MC (%)	18.6	22.4	22.7	
Dry Density (pcf)	113.6	106.2	105.7	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.512	0.616	0.624	
Diameter (in)	2.84	2.83	2.82	
Height (in)	5.90	5.87	5.86	
Cell Pressure (psi)	70.7	81.6	91.7	
Back Pressure (psi)	49.9	48.6	50.0	
	Effective Stresses At:			
Strain (%)	6.6	5.0	4.8	
Deviator (ksf)	4.727	6.946	8.355	
Excess PP (psi)	9.8	15.9	22.1	
Sigma 1 (ksf)	6.311	9.394	11.184	
Sigma 3 (ksf)	1.584	2.447	2.829	
P (ksf)	3.947	5.920	7.007	
Q (ksf)	2.364	3.473	4.177	
Stress Ratio	3.985	3.838	3.953	
Rate (in/min)	0.0005	0.0005	0.0005	

Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767



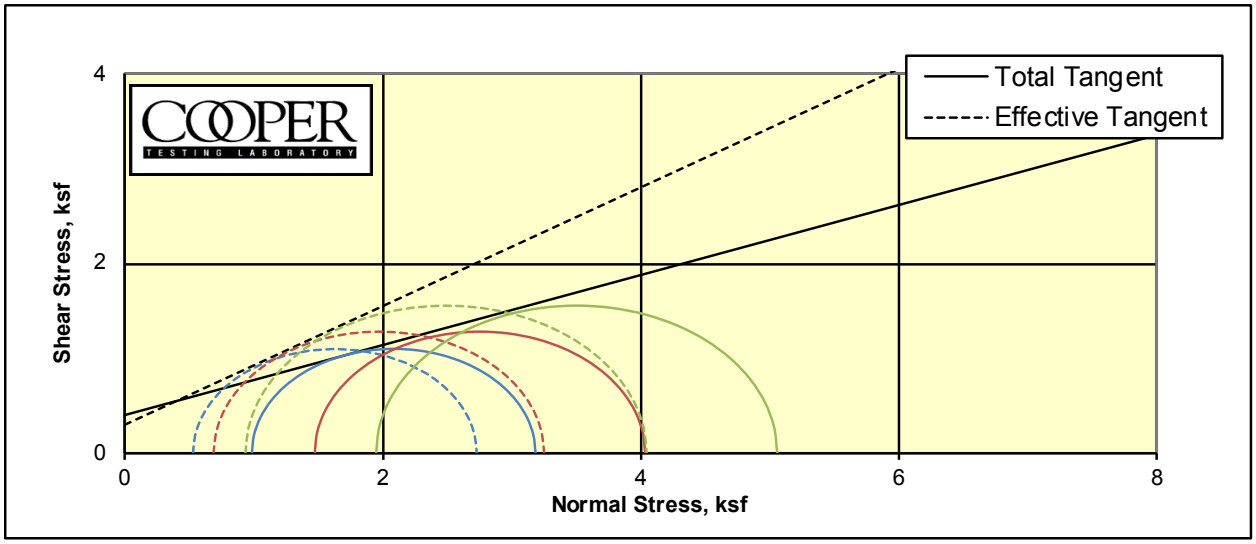


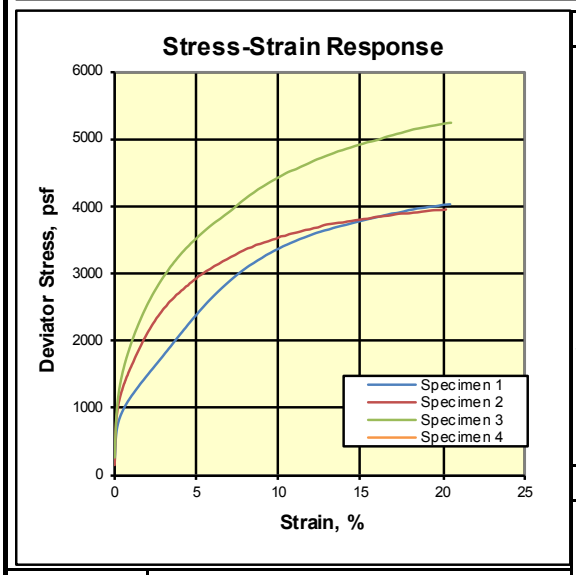
CTL Number:	1181-006		
Client Name:	Crawford & Associates		
Project Name:	West Point Water Supply Drought Project		
Project Number:	24-1309.1		
Date:	6/30/25	By:	MD/DC
Total C	0.950	ksf	
Total phi	17.8	degrees	
Eff. C	0.300	ksf	
Eff. Phi	35.7	degrees	©

Remarks: Strengths picked at the peak effective stress ratios.

Specimen	1	2	3	4
Boring	R-25-003	R-25-003	R-25-003	
Sample	10	10	10	
Depth	35-37.5(Tip-14")	35-37.5	35-37.5	
Visual Description	Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	
MC (%)	22.6	22.6	23.6	
Dry Density (pcf)	101.3	100.4	98.9	
Saturation (%)	89.6	87.6	88.1	
Void Ratio	0.695	0.710	0.735	
Diameter (in)	2.85	2.85	2.86	
Height (in)	5.99	5.98	6.00	
	Final			
MC (%)	23.4	22.9	22.8	
Dry Density (pcf)	104.5	105.3	105.5	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.642	0.630	0.627	
Diameter (in)	2.82	2.80	2.80	
Height (in)	5.91	5.89	5.89	
Cell Pressure (psi)	127.7	141.2	156.8	
Back Pressure (psi)	100.2	100.7	100.9	
	Effective Stresses At:			
Strain (%)	5.9	5.0	4.9	
Deviator (ksf)	6.256	7.536	9.671	
Excess PP (psi)	14.7	24.3	34.6	
Sigma 1 (ksf)	8.095	9.869	12.750	
Sigma 3 (ksf)	1.839	2.333	3.079	
P (ksf)	4.967	6.101	7.915	
Q (ksf)	3.128	3.768	4.836	
Stress Ratio	4.401	4.230	4.141	
Rate (in/min)	0.0005	0.0005	0.0005	

Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767



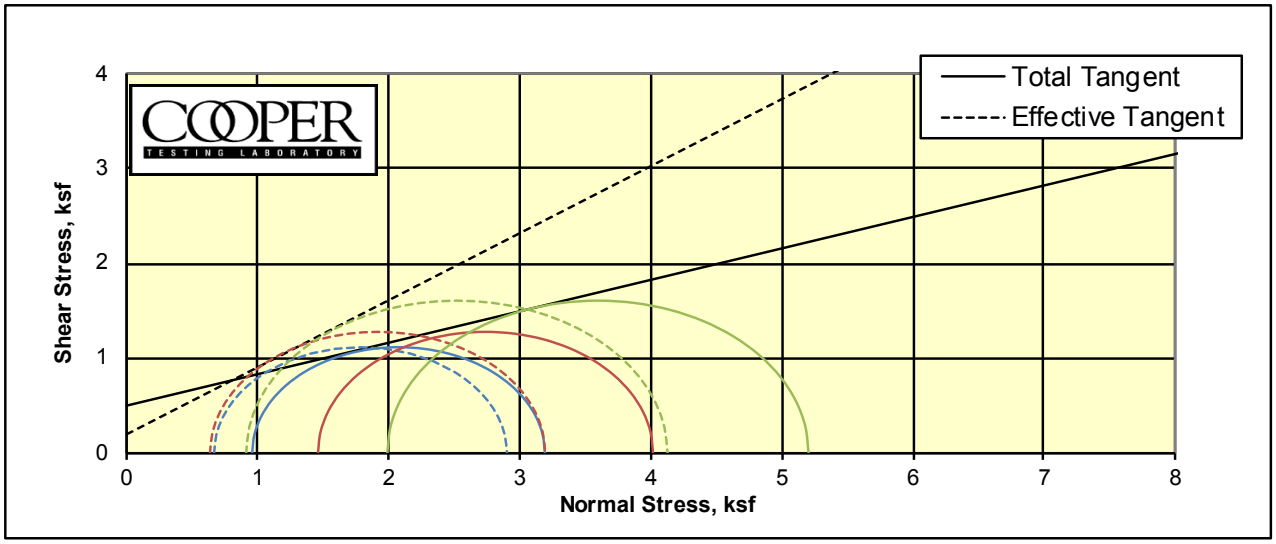


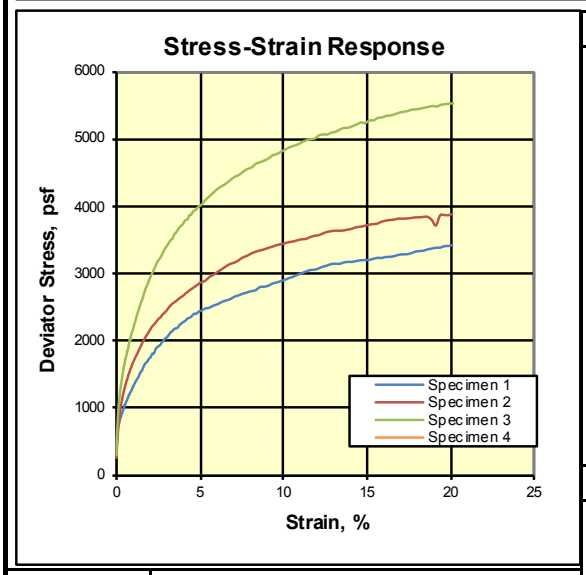
Specimen	1	2	3	4
Boring	A-25-005	A-25-005	A-25-005	
Sample	4	4	4	
Depth	15-17.5 Tip -13	15-17.5 Tip -6.5	15-17.5 Tip	
Visual Description	Dark Reddish Brown Sandy CLAY	Dark Reddish Brown Sandy CLAY	Dark Reddish Brown Sandy CLAY	
MC (%)	23.0	24.7	23.4	
Dry Density (pcf)	100.9	97.9	102.2	
Saturation (%)	90.1	90.0	94.8	
Void Ratio	0.702	0.754	0.680	
Diameter (in)	2.84	2.85	2.84	
Height (in)	6.00	6.00	6.00	
	Final			
MC (%)	24.8	25.5	23.5	
Dry Density (pcf)	102.1	100.9	104.3	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.682	0.701	0.646	
Diameter (in)	2.86	2.82	2.85	
Height (in)	5.87	5.94	5.85	
Cell Pressure (psi)	86.9	90.2	93.6	
Back Pressure (psi)	80.0	80.0	80.1	
	Effective Stresses At:			
Strain (%)	4.3	3.3	3.4	
Deviator (ksf)	2.199	2.562	3.110	
Excess PP (psi)	3.2	5.4	7.0	
Sigma 1 (ksf)	2.729	3.251	4.046	
Sigma 3 (ksf)	0.529	0.689	0.936	
P (ksf)	1.629	1.970	2.491	
Q (ksf)	1.100	1.281	1.555	
Stress Ratio	5.154	4.719	4.323	
Rate (in/min)	0.0005	0.0005	0.0005	

CTL Number:	1181-006		
Client Name:	Crawford		
Project Name:	West Point Water Supply Drought Project		
Project Number:	24-1309.1		
Date:	7/3/25	By:	MD/DC
Total C	0.400	ksf	
Total phi	20.2	degrees	
Eff. C	0.300	ksf	
Eff. Phi	32.0	degrees	©

Remarks: Strenghts picked at the peak effective stress ratios.

Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767



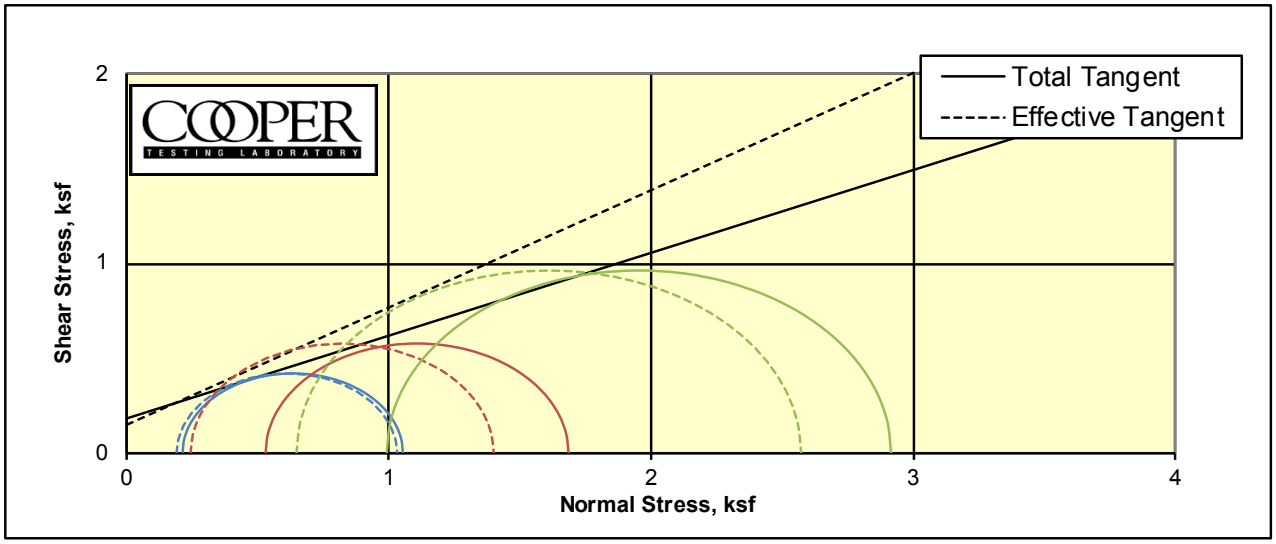


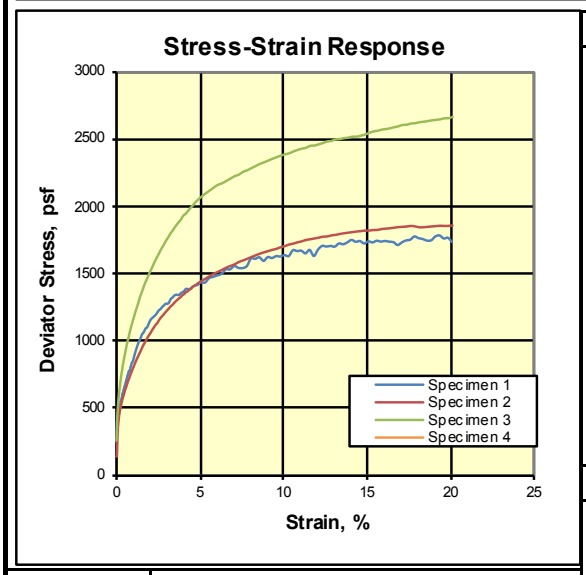
CTL Number:	1181-006		
Client Name:	Crawford & Associates		
Project Name:	West Point Water Supply Drought Project		
Project Number:	24-1309.1		
Date:	7/9/25	By:	MD/DC
Total C	0.500	ksf	
Total phi	18.3	degrees	
Eff. C	0.200	ksf	
Eff. Phi	35.2	degrees	©

Remarks: Strengths picked at the peak effective stress ratios.

Specimen	1	2	3	4
Boring	A-25-006	A-25-006	A-25-006	
Sample	4	4	4	
Depth	15-17.5(Tip-13")	15-17.5(Tip-6.5")	15-17.5(Tip)	
Visual Description	Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	
MC (%)	22.7	23.2	19.2	
Dry Density (pcf)	101.5	103.4	110.5	
Saturation (%)	90.4	96.6	95.5	
Void Ratio	0.691	0.660	0.553	
Diameter (in)	2.84	2.84	2.84	
Height (in)	6.00	6.00	6.00	
	Final			
MC (%)	24.5	23.0	18.8	
Dry Density (pcf)	102.6	105.2	113.2	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.674	0.633	0.517	
Diameter (in)	2.83	2.82	2.82	
Height (in)	5.97	5.97	5.95	
Cell Pressure (psi)	86.6	89.7	93.6	
Back Pressure (psi)	79.9	79.5	79.8	
	Effective Stresses At:			
Strain (%)	3.7	3.3	2.5	
Deviator (ksf)	2.234	2.558	3.215	
Excess PP (psi)	2.0	5.7	7.5	
Sigma 1 (ksf)	2.901	3.193	4.126	
Sigma 3 (ksf)	0.667	0.635	0.911	
P (ksf)	1.784	1.914	2.519	
Q (ksf)	1.117	1.279	1.607	
Stress Ratio	4.349	5.025	4.528	
Rate (in/min)	0.0005	0.0005	0.0005	

Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767



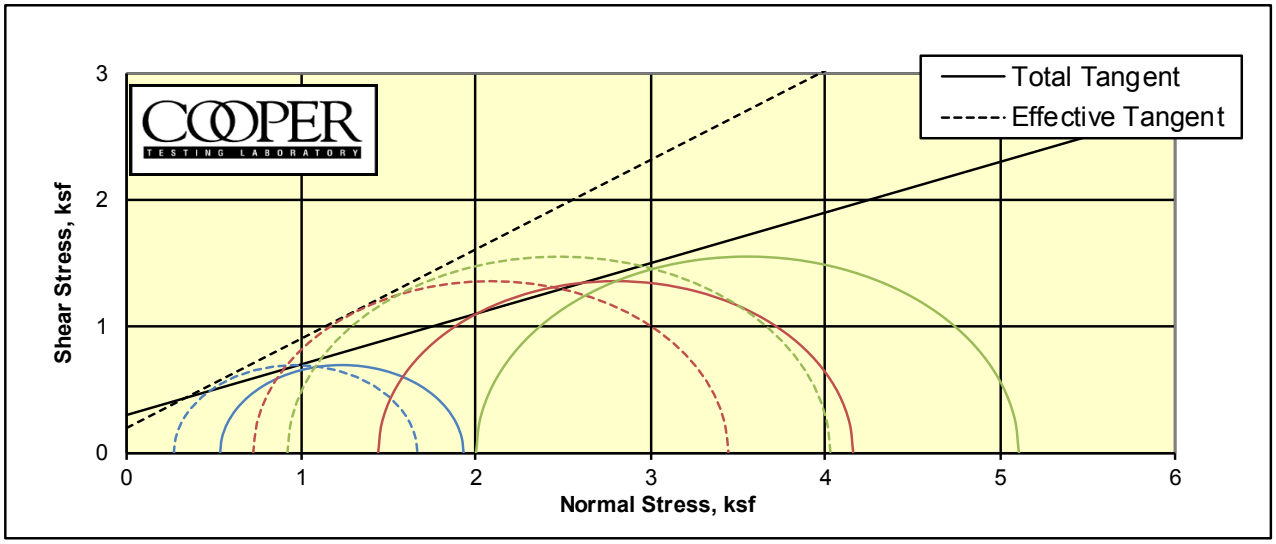


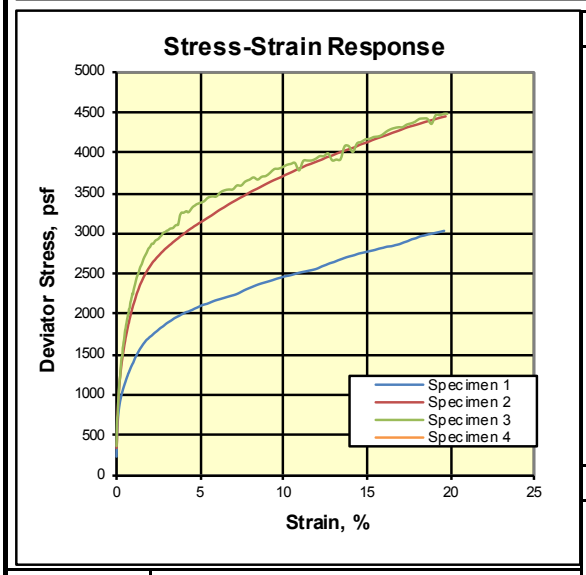
CTL Number:	1181-006		
Client Name:	Crawford & Associates		
Project Name:	West Point Water Supply Drought Project		
Project Number:	24-1309.1		
Date:	7/9/25	By:	MD/DC
Total C	0.180	ksf	
Total phi	23.6	degrees	
Eff. C	0.150	ksf	
Eff. Phi	31.7	degrees	©

Remarks: Strengths picked at the peak efffective stress ratios.

Specimen	1	2	3	4
Boring	A-25-007	A-25-007	A-25-007	
Sample	2	2	2	
Depth	5-7.5	5-7.5	5-7.5	
Visual Description	Dark Reddish Brown Clayey SAND	Dark Reddish Brown Clayey SAND	Dark Reddish Brown Clayey SAND	
MC (%)	21.1	25.2	22.3	
Dry Density (pcf)	99.2	96.3	101.7	
Saturation (%)	83.7	93.1	94.5	
Void Ratio	0.669	0.718	0.626	
Diameter (in)	2.85	2.85	2.85	
Height (in)	6.00	6.00	6.00	
	Final			
MC (%)	24.2	26.5	22.9	
Dry Density (pcf)	100.8	97.2	103.0	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.641	0.702	0.607	
Diameter (in)	2.83	2.85	2.84	
Height (in)	5.98	5.96	5.96	
Cell Pressure (psi)	82.0	83.7	85.9	
Back Pressure (psi)	80.5	80.1	79.1	
	Effective Stresses At:			
Strain (%)	0.9	2.5	4.0	
Deviator (ksf)	0.841	1.156	1.925	
Excess PP (psi)	0.2	2.0	2.4	
Sigma 1 (ksf)	1.032	1.400	2.573	
Sigma 3 (ksf)	0.191	0.244	0.648	
P (ksf)	0.611	0.822	1.610	
Q (ksf)	0.421	0.578	0.962	
Stress Ratio	5.413	5.741	3.972	
Rate (in/min)	0.0005	0.0005	0.0005	

Consolidated Undrained Triaxial Compression with Pore Pressure
ASTM D4767





CTL Number:	1181-006		
Client Name:	Crawford & Associates		
Project Name:	West Point Water Supply Drough Project		
Project Number:	24-1309.1		
Date:	7/1/25	By:	MD/DC
Total C	0.300	ksf	
Total phi	21.8	degrees	
Eff. C	0.200	ksf	
Eff. Phi	35.2	degrees	©

Remarks: Remolded to 109.5pcf @ 16.2%. The specimens swelled significantly during back pressure saturation. Strengths picked at the peak effective stress ratios.

Specimen	1	2	3	4
Boring	HA-25-008	HA-25-008	HA-25-008	
Sample	Bulk 1	Bulk 1	Bulk 1	
Depth	0-3.8	0-3.8	0-3.8	
Visual Description	Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	Reddish Brown Sandy CLAY	
MC (%)	15.8	15.8	15.9	
Dry Density (pcf)	109.5	109.6	109.4	
Saturation (%)	74.4	74.1	74.6	
Void Ratio	0.596	0.595	0.597	
Diameter (in)	2.40	2.40	2.40	
Height (in)	5.00	5.00	5.00	
	Final			
MC (%)	25.4	24.2	24.2	
Dry Density (pcf)	102.2	104.2	104.2	
Saturation (%)	100.0	100.0	100.0	
Void Ratio	0.711	0.678	0.678	
Diameter (in)	2.46	2.44	2.45	
Height (in)	5.10	5.07	5.05	
Cell Pressure (psi)	123.5	129.9	133.5	
Back Pressure (psi)	119.8	119.9	119.7	
	Effective Stresses At:			
Strain (%)	1.0	2.5	3.6	
Deviator (ksf)	1.394	2.719	3.107	
Excess PP (psi)	1.8	5.0	7.5	
Sigma 1 (ksf)	1.664	3.443	4.027	
Sigma 3 (ksf)	0.270	0.724	0.920	
P (ksf)	0.967	2.084	2.473	
Q (ksf)	0.697	1.360	1.553	
Stress Ratio	6.167	4.755	4.378	
Rate (in/min)	0.0004	0.0004	0.0004	

Appendix D

Borrow Characterization

To help evaluate the acceptability of the on-site and off-site material as a potential borrow source, we performed four hand augers at the locations shown on Figures 2a, 2b, and 2c.

Based on our subsurface investigation, the soils encountered at the borrow sites generally consisted of clayey sand. We provide a detailed description of the materials encountered at each test pit in Table 1 below.

Table 4: Hand-Auger Soil Classifications

Sample	Depth (ft)	Soil Classification
HA-25-002 (on-site)	10	Silty Sand (SM); yellowish brown; moist; mostly fine to medium sand (62%); some medium low plasticity fines (38%)
HA-25-004 (on-site)	1	Clayey Sand (SC); brown; moist; mostly fine to coarse sand (68%); some medium plasticity fines (32%)
HA-25-008 (off-site)	4	Clayey Sand (SC); reddish brown; moist; some fine to coarse sand (42%); some medium plasticity fines (46%); few fine gravel (12%)
HA-25-009 (off-site)	5	Clayey Sand (SC); reddish brown; moist; some fine to coarse sand (46%); some medium plasticity fines (40%); few fine gravel (14%)

Groundwater

Groundwater was not encountered in the hand-augers performed at the borrow sites.

Laboratory Testing

We completed the following laboratory tests on representative soil samples obtained during our field exploration in accordance with the borrow site testing frequency:

- #200 Wash (ASTM D1140)
- Atterberg Index (ASTM D4318)
- Compaction (ASTM 1557)
- Remolded Triaxial Consolidated Undrained (ASTM D4767)
- Grain Size Analysis (ASTM D6913)

The test results are summarized below.

Table 5: Laboratory Test Result Summary

Test Location	Test	Specification	Result	Qualified?
HA-25-002	Grain Size Analysis	100% ≥ 2” 20% ≤ #200	100% 38%	Yes
HA-25-004	#200 Wash	20% ≤ #200	32%	Yes
	Atterberg Index	PI < 40 ≥ 8 LL ≤ 45	PI=8 LL=49	Marginal
HA-25-008	Compaction Curve	MDD OWC	109.5 pcf 16.2%	NA
	Remolded Triaxial CU	N/A	ϕ (effective) = 35.2º ϕ (total) = 21.8º C (effective) = 200 psf C (total) = 300 psf	FIO*
	Atterberg Index	PI < 40 ≥ 8 LL ≤ 45	PI=16 LL=44	Yes
	Grain Size Analysis	100% ≥ 2” 20% ≤ #200	100% 46%	Yes
HA-25-009	Atterberg Index	PI < 40 ≥ 8 LL ≤ 45	PI=14 LL=40	Yes
	Grain Size Analysis	100% ≥ 2” 20% ≤ #200	100% 40%	Yes

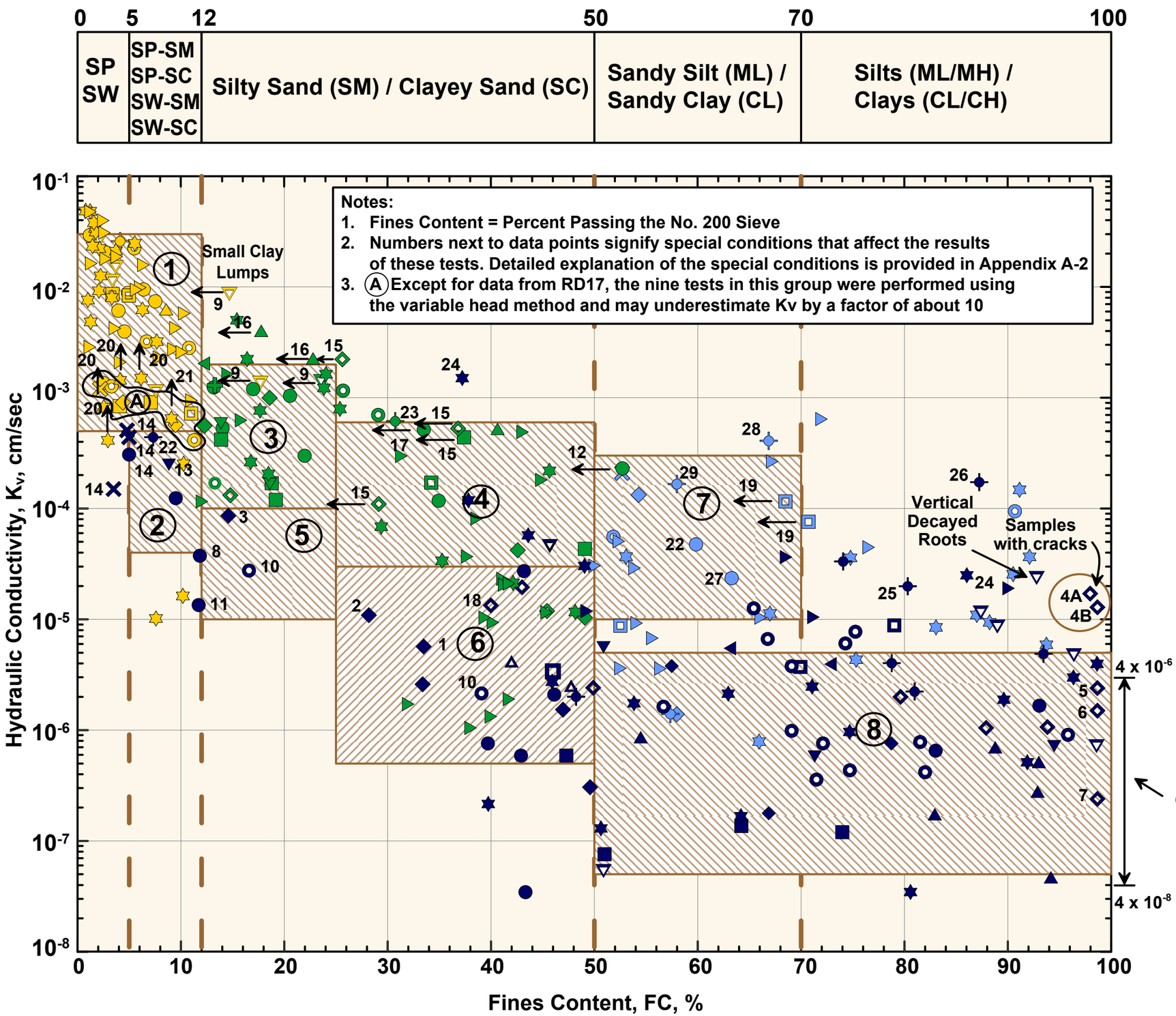
* For Information Only

In general, the soils encountered at the borrow sites consists of clayey sand that is similar to the existing dam. The laboratory testing performed on representative samples of the material encountered indicate that borrow site material meets the minimum requirements for Levee Materials, as outlined by the Sacramento District of the United States Army Corp of Engineers[8]. If another set of criteria for qualification is desired, please notify us. The data is limited; therefore, test pits should be performed before 90% design.

[8] The Geotechnical Standard of Practice, REFP10L0, Revision 2, dated 04/11/2008, United States Army Corps of Engineers, Sacramento District.

Appendix E

Permeability References



Colour	Soil Type
	Clean Sand Materials: SP and SP-SM
	Silty Sands (SM)
	Silts (SM)
	Sandy Clays, Clayey Sands and Clays (SP-SC, SC, CL, CH)

Soil Group		Range of Fines Content (%)	Range of Hydraulic Conductivity K_v (cm/sec)
1	SP, SW, SP-SM, SW-SM	0 - 12	5×10^{-4} to 3×10^{-2}
2	SP-SC, SW-SC	5 - 12	4×10^{-5} to 5×10^{-4}
3	SM	12 - 25	1×10^{-4} to 2×10^{-3}
4	SM	25 - 50	1×10^{-5} to 6×10^{-4}
5	SC	12 - 25	1×10^{-5} to 1×10^{-4}
6	SC	25 - 50	5×10^{-7} to 3×10^{-5}
7	ML Sandy silt	50 - 70	1×10^{-5} to 3×10^{-4}
8	Sandy clay, clays CL, CH	50 - 100	5×10^{-8} to 5×10^{-6}
9	Organic Clay and Silts(OH)		4×10^{-8} to 4×10^{-6} *

* Results of Eleven Tests

VARIATION OF VERTICAL HYDRAULIC CONDUCTIVITY WITH FINES CONTENT
TENTATIVE RECOMMENDATIONS FOR SEEPAGE ANALYSIS

DWR Levee Evaluation Program
ULE Special Testing Program
Various Study Area
California Department of Water Resources
Sacramento, CA

October 2013

FIGURE 4-1

Q:\132217\4 Internal Project Data\4-04 Calculations\Geotech\Lab Data\Combined NonUrban\Permeability\11x17 K vs FC2.grf
10/11/13 vsa / Fig4-1-1-CS5.ai

APPENDIX D
NOISE REPORT

Environmental Noise Assessment

West Point Regulating Noise Reservoir Project

Calaveras County, California

August 15, 2025

Project #250212

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Table of Contents

INTRODUCTION **1**

ENVIRONMENTAL SETTING **1**

BACKGROUND INFORMATION ON NOISE *1*

EXISTING NOISE AND VIBRATION ENVIRONMENTS **6**

EXISTING NOISE RECEPTORS *6*

EXISTING GENERAL AMBIENT NOISE LEVELS *6*

CONSTRUCTION NOISE ENVIRONMENT **7**

CONSTRUCTION VIBRATION ENVIRONMENT **10**

REGULATORY CONTEXT **10**

FEDERAL *10*

STATE *10*

LOCAL *10*

CRITERIA FOR ACCEPTABLE VIBRATION *15*

IMPACTS AND MITIGATION MEASURES **17**

THRESHOLDS OF SIGNIFICANCE *17*

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES *18*

REFERENCES **22**

List of Figures

Figure 1: Site Plan 2

Figure 2: Noise Measurement Sites and Receptor Locations 3

Figure 3: Construction Noise Level Contours, dBA L_{eq} 9

List of Tables

Table 1: Typical Noise Levels 4

Table 2: Summary of Existing Background Noise Measurement Data 6

Table 3: Construction Equipment Noise Levels 8

Table 4: Vibration Levels for Various Construction Equipment 10

Table 5: Part II: Land Use-Related Noise Standards 13

Table 6: Exterior Noise Level Standards 14

Table 7: Effects of Vibration on People and Buildings 16

Table 8: Construction Noise Level Increases 19

Appendices

Appendix A: Acoustical Terminology

Appendix B: Field Noise Measurement Data

INTRODUCTION

The West Point Regulating Noise Reservoir Project is located in Calaveras County, California. The project includes an increase in the reservoir capacity as well as other physical improvements to improve the functionality and safety of the reservoir. The project is bordered by existing rural single-family residences.

Figure 1 shows the project site plan. **Figure 2** shows an aerial photo of the project site.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

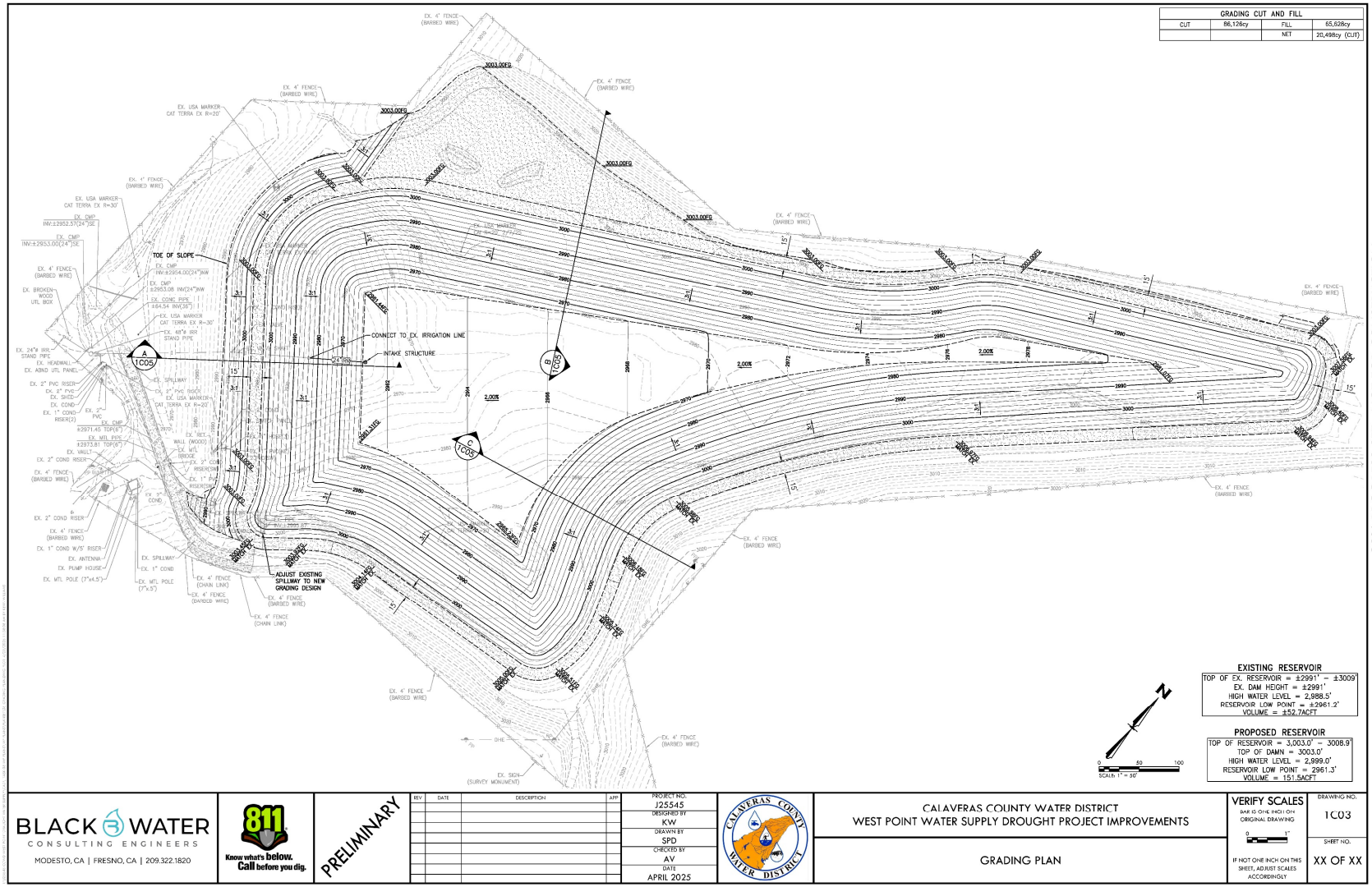
Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.



West Point Regulating Reservoir Project

Calaveras County, California

Figure 1

Project Site Plan

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West Point Regulating Reservoir Project

Calaveras County, California

Figure 2

Noise Measurement Sites

Legend

Project Site

Noise Measurement Site - Long Term

0 ft 250 ft 500 ft

Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 03/27/2025

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The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September, 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regards to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE AND VIBRATION ENVIRONMENTS

EXISTING NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise-sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include existing rural single-family residential uses surrounding the project site.

EXISTING GENERAL AMBIENT NOISE LEVELS

The existing noise environment in the project area is primarily defined by traffic on nearby roads, nature sounds, and typical residential activities. To quantify the existing ambient noise environment in the project vicinity, Saxelby Acoustics conducted continuous (24-hr.) noise level measurements at three locations on the project site. Noise measurement locations are shown on **Figure 2**. A summary of the noise level measurement survey results is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with a CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Location	Date	L_{dn}	Daytime L_{eq}	Daytime L_{50}	Daytime L_{max}	Nighttime L_{eq}	Nighttime L_{50}	Nighttime L_{max}
LT-1: 425 ft. to CL of Winton Rd.	3/25/25	60	54	45	61	54	47	64
LT-2: 390 ft. to CL of Winton Rd.	3/25/25	61	55	51	64	55	53	62
LT-3: 570 ft. to CL of Hidden Valley Rd.	3/25/25	47	42	38	57	40	39	53

- *All values shown in dBA*
- *Daytime hours: 7:00 a.m. to 10:00 p.m.*
- *Nighttime Hours: 10:00 p.m. to 7:00 a.m.*
- *Source: Saxelby Acoustics, 2025.*

CONSTRUCTION NOISE ENVIRONMENT

The Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) was used to predict noise levels for standard construction equipment used for roadway improvement projects. The assessment of potential significant noise effects due to construction is based on the standards and procedures described in the Federal Transit Authority (FTA) guidance manual and FHWA's RCNM.

The RCNM is a Windows-based noise prediction model that enables the prediction of construction noise levels for a variety of construction equipment based on a compilation of empirical data and the application of acoustical propagation formulas. It enables the calculation of construction noise levels in more detail than the manual methods, which eliminates the need to collect extensive amounts of project-specific input data. RCNM allows for the modeling of multiple pieces of construction equipment working either independently or simultaneously, the character of noise emission, and the usage factors for each piece of equipment.

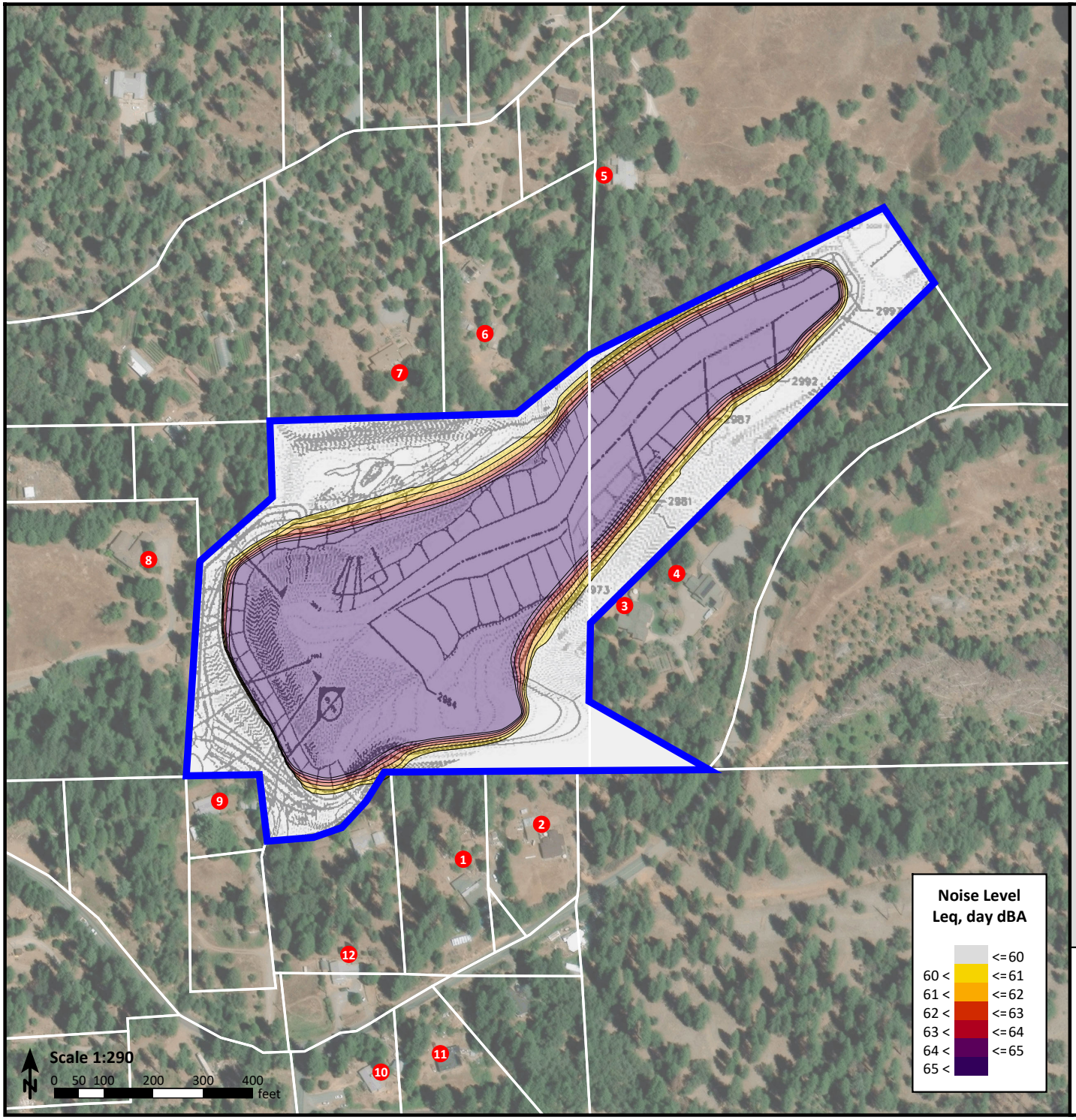
Construction noise varies depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week), and the duration of the construction work.

Noise sources in the RCNM database include actual noise levels and equipment usage percentages. This source data was used in this construction noise analysis. **Table 3** shows predicted construction noise levels for the project site.

TABLE 3: CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment	Quantity	Usage (%)	Maximum, L_{max} (dBA at 50 feet)	Hourly Average, L_{eq} (dBA at 50 feet)
Excavation Efforts				
Excavator	2	40	81	80
Dump Truck	2	40	76	75
Front End Loader	2	40	79	78
			Total:	**83**
Embankment Efforts				
Excavator	2	40	81	80
Dump Truck	2	40	76	75
Front End Loader	2	40	79	78
			Total:	**83**
Pipeline / Structures				
Excavator	1	40	81	77
Front End Loader	1	40	79	75
Backhoe	1	40	78	74
			Total:	**80**

Based upon the **Table 3** data, the loudest phases of construction on the project site would be Excavation Efforts and Embankments Efforts with an average noise exposure of 83 dBA L_{eq} at 50 feet from the center of activity. The results of the construction noise analysis are shown graphically on **Figure 3**.



West Point Regulating Reservoir Expansion

County of Calaveras, California

Figure 3

Construction Noise Levels
Leq dBA

Legend

- Project Site
- Parcels
- Receptor

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CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. **Table 4** shows the typical vibration levels produced by construction equipment.

TABLE 4: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: Transit Noise and Vibration Impact Assessment Guidelines. Federal Transit Administration. May 2006.

REGULATORY CONTEXT

FEDERAL

Not applicable

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed in more detail under the Thresholds of Significance section.

LOCAL

Calaveras County General Plan

Goals and Policies

Goal:

N-1 Policies Noise levels consistent with the County's rural atmosphere and that maintain compatibility between differing land uses, and protect the health and well-being of residents, visitors and businesses.

Policies:

N 1.1 Locate and design sensitive noise-receiving land uses so they are not exposed to noise levels exceeding noise standards set forth in Tables N-2 and N-3. (IM N-1B and N-1E)

N 1.2 Evaluate the potential impacts of noise on and from existing and planned land uses and public and private transportation facilities during the development review process using noise thresholds set forth in Tables N-2 and N-3. (IM N-1C and N-1E)

N 1.3 Determine that a potentially significant adverse noise-related impact exists when a non transportation related project (excluding temporary initial construction noise) has the potential to increase the overall ambient noise levels at the receiving land use by 3 dB or more when the ambient noise levels exceed the standards in Table Noise-2. (IM N-1E)

N 1.4 Determine that a potentially significant adverse noise-related impact exists when a project generating transportation noise (excluding temporary initial construction noise) has the potential to do one or more of the following:

- Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and
- Where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and
- Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +1.5 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant. (IM N-1C and N-1E)

N 1.5 Design and orient noise-sensitive land uses proposed adjacent to existing transportation noise sources to incorporate noise reduction techniques so that the new noise-sensitive development will not be affected by noise that exceeds the limits in Table N-2. (IM N-1B, N-1D and N-1E)

N 1.6 Design and locate new roads creating transportation noise sources so that existing noise sensitive land uses will not be exposed to noise levels that exceed the standards shown in Table N-2 or Policy N 1.4. (IM N-1B, N-1C and N-1E)

N 1.7 New development of noise sensitive land uses adjacent to existing stationary noise sources or land designated on the General Plan Land Use Maps as industrial or resource production lands shall be designed to avoid exposure to noise levels in excess of those in Table N-3. (IM N-1B and N-1E)

N 1.8 Single event impulsive noise shall not exceed a peak linear overpressure of 122 dB, or a C-weighted Sound Exposure Level (SEL) of 98 dBC. The cumulative noise level from impulsive sounds such as gunshots and blasting shall not exceed 60 dB LCdn or CNELC on any given day. These standards shall be applied at the property line of a receiving land use. (IM N-1A)

N 1.9 Minimize noise-sensitive development in identified high noise areas surrounding the Calaveras County Airport and ensure that potential new property owners are made aware of existing and anticipated noise levels associated with the airport. (IM N-1D)

N 1.10 Integrate the goals, policies and programs of the Calaveras County Airport Land Use Compatibility Plan in planning decisions as necessary to insure compatibility between noise-generating and noise-sensitive land uses. (IM N-1D)

N 1.11 Continue to maintain a County noise ordinance that addresses, at a minimum, the protection of public health, safety, and welfare relative to noise; establishes maximum noise generation levels for new noise sources and receptors; addresses construction noise; identifies exemptions from noise standards, establishes standard practices for reducing noise levels from Transportation Noise Sources and commonly occurring Non Transportation Noise Sources, and referencing the Right-to-Farm Ordinance. (IM N-1A, N-1B and N-1D)

N 1.12 Recognize the right of legally pre-existing noise-generating operations to continue operating. (IM N-1A)

N 1.13 Applicants for development projects that are likely to produce excessive noise that may affect noise sensitive land uses shall provide to the County an acoustic analysis which shall be incorporated into the project review process. (IM N-1E)

N 1.14 Limit the use of heavy-duty vibration-generating construction equipment, such as vibratory rollers, within close proximity of existing buildings, particularly buildings of weak structural integrity and/or historical significance to ensure that groundborne vibration shall not exceed 0.2 in/sec PPV at the nearest sensitive receptor. For construction projects where vibration-intensive activities are anticipated, a designated person shall be responsible for registering and investigating claims of excessive vibration. The contact information of such person shall be clearly posted on the construction site. (IM N-1D)

TABLE 5: PART II: LAND USE-RELATED NOISE STANDARDS

Table N-3 Maximum Allowable Noise Exposure from Stationary Noise Sources To Noise Sensitive Land Uses (Outdoor Activity Area)		
Noise Level Descriptor	**Daytime (7 a.m. to 10 p.m.)**	**Nighttime (10 p.m. to 7 a.m.)**
Hourly L_{eq}, dB	55	45

a. The County can impose noise level standards which are up to 5 dB less than those specified in this table where existing ambient noise levels are substantially lower than the thresholds established in this table. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings)

b. An outdoor activity area is a location outside of the immediate structure where formal or informal activities are likely to happen. For example, anywhere on a residential property could be an outdoor activity area, while the outdoor activity area for a school could be a playground or sporting fields, and for a hospital could be an exterior patio or exercise area. Where the location of an outdoor activity area is unknown, the exterior noise level standard shall be applied at the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes or similar land uses, a common area such as a pool or recreation area may be designated as the outdoor activity area.

c. Each of the noise levels specified above shall be lowered by five dB for simple tone noises (e.g., noises consisting primarily of speech or music), or for recurring impulsive noises (e.g., humming sounds, outdoor speaker systems). Note that the noise levels provided are hourly averages (Leq) and are not 24-hour weighted averages (CNEL, L_{dn})

Stationary noise sources typically of concern include, but are not limited to: Commercial HVAC systems, cooling towers/evaporative condensers, pump stations, lift stations, emergency generators, boilers, steam valves, steam turbines, generators, fans, air compressors, heavy equipment, conveyor systems, transformers, pile drivers, grinders, drill rigs, gas or diesel motors, welders, cutting equipment, outdoor speakers, blowers.

Uses that may typically produce noise sources described above include industrial facilities, pump stations, truck operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docs, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, mining, sand and gravel operations and athletic fields.

County of Calaveras Municipal Code

9.02.030 Sound level limitations.

A. No person shall cause, allow, or permit the operation of any sound source on property or any public space or public right-of-way in such a manner as to create a sound level that exceeds the levels listed in Table 1. If all provisions of Subsection 9.02.060D. are complied with, this section shall not apply to construction equipment used in connection with construction operations.

TABLE 6: EXTERIOR NOISE LEVEL STANDARDS

Land Use Type*	Sound Level (A-Weighted) Decibels	
	7:00 a.m.—10:00 p.m.**	10:00 p.m.—7:00 a.m.
Residential	60	50
Commercial	70	60
Industrial (Industry)	75	65

**As defined in Title 17 of the Calaveras County Code.*
***Subsection 9.02.050E provides an extension to midnight on Friday and Saturday for the events listed in the provision.*

Each of the sound level standards specified in **Table 6** shall be reduced by five dBA for pure tone noises. However, in no case shall the exterior noise level standard be lower than the ambient sound level plus five dBA.

(Ord. No. 3013, § III, 9-25-2012)

9.02.060 Exemptions.

The following are exempt from this chapter:

A. Sound from any activity on a school campus during normal operating hours or in conjunction with a school event.
B. Sound from emergency signaling devices or for the purpose of alerting persons to the existence of an emergency or generated in the performance of emergency work or involving the execution of the duties of duly authorized governmental personnel and others providing emergency response to the general public, including but not limited to sworn peace officers, emergency personnel, utility personnel, and the operation of emergency response vehicles and equipment;
C. Sound from church bells and chimes when a part of a religious observance or service.
D. Sound from construction activity, provided that all construction in or adjacent to residential areas shall be limited to the daytime hours between seven a.m. and six p.m., unless otherwise subject to conditions in a valid discretionary land use permit that addresses construction noise associated with the project.
E. Sound from gunfire occurring while hunting consistent with all state laws on private property.
F. Sound from gunfire occurring while target shooting is subject to Chapter 9.12 of this code.
G. Sound regulated by the California Vehicle Code.
H. Sound from situations within the jurisdiction of the Federal Occupational Safety and Health Administration.

I. Sound from situations within the jurisdiction of the Federal Aviation Administration.
J. Sound from any land use for which a valid discretionary land use permit, such as a conditional use permit, administrative use permit, or temporary use permit has been issued by the county which regulates sound impacts specific to the use and which are separate and independent of this chapter.
K. Sound from existing legal non-conforming uses, or existing permitted, industrial uses that are in compliance with all applicable laws, rules and regulations and which do not significantly change in existing on-site activities, or result in a change in the number of days or daily hours of operation.
L. Sound generated from any event held by the county.
M. Sound from any agricultural operations subject to Chapter 14.02 of this code.
N. Sound from any mining operation in conformance with its SMARA provisions.
O. Sound from any activities subject to Chapter 6.10 of this code.
P. Sound generated from any event held at the County fairgrounds.

(Ord. No. 3013, § III, 9-25-2012)

CRITERIA FOR ACCEPTABLE VIBRATION

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 7**, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 7 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 7: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/second	in/second		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Transportation Related Earthborne Vibrations. Caltrans. TAV-02-01-R9601. February 20, 2002.

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. Significance criteria for noise impacts are drawn from CEQA Guidelines Appendix G (Items XI [a-c]).

Would the project:

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

b. Generate 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?

Noise Level Increase Criteria for Long-Term Project-Related Noise Level Increases

Calaveras County provides the following criteria for determination of significant long-term impacts:

N 1.4 Determine that a potentially significant adverse noise-related impact exists when a project generating transportation noise (excluding temporary initial construction noise) has the potential to do one or more of the following:

- Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and
- Where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant; and
- Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +1.5 dB L_{dn} increase in noise levels due to roadway improvement projects will be considered significant. (IM N-1C and N-1E)

Temporary Construction Noise Impacts

With temporary noise impacts (construction), identification of “substantial increases” depends upon the duration of the impact, the temporal daily nature of the impact, and the absolute change in decibel levels. Per the Calaveras County Municipal Code, construction activities are exempt from the noise ordinance provided that all construction in or adjacent to residential areas shall be limited to the daytime hours between seven a.m. and six p.m., unless otherwise subject to conditions in a valid discretionary land use permit that addresses construction noise associated with the project (9.02.060).

The County has not adopted any formal standard for evaluating temporary construction noise which occurs within allowable hours. For short-term noise associated with Project construction, Saxelby Acoustics recommends use of the Caltrans increase criteria of 12 dBA (Caltrans Traffic Noise Protocol, 2020), applied to existing residential receptors in the project vicinity. This level of increase is approximately equivalent to a doubling of sound energy and has been the standard of significance for Caltrans projects at the state level for many years. Application of this standard to construction activities is considered reasonable considering the temporary nature of construction activities.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 1: ***Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

Traffic Noise Level Increases

The proposed project is not predicted to substantial new project traffic. Therefore, this is a ***less-than-significant*** impact.

Project-Related Operation Noise Levels

The proposed project is not predicted to utilize any long-term noise-generating equipment on the project site. Therefore, the project would not exceed the County's General Plan or Municipal Code noise level standards and would not cause an increase above ambient noise levels. Therefore, this is a ***less-than-significant*** impact.

Construction Noise (Short-Term)

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Construction activities would be temporary in nature and are expected to occur during normal daytime working hours. Noise would also be generated during the construction phase by increased truck traffic on area roadways. A project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration and would occur during daytime hours.

Caltrans defines a significant increase due to noise as an increase of 12 dBA over existing ambient noise levels; Saxelby Acoustics used this criterion to evaluate increases due to construction noise associated with the project. Construction noise levels were modeled using the input data shown in **Table 3** and evaluated for significance in **Table 8** below. **Figure 3** shows modeled construction noise level contours as well as the locations of the analyzed receptors.

TABLE 8: CONSTRUCTION NOISE LEVEL INCREASES

Receptor	Representative Measurement Location	Existing Ambient (dBA L_{eq})	Construction Noise (dBA L_{eq})	Ambient + Construction (dBA L_{eq})	Difference (dBA L_{eq})	Exceeds 12 dB?
1	LT-1	54.3	48.5	55.3	1.0	No
2	LT-1	54.3	48.6	55.3	1.0	No
3	LT-1	54.3	54.1	57.2	2.9	No
4	LT-1	54.3	50.4	55.8	1.5	No
5	LT-3	42.3	43.2	45.8	3.5	No
6	LT-3	42.3	49.3	50.1	7.8	No
7	LT-3	42.3	49.2	50.0	7.7	No
8	LT-3	42.3	45.2	47.0	4.7	No
9	LT-2	54.7	45.9	55.2	0.5	No
10	LT-2	54.7	31.9	54.7	0.0	No
11	LT-2	54.7	31.9	54.7	0.0	No
12	LT-2	54.7	39.0	54.8	0.1	No

As shown in **Table 8**, the proposed project is predicted to generate construction noise level increases of up to 7.8 dBA L_{eq} at the existing sensitive receptors.

Although construction activities are temporary in nature and would occur during normal daytime working hours, construction-related noise could result in sleep interference at existing noise-sensitive land uses in the vicinity of the construction if construction activities were to occur outside the normal daytime hours. Therefore, impacts resulting from noise levels temporarily exceeding the threshold of significance due to construction would be considered ***potentially significant***. Mitigation measure 1(a) would reduce construction noise impacts to ***less-than-significant***.

Mitigation Measures

1(a) The County shall establish the following as conditions of approval for any permit that results in the use of construction equipment:

- Construction shall be limited to 7:00 a.m. to 6:00 p.m.
- All construction equipment powered by internal combustion engines shall be properly muffled and maintained.
- Quiet construction equipment, particularly air compressors, are to be selected whenever possible.
- All stationary noise-generating construction equipment such as generators or air compressors are to be located as far as is practical from existing residences. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- Unnecessary idling of internal combustion engines is prohibited.
- The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Timing/Implementation: Implemented prior to approval of grading and/or building permits
Enforcement/Monitoring: Calaveras County

Implementation of mitigation measures 1(a) would help to reduce construction-generated noise levels. With mitigation, this impact would be considered ***less-than-significant***.

Impact 2: Would the project generate excessive groundborne vibration or groundborne noise levels?

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The **Table 4** data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located further than 26 feet from typical construction activities. At distances greater than 26 feet construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact and no mitigation is required.

Impact 3: ***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?***

There are no airports within two miles of the project vicinity. Therefore, this impact is not applicable to the proposed project.

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Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

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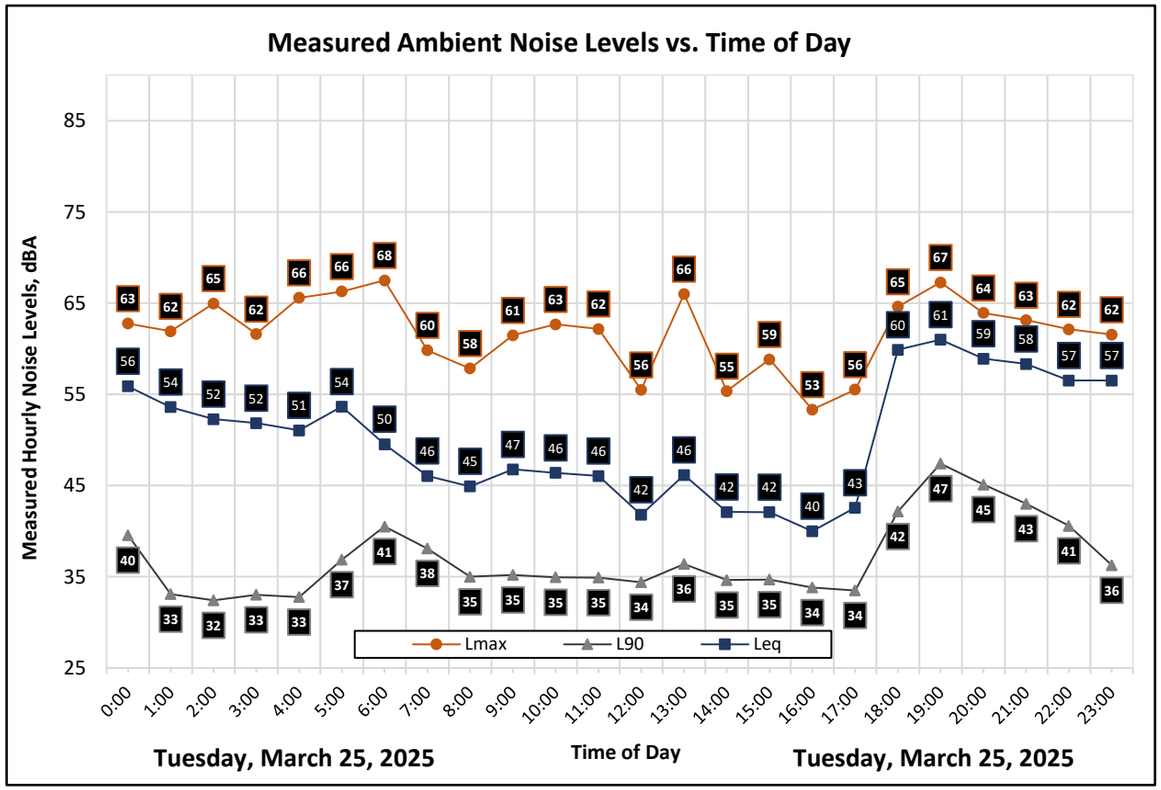
Appendix B: Continuous Long-Term Ambient Noise Measurement Results

Appendix B1: Continuous Noise Monitoring Results

Site: LT-1
Project: West Point Regulating Reservoir Project
Meter: LDL 820-1
Location: Southeastern Project Boundary
Calibrator: CAL200
Coordinates: (38.4103229, -120.5049576)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Tuesday, March 25, 2025	0:00	56	63	53	40
Tuesday, March 25, 2025	1:00	54	62	44	33
Tuesday, March 25, 2025	2:00	52	65	40	32
Tuesday, March 25, 2025	3:00	52	62	39	33
Tuesday, March 25, 2025	4:00	51	66	39	33
Tuesday, March 25, 2025	5:00	54	66	48	37
Tuesday, March 25, 2025	6:00	50	68	46	41
Tuesday, March 25, 2025	7:00	46	60	43	38
Tuesday, March 25, 2025	8:00	45	58	42	35
Tuesday, March 25, 2025	9:00	47	61	41	35
Tuesday, March 25, 2025	10:00	46	63	41	35
Tuesday, March 25, 2025	11:00	46	62	40	35
Tuesday, March 25, 2025	12:00	42	56	39	34
Tuesday, March 25, 2025	13:00	46	66	41	36
Tuesday, March 25, 2025	14:00	42	55	39	35
Tuesday, March 25, 2025	15:00	42	59	38	35
Tuesday, March 25, 2025	16:00	40	53	37	34
Tuesday, March 25, 2025	17:00	43	56	38	34
Tuesday, March 25, 2025	18:00	60	65	60	42
Tuesday, March 25, 2025	19:00	61	67	62	47
Tuesday, March 25, 2025	20:00	59	64	59	45
Tuesday, March 25, 2025	21:00	58	63	59	43
Tuesday, March 25, 2025	22:00	57	62	56	41
Tuesday, March 25, 2025	23:00	57	62	57	36

Statistics	Leq	Lmax	L50	L90
Day Average	54	61	45	38
Night Average	54	64	47	36
Day Low	40	53	37	34
Day High	61	67	62	47
Night Low	50	62	39	32
Night High	57	68	57	41
Ldn	60	Day %		64
CNEL	61	Night %		36

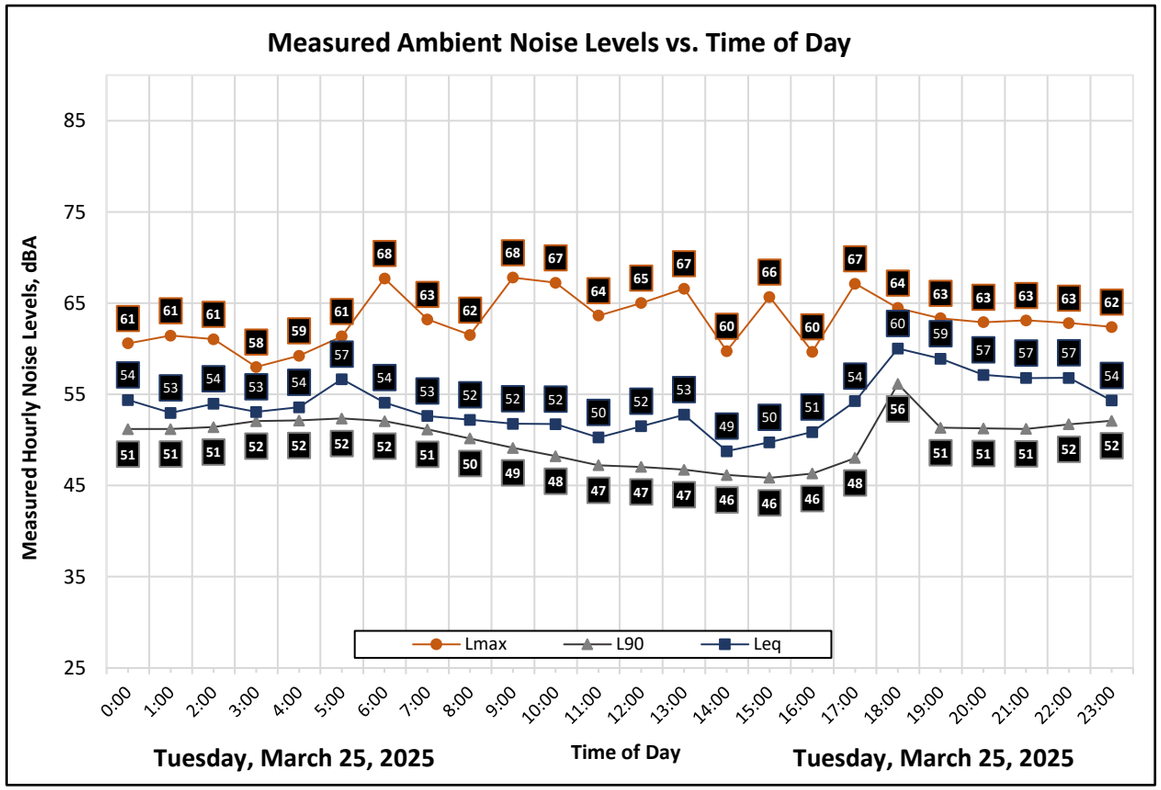


Appendix B2: Continuous Noise Monitoring Results

Site: LT-2
Project: West Point Regulating Reservoir Project
Meter: LDL 820-5
Location: Southern Project Boundary
Calibrator: CAL200
Coordinates: (38.4103244, -120.5067101)

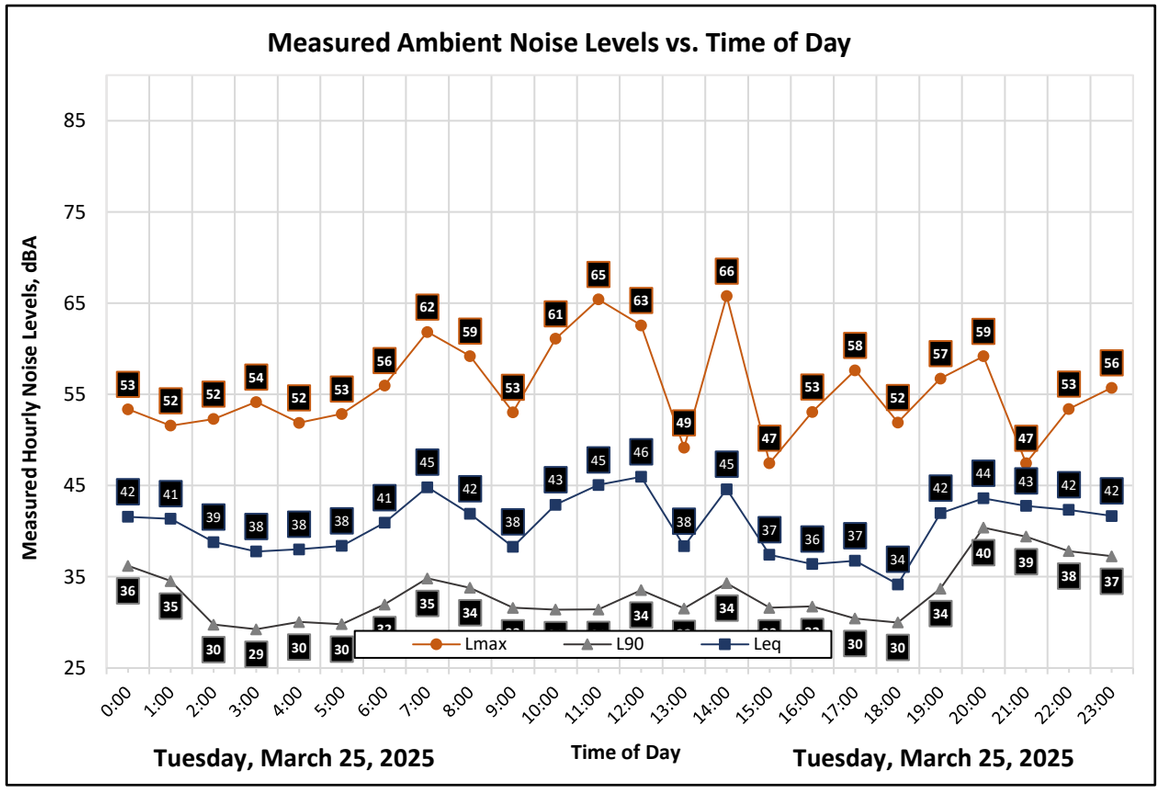
Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Tuesday, March 25, 2025	0:00	54	61	52	51
Tuesday, March 25, 2025	1:00	53	61	52	51
Tuesday, March 25, 2025	2:00	54	61	52	51
Tuesday, March 25, 2025	3:00	53	58	53	52
Tuesday, March 25, 2025	4:00	54	59	53	52
Tuesday, March 25, 2025	5:00	57	61	56	52
Tuesday, March 25, 2025	6:00	54	68	53	52
Tuesday, March 25, 2025	7:00	53	63	52	51
Tuesday, March 25, 2025	8:00	52	62	51	50
Tuesday, March 25, 2025	9:00	52	68	50	49
Tuesday, March 25, 2025	10:00	52	67	49	48
Tuesday, March 25, 2025	11:00	50	64	48	47
Tuesday, March 25, 2025	12:00	52	65	48	47
Tuesday, March 25, 2025	13:00	53	67	48	47
Tuesday, March 25, 2025	14:00	49	60	47	46
Tuesday, March 25, 2025	15:00	50	66	47	46
Tuesday, March 25, 2025	16:00	51	60	48	46
Tuesday, March 25, 2025	17:00	54	67	51	48
Tuesday, March 25, 2025	18:00	60	64	60	56
Tuesday, March 25, 2025	19:00	59	63	59	51
Tuesday, March 25, 2025	20:00	57	63	57	51
Tuesday, March 25, 2025	21:00	57	63	54	51
Tuesday, March 25, 2025	22:00	57	63	56	52
Tuesday, March 25, 2025	23:00	54	62	53	52

Statistics	Leq	Lmax	L50	L90
Day Average	55	64	51	49
Night Average	55	62	53	52
Day Low	49	60	47	46
Day High	60	68	60	56
Night Low	53	58	52	51
Night High	57	68	56	52
Ldn	61	Day %		63
CNEL	62	Night %		37



Appendix B3: Continuous Noise Monitoring Results

Site: LT-3
Project: West Point Regulating Reservoir Project
Meter: LDL 820-8
Location: Northwestern Project Boundary
Calibrator: CAL200
Coordinates: (38.4117796, -120.5058702)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Tuesday, March 25, 2025	0:00	42	53	41	36
Tuesday, March 25, 2025	1:00	41	52	41	35
Tuesday, March 25, 2025	2:00	39	52	38	30
Tuesday, March 25, 2025	3:00	38	54	36	29
Tuesday, March 25, 2025	4:00	38	52	36	30
Tuesday, March 25, 2025	5:00	38	53	35	30
Tuesday, March 25, 2025	6:00	41	56	39	32
Tuesday, March 25, 2025	7:00	45	62	40	35
Tuesday, March 25, 2025	8:00	42	59	38	34
Tuesday, March 25, 2025	9:00	38	53	35	32
Tuesday, March 25, 2025	10:00	43	61	36	31
Tuesday, March 25, 2025	11:00	45	65	38	31
Tuesday, March 25, 2025	12:00	46	63	39	34
Tuesday, March 25, 2025	13:00	38	49	36	32
Tuesday, March 25, 2025	14:00	45	66	38	34
Tuesday, March 25, 2025	15:00	37	47	36	32
Tuesday, March 25, 2025	16:00	36	53	35	32
Tuesday, March 25, 2025	17:00	37	58	33	30
Tuesday, March 25, 2025	18:00	34	52	33	30
Tuesday, March 25, 2025	19:00	42	57	40	34
Tuesday, March 25, 2025	20:00	44	59	43	40
Tuesday, March 25, 2025	21:00	43	47	43	39
Tuesday, March 25, 2025	22:00	42	53	42	38
Tuesday, March 25, 2025	23:00	42	56	42	37

Statistics	Leq	Lmax	L50	L90
Day Average	42	57	38	33
Night Average	40	53	39	33
Day Low	34	47	33	30
Day High	46	66	43	40
Night Low	38	52	35	29
Night High	42	56	42	38
Ldn	47	Day %		72
CNEL	48	Night %		28