PUBLIC REVIEW DRAFT | JUNE 2014

Cambria Emergency Water Supply Project

INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

PREPARED FOR:

Cambria Community Services District

PREPARED BY:

RBF Consulting

A Company of Michael Baker International

PUBLIC REVIEW DRAFT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

CAMBRIA EMERGENCY WATER SUPPLY PROJECT

Lead Agency:

CAMBRIA COMMUNITY SERVICES DISTRICT
1316 Tamson Drive, Suite 201
Cambria, California 93428
Contact: Mr. Robert C. Gresens, P.E.
805.927.6223

Prepared by:

RBF CONSULTING,
A COMPANY OF MICHAEL BAKER INTERNATIONAL
14725 Alton Parkway
Irvine, California 92618-2069
Contacts: Mr. Glenn Lajoie, AICP
Ms. Rita Garcia
949.472.3505

June 20, 2014

JN 141290

This document is designed for double-sided printing to conserve natural resources.

TABLE OF CONTENTS

APPENDICES (provided on CD following the Table of Contents)

A. Air Quality/Greenhouse Gas Analysis Data
B. Biological Resources Assessment
C. Cultural Resources Assessment
D. Groundwater Modeling Report

LIST OF EXHIBITS

LIST OF TABLES

INITIAL STUDY, MITIGATED NEGATIVE DECLARATION AND TECHNICAL APPENDICES ON CD

This page intentionally left blank.

1.0 INTRODUCTION

The Cambria Community Services District (CCSD) is proposing the Cambria Emergency Water Supply Project (Project), in response to the CCSD Board of Directors' January 30, 2014 declaration of a Stage 3 Water Shortage Emergency in Cambria.[1] The Project involves construction and operation of emergency water facilities at the CCSD's existing San Simeon well field and percolation pond system property, located at 990 San Simeon - Monterey Creek Road. The Project proposes to construct and operate: one extraction well (existing Well 9P7); an Advanced Water Treatment Plant (AWTP); an injection well (RIW) to the groundwater basin at San Simeon well field; an evaporation pond (rehabilitate/modify an existing storage pond); three injection wells (LIWs), which would serve as mitigation to protect San Simeon Creek and downstream lagoon; and four monitoring wells. As an option to the three LIWs, the existing Well 9P7 discharge pipeline and discharge structure may be utilized to discharge directly into Van Gordon Creek adjacent to the AWTP. The emergency Project is needed to treat brackish water and fully recharge the San Simeon Creek coastal stream aquifers with advance treated water. The brackish water contains a combination of creek underflow, percolated wastewater treatment plant effluent, and a mixture of freshwater with saltwater that has migrated inland within an underground saltwater wedge. The Project is proposed to avoid projected water supply shortages anticipated by the end of summer/early fall 2014. Project benefits would include: preventing the migration of secondary wastewater effluent into the San Simeon well field production wells; preventing seawater from intruding into the CCSD's San Simeon well field production wells; avoiding possible ground subsidence; and maintaining adequate groundwater levels at the San Simeon well field to ensure the production wells operate properly (do not loose suction). To support the Project's regular Coastal Development Permit, the CCSD has determined that the Project is subject to the requirements of the California Environmental Quality Act (CEQA). This Initial Study/Mitigated Negative Declaration (IS/MND) addresses the direct, indirect, and cumulative environmental effects associated with the Cambria Emergency Water Supply Project, as proposed.

1.1 STATUTORY AUTHORITY AND REQUIREMENTS

In accordance with CEQA (Public Resources Code Section 21000-21177) and pursuant to Section 15063 of Title 14 of the California Code of Regulations (CCR), the CCSD, acting in the capacity of Lead Agency, is required to undertake the preparation of an Initial Study to determine if a proposed project would have a significant environmental impact. If the Lead Agency finds that there is no evidence that a project, either as proposed or as modified to include the mitigation measures identified in the Initial Study, may cause a significant effect on the environment, the Lead Agency shall prepare a Negative Declaration (or Mitigated Negative Declaration) for the project. Such determination can be made only if "there is no substantial evidence in light of the whole record before the Lead Agency" that such impacts may occur (Section 21080(c), Public Resources Code).

The environmental documentation, which is ultimately approved and/or certified by the CCSD in accordance with CEQA, is intended as an informational document undertaken to provide an environmental basis for subsequent discretionary actions upon the proposed Project. The resulting documentation is not; however, a policy document, and its approval and/or certification neither presupposes nor mandates any actions on the part of those agencies and its approval and/or certification neither presupposes nor mandates from whom permits and other discretionary approvals would be required.

[1] Governor Jerry Brown declared a drought emergency for the State of California in January 2014 and the San Luis Obispo County Board of Supervisors declared a local drought emergency for the County on March 11, 2014.

1.2 CEQA DOCUMENT TIERING

The Public Resources Code and the CEQA Guidelines discuss the use of "tiering" environmental impact reports by lead agencies. Public Resources Code Section 21068.5 defines "tiering" as:

> *The coverage of general matters and environmental effects in an environmental impact report prepared for a policy, plan, program or ordinance followed by narrower or site-specific environmental impact reports which incorporate by reference the discussion in any prior environmental impact report and which concentrate on the environmental effects which: (a) are capable of being mitigated, or (b) were not analyzed as significant effects on the environment in the prior environmental impact report.*

Tiering is further discussed in Public Resources Code Section 21094, as follows:

(a) Where a prior environmental impact report has been prepared and certified for a program, plan, policy, or ordinance, the lead agency for a later project that meets the requirements of this section shall examine significant effects of the later project upon the environment by using a tiered environmental impact report, except that the report on the later project is not required to examine those effects that the lead agency determines were either of the following:

(1) Mitigated or avoided pursuant to paragraph (1) of subdivision (a) of Section 21081 as a result of the prior environmental impact report.

(2) Examined at a sufficient level of detail in the prior environmental impact report to enable those effects to be mitigated or avoided by site-specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project.

(b) This section applies only to a later project that the lead agency determines is all of the following:

(1) Consistent with the program, plan, policy, or ordinance for which an environmental impact report has been prepared and certified.

(2) Consistent with applicable local land use plans and zoning of the city, county, or city and county in which the later project would be located.

(3) Not subject to Section 21166.

(c) For purposes of compliance with this section, an initial study shall be prepared to assist the lead agency in making the determinations required by this section. The initial study shall analyze whether the later project may cause significant effects on the environment that were not examined in the prior environmental impact report.

(d) All public agencies that propose to carry out or approve the later project may utilize the prior environmental impact report and the environmental impact report on the later project to fulfill the requirements of Section 21081.

(e) When tiering is used pursuant to this section, an environmental impact report prepared for a later project shall refer to the prior environmental impact report and state where a copy of the prior environmental impact report may be examined.

Tiering is a method to streamline EIR preparation by allowing a Lead Agency to focus on the issues that are ripe for decision and exclude from consideration issues already decided or not yet ready for decisions (CEQA Guidelines Section 15152 and 15385). According to CEQA Guidelines Section 15152 (a), "tiering" is defined as:

> *Tiering refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project.*

According to CEQA Guidelines Section 15385: "Tiering is appropriate when the sequence of EIRs is (a) from a general plan, policy, or program EIR to a program, plan, or policy EIR of a lesser scope or to a site-specific EIR . . . ."

The concept of tiering anticipates a multi-tiered approach to preparing EIRs. The first-tier EIR covers general issues in a broader program-oriented analysis, including important program resource and mitigation commitments required to be implemented at the project-level. Subsequent tiers incorporate by reference the general discussions from the broader document, concentrating on the issues specific to the proposed action being evaluated (CEQA Guidelines Section 15152).

When an EIR has been prepared and certified for a program or plan consistent with CEQA requirements, a Lead Agency, should, for a later project pursuant to or consistent with the program or plan, concentrate on the environmental effects that were not examined as significant effects on the environment in the prior EIR; refer to Public Resources Code Section 21068.5. In those situations where a programmatic document does not specifically address and analyze the impacts and mitigation measures necessary for a project-level action, the project-level environmental review can be streamlined by tiering from the program-level documents. Agencies are encouraged to tier their CEQA analysis to avoid repetition of issues and to focus on the issues for decision at each level of review. Subsequent CEQA compliance involves either the preparation of a further EIR (subsequent or supplemental) or a Negative Declaration.

Pursuant to CEQA Guidelines Section 15152, for purposes of tiering, significant environmental effects have been "adequately addressed" if the Lead Agency determines that the significant environmental effects:

- Have been mitigated or avoided as a result of the prior EIR and adopted findings in connection with that prior EIR; or

- Have been examined at a sufficient level of detail in the prior EIR to enable those effects to be mitigated or avoided by site-specific revisions, the imposition of conditions, or by other means with the approval of the later project.

Where appropriate, this Initial Study tiers off the earlier environmental documentation, as presented in Section 1.4 below. As discussed above, under CEQA Guidelines Section 15152, tiering is appropriate when the sequence of analysis follows from an EIR prepared for a general plan, policy, or program to an EIR of lesser scope, or to a site-specific EIR. Under CEQA, the earlier environmental documentation is considered a first tier and this Initial Study for the proposed Project is considered a second tier. This Initial Study will discuss any changed circumstances or new information that might alter the first tier analysis.

1.3 PURPOSE

Section 15063 of the *CEQA Guidelines* identifies specific disclosure requirements for inclusion in an Initial Study. Pursuant to those requirements, an Initial Study shall include:

- A description of the project, including the location of the project;
- Identification of the environmental setting;

- Identification of environmental effects by use of a checklist, matrix or other method, provided that entries on
- a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
- Discussion of ways to mitigate significant effects identified, if any;
- Examination of whether the project is compatible with existing zoning, plans, and other applicable land use controls; and
- The name(s) of the person(s) who prepared or participated in the preparation of the Initial Study.

1.4 INCORPORATION BY REFERENCE

Pertinent documents relating to this IS/MND have been cited and incorporated by reference, in accordance with CEQA Guidelines, Sections 15148 and 15150, to eliminate the need for inclusion of voluminous engineering and technical reports within the Initial Study. Of particular relevance are previous environmental and other documents that describe the environmental setting, and biological and cultural resources, and evaluate potential impacts.

This IS/MND has incorporated by reference the documents that are presented below. These planning, engineering, and environmental clearance documents include data and standards related to the Project. The documents were utilized throughout this IS/MND and are available for review on the Cambria Community Services District's website (www.cambriacsd.org/cm/Home.html) and at the CCSD offices located at 1316 Tamson Drive, Suite 201, Cambria, California 93428. The following summarizes the referenced reports:

Local Coastal Program Documents. In accordance with the 1976 Coastal Act, the County of San Luis Obispo (SLO County) has been implementing a Local Coastal Program (LCP). The policies and guidelines within the LCP are intended to protect coastal resources. The County's LCP is part of the County General Plan and Zoning Ordinance, and applies to those areas within the Coastal Zone. Generally, the County applies its Coastal Zone Land Use Ordinance (CZLUO) while reviewing and evaluating projects within areas subject to the Coastal Act. Consistent with State law, the County's LCP also functions as the mandatory General Plan Land Use and Circulation Elements. Key LCP documents that are incorporated by reference include the following, as amended:

- *Local Coastal Program Policy Document* provides overall policy direction for the management of land use within the coastal zone.

- *Framework for Planning* serves as an organizational document, linking land use, resource management, and circulation. The Framework also provides general goals for County decisions on land use, development, and circulation.

- *Coastal Zone Land Use Ordinance (CZLUO)* supplements the established Coastal Zone Land Use Element. The CZLUO also provides provisions typically found in zoning ordinances, including permit and appeal requirements, site design, development, and operational standards, and enforcement provisions.

- *Area Plans* work with the other elements of the LCP and County General Plan. The Area Plans replaced the former community general plans and provide goals, objectives, policies, programs, and standards unique to each area. Key provisions found in the Area Plans are land use maps, programs, and standards guiding development. The County's Coastal Zone is divided into four planning areas- the Project site is located in the North Coast (NC) Planning Area, within the Rural North Coast (RNC) community. The NC Planning Area is addressed in the North Coast Area Plan (NCAP).

North Coast Area Plan. The NCAP was adopted by the SLO County Board of Supervisors on September 22, 1980 (Resolution 80-350) and subsequently revised on August 24, 2008. The NCAP constitutes the County's General Plan Land Use and Circulation Elements for the NC Planning Area. The NCAP describes County land use policies

for the NC Planning Area, including regulations, which are also adopted as part of the Land Use Ordinances and Local Coastal Program. The NCAP allocates land use throughout the planning area by land use categories, which determine the varieties of land use that may be established on a parcel of land, as well as defining their allowable density and intensity. The NCAP is referenced for baseline data and RNC standards throughout this IS/MND.

Cambria Water Supply Alternatives Engineering Technical Memorandum. Cambria Water Supply Alternatives Engineering Technical Memorandum (TM) (CDM Smith, November 27, 2013) (TM), was prepared to present a range of water supply alternatives for the CCSD for the purpose of providing long-term drought protection and seasonally augmenting Cambria's potable water supply. The TM also summarizes the four facilitated public workshops that were conducted on water supply alternatives and describes the technical two-step screening process that was applied. Through the screening process, 8 out of 28 original water supply concepts were selected for further evaluation through formal environmental review. The TM ranked the brackish water alternative (Alternative Concept 5 - San Simeon Creek Road Brackish Water) the highest technically. The proposed Project used Alternative Concept 5 as a starting point. The TM was used in this IS/MND to develop the Project Description.

Draft EIR for Cambria County Water District Water System Improvements. This Draft EIR (Coastal Valley Engineering, Inc., May 1976) was prepared as part of a feasibility report within the formal application for Davis-Grunsky Act funds. This Draft EIR analyzes potential environmental impacts from multiple CCSD-wide improvements including the following: 1) replacement of all deteriorated and undersized mains (approximately 276,630 feet); 2) provision of proper pressure zone separation; 3) installation of new fire hydrants; and 4) provision of a new system of wells near San Simeon Creek to mitigate requirements for water treatment and provide a supplemental water source. The system of wells noted in this 1976 Draft EIR involved construction of a well field in the San Simeon Creek basin, in order to provide water from a larger storage basin than what was then utilized (the Santa Rosa Creek basin). This well field, which was ultimately constructed in 1979, is the well field located at the eastern portion of the current Project site, where the Project's potable water recharge injection well (RIW) is proposed. Therefore, this 1976 Draft EIR was utilized in this IS/MND as a source of baseline data for the Project site.

Preliminary Draft EIR for Proposed Van Gordon Creek Effluent Reservoir for Cambria Community Services District. The project analyzed in this EIR (Boyle Engineering Corporation, June 1979) was part of a larger project involving expansion and modification of wastewater treatment and disposal facilities serving Cambria. An EIR was prepared for the larger project in 1975. Subsequent changes to the original project involving the location of the effluent storage reservoir and method of effluent disposal necessitated the preparation of this EIR as a Supplement to the 1975 EIR. This 1979 Supplemental EIR analyzes impacts associated with a wastewater effluent reservoir and discharging treated effluent from the reservoir to nearby agricultural land (Bonomi Ranch) and Van Gordon Creek. The project included construction of an 80 acre-foot effluent storage reservoir on a 17-acre portion of Molinari Ranch, northeast of the San Simeon Monterey Creek Road/Van Gordon Creek Road intersection. The treated effluent from the CCSD's wastewater treatment plant (WWTP) would be stored at the proposed reservoir and allowed to percolate to the groundwater basin through the bottom of the reservoir. During periods of heavy rain, the treated effluent would be disposed of by spray irrigation on Bonomi Ranch and surface discharge to Van Gordon Creek located southeast/southwest of the San Simeon Monterey Creek Road/Van Gordon Creek Road intersection. This reservoir which was eventually constructed immediately south of the location originally proposed in this 1979 Supplemental EIR, is the Van Gordon Reservoir located at the western portion of the current Project site, where the Project proposes to dispose of the brine generated by the proposed AWTP. Additionally, Bonomi Ranch encompasses (in part) the western portion of the current Project site. Therefore, this 1979 Supplemental EIR was utilized in this IS/MND as a source of baseline and potential impact data associated with the Project's proposed the effluent storage reservoir.

Draft Supplemental EIR for Proposed Van Gordon Creek Reclaimed Water Reservoir for Cambria Community Services District. This Supplemental EIR (Boyle Engineering Corporation, May 1980) was part of the larger project, analyzed in the 1975 EIR. Subsequent to preparation of the 1979 Supplemental EIR discussed above, the proposed site of the effluent storage reservoir was relocated from Molinari Ranch (northeast of the San Simeon Monterey Creek Road/Van Gordon Creek Road intersection) to Bonomi Ranch (southeast of the San Simeon Monterey Creek Road/Van Gordon Creek Road intersection). Additionally, the size of the proposed reservoir was reduced from 80 acre-feet to 45 acre-feet. This 1980 Supplemental EIR addresses the impacts associated with the effluent storage reservoir's changed location and size. This reservoir (Van Gordon Reservoir) is the reservoir where the Project proposes to dispose of the brine generated by the proposed AWTP. Therefore, this 1980 Supplemental EIR was utilized in this IS/MND as a source of baseline and potential impact data associated with the Project's proposed the effluent storage reservoir.

Groundwater Recharge Project Environmental Impact Report. This EIR (Robert Bein, William Frost & Associates, December 1991) analyzes environmental impacts resulting from recharging the San Simeon Creek groundwater basin by discharging reclaimed water extracted from the Van Gordon [effluent storage] Reservoir. Reclaimed water would be treated through a reverse osmosis facility. A negotiation impasse with local landowners to recharge the basin resulted in the CCSD placing the project on hold.

Draft Environmental Impact Report and Appendices Effluent Disposal Field and Stream Restoration Improvements Project. The project analyzed in this EIR (Robert Bein, William Frost & Associates, August 1993) consisted of two components. The first component involved the conversion of a portion of the existing effluent spray disposal fields located generally southeast of the San Simeon Monterey Creek Road/Van Gordon Creek Road intersection into a percolation pond system. The second component involved restoration of two sites along San Simeon Creek containing unstable channel conditions and riverbank erosion which threatened CCSD facilities. The percolation pond system proposed in this 1993 EIR, which was constructed in 1994, was converted from effluent spray disposal fields. This is the pond system located at the southwestern portion of the current Project site. Therefore, this 1993 Supplemental EIR was utilized in this IS/MND as a source of baseline data associated with the Project site.

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

Cambria is located in central California's coastal region, in the northwest portion of San Luis Obispo County (SLO County); refer to Exhibit 2-1, *Regional Context*. Cambria lies within the Santa Rosa Creek Valley, south of San Simeon. The Project site is located in unincorporated SLO County, north of Cambria, north and east of the Hearst San Simeon State Park (State Park). The Project site is more specifically located southeast of the San Simeon Monterey Creek Road/Van Gordon Creek Road intersection, at 990 San Simeon Monterey Creek Road, Cambria; refer to Exhibit 2-2, *Local Context*.

The approximately 96-acre Project site involves two parcels of land (APNs 013-051-024 and 013-051-008) owned by the Cambria Community Services District (CCSD). Access to the Project site is provided along the northern site boundary, via San Simeon Monterey Creek Road.

2.2 BACKGROUND AND HISTORY

2.2.1 BACKGROUND

All of Cambria's potable water is supplied from groundwater wells in the San Simeon and Santa Rosa Creek aquifers. The San Simeon and Santa Rosa aquifers are relatively shallow and porous, with the groundwater levels typically recharged every year during the rainy season. With pumping, groundwater levels generally exhibit a consistent pattern of high levels during the wet season, steady decline during the dry season, and rapid rise when the wet season resumes. To minimize potable groundwater losses at the aquifer and ocean interface, treated wastewater effluent is percolated into the San Simeon Creek aquifer downstream from its production wells. This practice also helps prevent saltwater intrusion into the freshwater water aquifer. If the groundwater level drops too far, treated effluent and seawater could migrate toward the water supply wells, deteriorating the water quality and potentially rendering the freshwater non-potable. The CCSD operations maintain a positive differential between the up-gradient groundwater levels at its potable well field and the down-gradient wastewater effluent percolation ponds. During later parts of the summer dry season, and depending upon the prior year's precipitation, the CCSD may occasionally operate with a negative gradient, and will periodically pump groundwater from its percolation pond area, in order to control this differential.

For water Year 2013/2014, the total rainfall in Cambria was approximately 80 percent of the minimum rainfall needed to fully recharge the two coastal stream aquifers that are the sole water supply for Cambria. This severe drought condition has placed Cambria's water supply in immediate jeopardy. Consequently, on January 30, 2014, the CCSD Board of Directors declared a Stage 3 Water Shortage Emergency, the most stringent of three water shortage levels.[1] Reflecting the severity of the severe drought conditions experienced in Cambria, as well as the rest of the state of California,[2] on January 17, 2014, Governor Jerry Brown declared a drought emergency for the State of California, and on March 11, 2014, the San Luis Obispo (SLO) County Board of Supervisors proclaimed a local emergency due to the County's drought conditions. The Governor issued a subsequent drought declaration on April 24, 2014.

[1] The Cambrian, http://www.sanluisobispo.com/2014/01/31/2902954/cambria-water-shortage-emergency.html, Accessed June 10, 2014.

[2] State of California Office of Governor Edmond G. Brown Jr. – Newsroom, http://gov.ca.gov/news.php?id=18368, Accessed June 10, 2014.

NOT TO SCALE

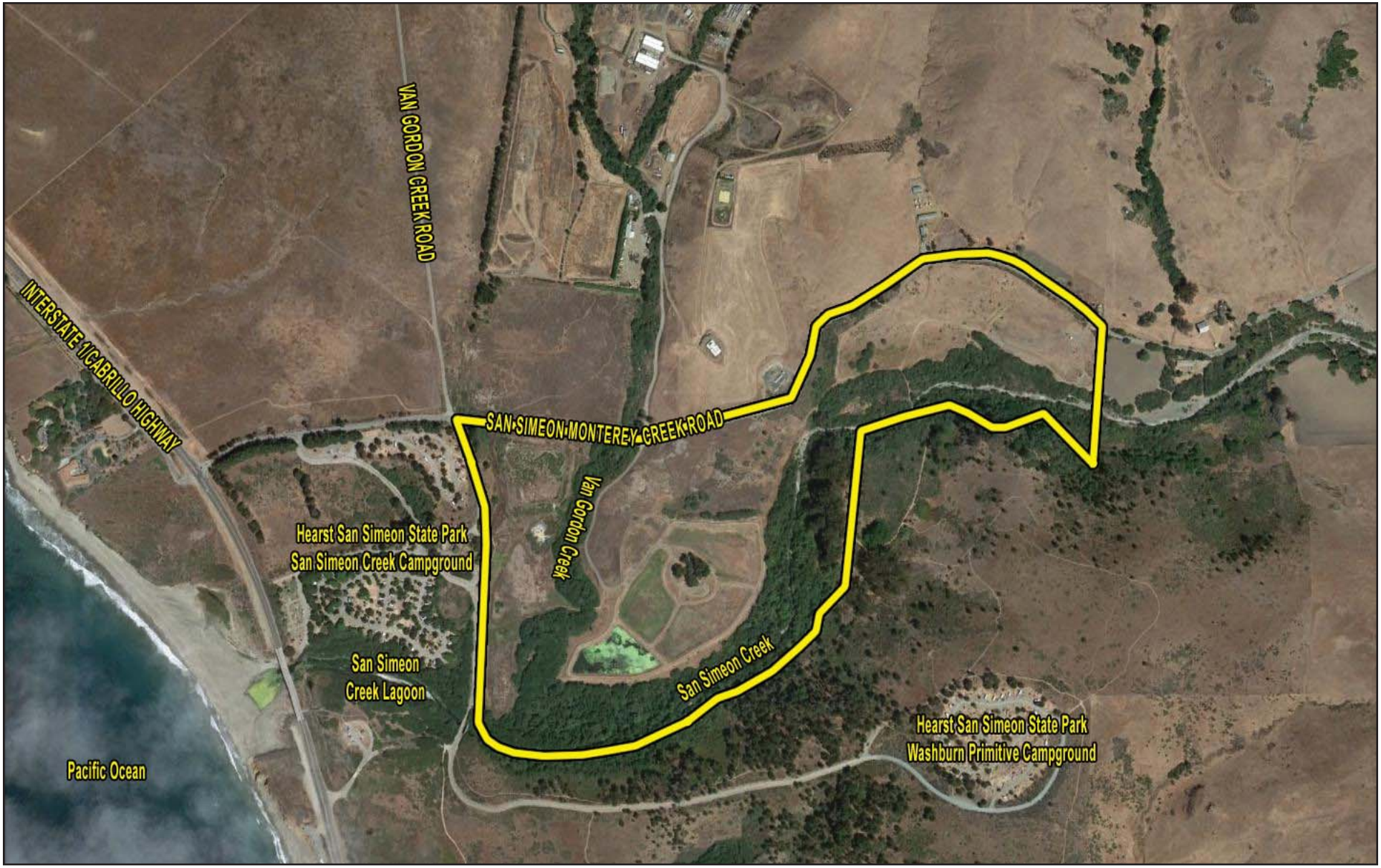
RBF CONSULTING
A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Regional Context

Exhibit 2-1



Source: Google Earth, 2014.
- Project Boundary

NOT TO SCALE

RBF CONSULTING
A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Local Context

Exhibit 2-2

Uncertainty remains as to whether upper springs that provide underflow to the creeks during the dry season will cease earlier than normal due to the very dry conditions within each watershed. This could result in CCSD well levels dropping at an accelerated rate during the late summer to early fall period, which could lead to water supply shortages, seawater intrusion, pumps losing suction, and potential subsidence.

In response to the ongoing severe drought emergency, and in combination with very stringent water conservation measures, the CCSD is proposing the Cambria Emergency Water Supply Project. The Project proposes to construct and operate emergency water supply facilities at the CCSD's existing San Simeon well field and effluent percolation ponds property. The emergency water supply system would be used to treat brackish water to fully recharge the San Simeon Creek coastal stream aquifers with advance treated water. The brackish water would contain a combination of creek underflow, percolated wastewater treatment plant effluent, and a mixture of freshwater with saltwater that has migrated inland within an underground saltwater wedge.

The Project is proposed to avoid projected water supply shortages by the end of summer/early fall 2014. Benefits would include: preventing the migration of secondary wastewater effluent into the San Simeon well field production wells; preventing seawater from intruding into the CCSD's San Simeon well field production wells; avoiding potential ground subsidence; and maintaining adequate groundwater levels at the San Simeon well field to ensure the production wells operate properly (do not loose suction). The CCSD anticipates continued water shortages and drought conditions over the course of the next 20 years, as a result of climate change impacts, and the likely need for use of the emergency water supply facilities in 8 to 10 years of the next 20 years.[3]

On April 22, 2014, the CCSD submitted an application to SLO County for an Emergency Coastal Development Permit (CDP), in order to construct and operate the proposed Project. On May 15, 2014, the County issued an Emergency CDP (ZON2013-00589), authorizing construction and operation of the proposed emergency Project, subject to various conditions. Construction of the emergency Project began on May 20, 2014. As of the writing of this Initial Study, the Recharge Injection Well (RIW) and its associated monitoring well (MIW) have been constructed. Emergency CDP Condition 5 requires the construction work to be completed within 180 days from issuance of the Emergency CDP.

The Emergency CDP includes a list of conditions that address Project construction/operations, and general land use entitlement matters, as well as hydrology/water quality, light/glare, noise, air quality, cultural resources, and biological resources. As required by Emergency CDP Condition 6, a CDP application for a regular CDP was submitted to the County on June 13, 2014. This Initial Study/Mitigated Negative Declaration has been prepared to satisfy the CEQA requirements for the emergency Project's regular CDP.

2.2.2 PROJECT HISTORY

Under a project cooperation agreement between the CCSD and United States Army Corps of Engineers (ACOE), a study for Cambria's water supply was conducted in 2012-2013. The principal objective of this study was to identify, evaluate, and recommend the best water supply alternative that would provide Cambria with a supplemental water supply during the six dry months of the year (May 1 through October 31). The findings and results of the study were presented in a Cambria Water Supply Alternatives Engineering Technical Memorandum (2013 Engineering TM) (CDM Smith, November 27, 2013). During a series of facilitated public workshops with Cambria residents, 28 water supply alternative concepts and options were identified and further screened Through a tiered evaluation, eight alternative water supply concepts were selected and recommended for further development and evaluation, while the other 20 were rejected based on fatal flaws.

[3] CDM Smith, *Cambria Emergency Water Supply Project Description*, Page 1, June 2014.

The 2013/2014 year drought prompted the CCSD's decision to provide an emergency water supply for Cambria that would be quickly implemented. The technical concept of the highest ranked alternative (San Simeon Creek Road Brackish Water Alternative – Concept 5) was used as a starting point in the development of the proposed Emergency Water Supply Project, which is the subject of this Initial Study.

The Cambria Emergency Water Supply Project San Simeon Creek Basin Groundwater Modeling Report (GMR) (CDM Smith, May 14, 2014) was prepared to support evaluation of the basin water management alternatives to develop additional water supplies for the CCSD to meet the emergency conditions; see Appendix D, *Groundwater Modeling Report*. Among the Report's objectives is to evaluate the potential impacts of the emergency water supply alternatives on San Simeon Creek, and the fresh water lagoon areas to allow for the development of avoidance and mitigation measures.

2.2.3 PROJECT PURPOSE

The Emergency Water Supply Project was proposed in response to Stage 3 Water Shortage Emergency to avoid potentially disastrous consequences to Cambria. The Project is being designed and constructed to treat brackish water using advanced treatment technologies and recharge the CCSD's San Simeon well field aquifer with advance treated water. Through groundwater augmentation, the Project would provide 250 acre-foot of water supply to Cambria over six dry months, or shorter, if the basin is replenished naturally during the pending winter season. In addition to water supply augmentation, the Project will prevent seawater intrusion into the groundwater aquifer and potential subsidence, and protect well pumps from losing suction. Further, to mitigate potential impacts from additional pumping from the Project's extraction well, the Project is being designed to provide up to100 gallons per minute (gpm) of freshwater for purposes of protecting the San Simeon Creek and downstream San Simeon Creek lagoon area when the emergency water supply Project is operational.

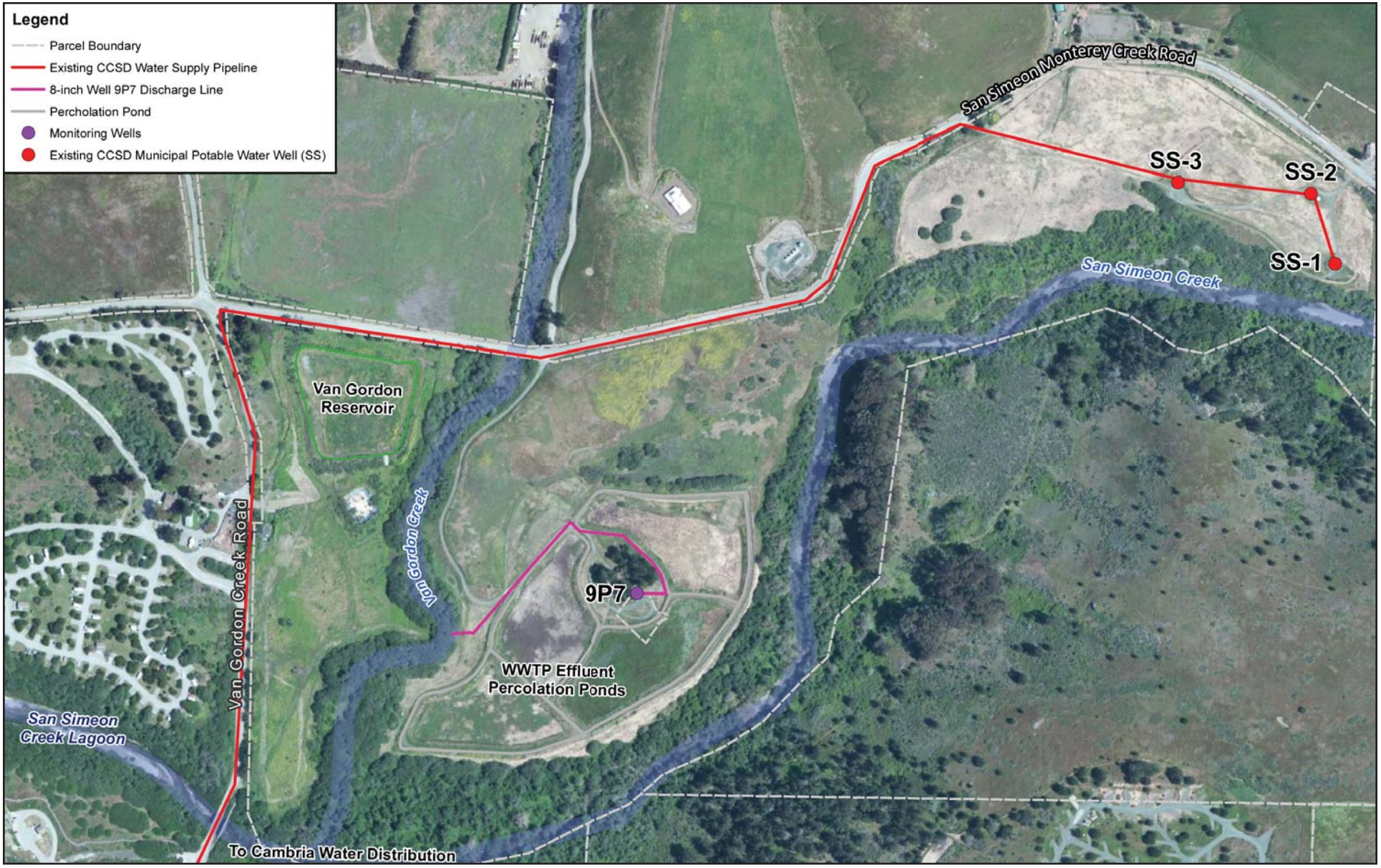
2.3 ENVIRONMENTAL SETTING

2.3.1 ON-SITE LAND USES

The Project site is situated on CCSD-owned property, which is currently used for various water and wastewater facilities including a potable water well field (San Simeon well field), an underground potable water supply pipeline, a treated wastewater percolation pond system, and a wastewater effluent storage reservoir); see Exhibit 2-3, *Existing Site Conditions*.

San Simeon Well Field. The San Simeon well field is located at the eastern portion of the Project site. The property is a 92-acre open field, vegetated with grass, shrubs, and some trees. The site varies in elevation, ranging from approximately 20 to 25 feet above mean sea level. This well field contains three municipal potable water wells (SS-1, SS-2, and SS-3), which are used to extract potable water from the San Simeon aquifer. A gravel road connects the wells and traverses this portion of the property. An underground potable water supply pipeline, which generally parallels the northern and western site boundaries, is used to transport the potable water from the well field to Cambria.

Well 9P7, Discharge Pipeline, and Discharge Structure. Well 9P7 is an existing groundwater gradient control well is located in a small stand of Monterey pine in the western portion of the Project site. Well 9P7 is manually controlled and includes a 20 horsepower pump; see Exhibit 2-4, *Existing Well 9P7*. An existing 8-inch PVC discharge pipeline and surface discharge structure are used to discharge pumped groundwater from existing Well 9P7 to Van Gordon Creek. The existing pipeline is used intermittently when water table at the potable water supply well area drops to 1.0 foot above a monitoring well, which is located in between the existing ponds and potable water well field. The pump capacity is about 700 gpm.



Source: CDM Smith, June 2014.

NOT TO SCALE

RBF CONSULTING A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Existing Site Conditions

Exhibit 2-3

NOT TO SCALE

RBF CONSULTING
A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Existing Well 9P7

Exhibit 2-4

Percolation Pond System. The existing wastewater effluent percolation pond system located at the southwestern portion of the Project site involves multiple effluent percolation ponds, which are used for percolation of the secondary effluent from Cambria's Wastewater Treatment Plant (WWTP). Treated effluent from the WWTP is allowed to percolate to the groundwater basin through the ponds, in order to maintain a hydraulic mound and barrier in the lower reach of San Simeon Creek. The Advanced Water Treatment Plant (AWTP) is proposed to be located within this area, on a level vacant lot north of the ponds; see Exhibit 2-5, *AWTP Site*. The flat area of the site is approximately 60,000 square feet (sf) (approximately 15,000 square feet would be used for the AWTP). This area is bordered by a chain link fence to the north and access road for the percolation ponds to the south.

Van Gordon Reservoir. The Van Gordon Reservoir, which has not been in use since about 2005, is an earthen pond originally constructed for the storage of secondary effluent from the WWTP prior to surface spraying on property to the south of the pond. The surface spray operation was stopped following construction of the percolation ponds in 1994. As a result, the pond was used as an intermediate storage basin prior to discharge into the percolation ponds. Effluent piping allows direct discharge into the percolation ponds without using the reservoir, which is the current operating practice being followed. The pond is trapezoidal with a length and width of approximately 300 feet and a surface area of between 105,000 square feet to 137,000 square feet, depending on water level in the pond. The berm elevation is approximately 47 feet with an interior slope of 4:1, an exterior slope of 3:1, and an overall depth varying from 8 to 10 feet.[4] Cambria Emergency Water Supply Project Description (CDM PD) (CDM Smith, June 2014) Figure 2-9, *Brine Pond Section*, shows the existing brine pond and groundwater elevation.

The CCSD owns a vacant single-family dwelling, which is located on the east side of Van Gordon Road, approximately 750 feet south of San Simeon Monterey Creek Road. This dwelling is being considered by the CCSD for use as instrumentation and communications equipment storage. San Simeon Creek and Van Gordon Creek traverse the southeastern and western portions of the property, respectively.

2.3.2 SURROUNDING LAND USES

The land uses surrounding the Project site are illustrated on Exhibit 2-2 and summarized, as follows:

- *North:* San Simeon Monterey Creek Road (aka San Simeon Creek Road) forms the Project site's northern boundary. Agricultural uses are located further north, beyond the road.
- *South:* San Simeon Creek and State Park Washburn Primitive Campground are located to the south.
- *East:* Agricultural uses are located to the east.
- *West:* Van Gordon Creek Road forms the Project site's western boundary. The State Park's San Simeon Creek Campground extends along the west side of Van Gordon Creek Road. There are two single-family dwellings within the campground, which provide housing for State Park personnel (State Park camp hosts). The dwellings are located further west beyond Van Gordon Creek Road, approximately 750 feet south of San Simeon Monterey Creek Road.

2.4 COUNTY OF SAN LUIS OBISPO GENERAL PLAN LAND USE AND COMBINING DESIGNATIONS

The Project site is located in the North Coast (NC) Planning Area, within the Rural North Coast (RNC) community. The NC Planning Area is addressed in the North Coast Area Plan (NCAP), which constitutes the County's General Plan Land Use and Circulation Elements for the NC Planning Area. The NC Planning Area is entirely within

[4] Based on field survey collected by North Coast Engineering, Inc. in May 2014.

NOT TO SCALE

RBF CONSULTING
A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

AWTP Site

Exhibit 2-5

California's Coastal Zone. The *Coastal Zone North Coast Planning Area Rural Land Use Category Map*[5] separates the NC Planning Area into land use categories, which define regulations for land uses, density, and intensity of use. As shown on the Land Use Category Map, the Project site is designated Agriculture. The *Coastal Zone North Coast Planning Area Rural Combining Designation Map*[6] assigns Combining Designations to NC areas containing hazards, sensitive resource areas, environmentally sensitive habitat areas, historic and archaeologically sensitive areas, and public facilities. As shown on the Combining Designation Map, portions of the Project site are assigned the following Combining Designations:

- Geologic Study Area (GSA);
- San Simeon Creek Flood Hazard (FH);
- Sensitive Resource Area (SRA);
- Environmentally Sensitive Habitat, Terrestrial Habitat (ESH-TH); and
- Environmentally Sensitive Habitat, Coastal Creek (ESH-CC).

Additionally, the Project site (and all of the NC Planning Area) is assigned Local Coastal Program (LCP) Combining Designation.

2.5 PROJECT CHARACTERISTICS

This section is based upon the Cambria Emergency Water Supply Project Description (CDM PD) (CDM Smith, June 2014), which describes the Project in detail. The proposed Cambria Emergency Water Supply Project facilities are shown in Exhibit 2-6, *Project Overview*, and described in the sections below. The emergency water supply Project facilities include the following components:

- *Existing Well 9P7* – The Project's source water is the San Simeon Creek aquifer from existing Well 9P7, which would provide reclaimed water to the AWTP.

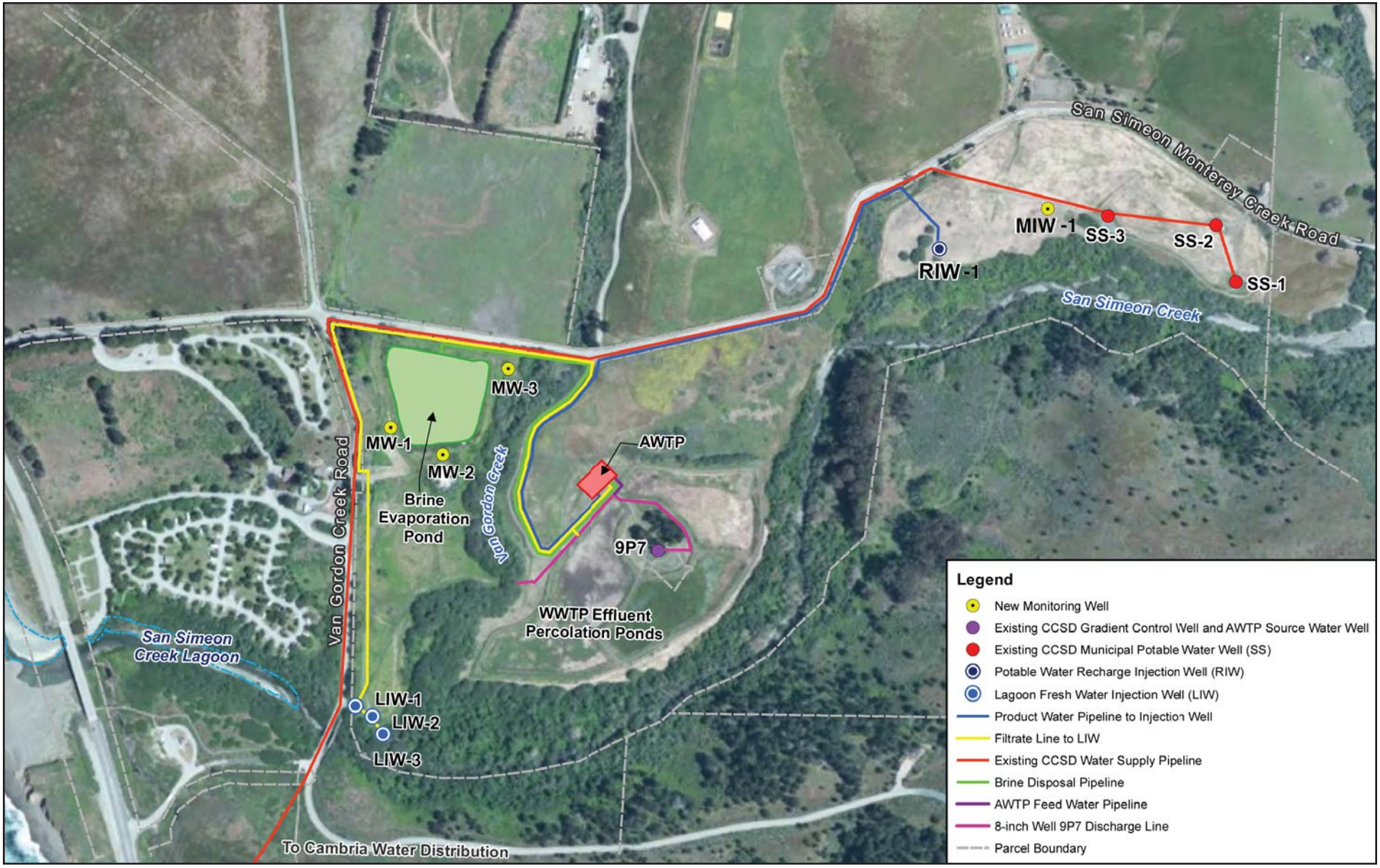
- *Pipelines* – An existing eight-inch pipeline and a new extension to this pipeline are proposed to transport the brackish water between Well 9P7 and the AWTP. A product water pipeline is proposed to transport the product water between the proposed AWTP and proposed RIW. A pipeline is proposed to transport the filtrate (product water) between the proposed AWTP and proposed Lagoon Injection Wells (LIWs). A brine disposal pipeline is proposed to transport the brine between the proposed AWTP and the existing Van Gordon Reservoir following its modification to an evaporation pond.

- *Advanced Water Treatment Plant* – An AWTP is proposed to treat brackish water to advance treated water quality suitable for injection into the groundwater basin to augment the potable water supply. The brackish water would be a combination of creek underflow, percolated secondary effluent, and a mix of freshwater and deeper saltwater from an underground saltwater wedge that extends underground. The AWTP's main treatment processes would include membrane filtration (MF), reverse osmosis (RO), and advanced oxidation process (AOP) utilizing ultraviolet (UV) light and hydrogen peroxide.

- *Recharge Injection Well (RIW)* – To meet California Department of Public Health and Regional Water Quality Control Board regulations, the treated AWTP product water would be re-introduced/pumped for injection into the San Simeon groundwater basin, where it would travel no less than 60 days underground before being pumped by the existing San Simeon well field. Monitoring Injection Well-1 (MIW-1) is proposed immediately east of RIW.

[5] County of San Luis Obispo Website, http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download_Center/Land_Use_Maps.htm, Accessed May 15, 2014.

[6] Ibid.



Source: CDM Smith, June 2014.

NOT TO SCALE

RBF CONSULTING A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Project Overview

Exhibit 2-6

- *Existing Van Gordon Reservoir Evaporation Pond* – The AWTP generated waste stream (brine) would be disposed for evaporation in the existing Van Gordon Reservoir after modifying the reservoir into an evaporation pond. The evaporation pond would be constructed to meet State standards for lining and monitoring. The pond liner system would provide containment of brine to protect soil and groundwater beneath. The brine evaporation would be aided with five mechanical spray evaporators. Monitoring Wells MIW-2, MIW-3, and MIW-4 are proposed around the evaporation pond.

- *Lagoon Injection Well (LIW)* – AWTP product water would be pumped for discharge into the San Simeon Creek via three LIWs to mitigate potential impacts to the creek and downstream lagoon area from the operation of extraction well 9P7. The LIWs would be spaced 25 to 40 feet apart. As an alternative to the three LIWs, the existing Well 9P7 discharge pipeline and discharge structure may be utilized to discharge directly into Van Gordon Creek adjacent to the AWTP.

- *Monitoring Wells* – A new monitoring well is proposed at the San Simeon well field between RIW and the San Simeon wells. Three monitoring wells are proposed upgradient and downgradient from the evaporation pond.

The Project would be capable of generating 400 gpm of water, out of which 300 gpm would be used for emergency water supply to Cambria and 100 gpm would be used to mitigate potential impacts to the San Simeon Creek and down gradient fresh water lagoon. These Project facilities are further described below.

2.5.1 SOURCE WATER – EXISTING WELL 9P7

The source water for the Project would be groundwater from San Simeon basin pumped using existing Well 9P7. The extracted groundwater would be conveyed to the AWTP using an existing eight-inch PVC pipeline originally constructed to discharge pumped groundwater from Well 9P7 to Van Gordon Creek. A pipeline extension (AWTP feed water pipeline) is proposed to transport the brackish water between the existing pipeline and the AWTP.

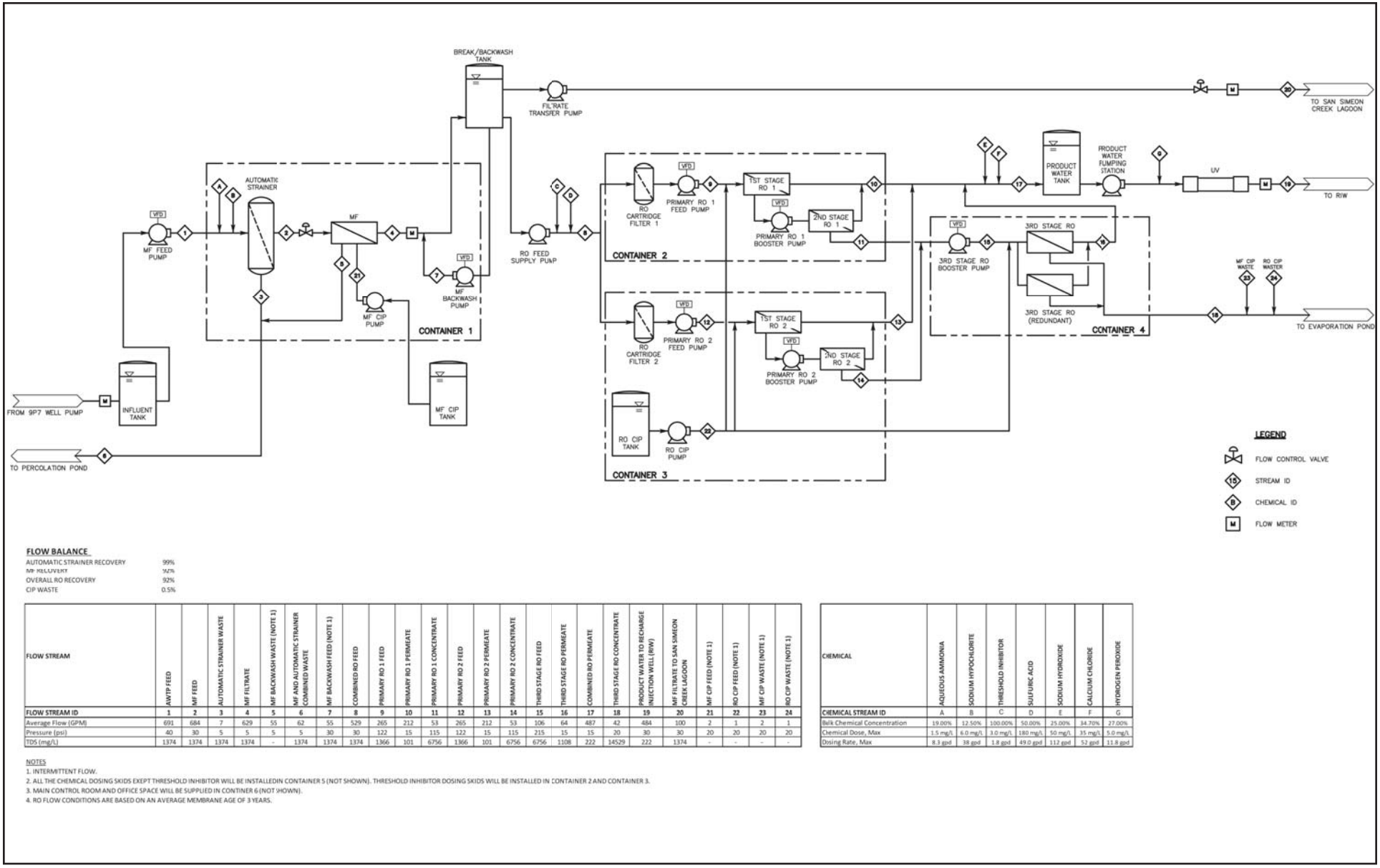
Key water quality data for Cambria Wastewater Treatment Plant (WWTP) effluent and groundwater extracted from Well 9P7 is summarized in CDM PD Table 2-1. As shown, water quality for Well 9P7 is improved when compared to wastewater effluent, which is likely due to the influence from the creek underflow.

2.5.2 ADVANCED WATER TREATMENT PLANT (AWTP)

The AWTP would consist of multiple unit processes, including microfiltration (MF) or ultrafiltration (UF), reverse osmosis (RO), advance oxidation process (AOP) utilizing ultraviolet (UV) light and hydrogen peroxide (H_2O_2) and post-treatment chemical addition designed to stabilize the treated water before it is conveyed to the RIW for recharge. The overall treatment process flow diagram is shown in Exhibit 2-7, *AWTP Process Flow Diagram*.

CDM PD Table 2-2 summarizes recoveries, waste flows, and treatment process capacities for MF and RO systems required to meet the target potable water augmentation of 250 AF and San Simeon Creek fresh water recharge of 100 AF. CDM PD Table 2-3 summarizes the projected water quality of RO permeate and concentrate. Since MF does not remove any ionic species (e.g., salt), it is expected that the MF filtrate and backwash waste would retain ionic water qualities similar to the source water.

Key AWTP unit processes equipment would be pre-packaged and mounted in shipping containers. UV vessels, water tanks, pump skids and self-contained chemical totes would be installed outdoors on concrete housekeeping pads. The AWTP layout is shown is Exhibit 2-8, *AWTP Site Layout*.



FLOW BALANCE

AUTOMATIC STRAINER RECOVERY	99%
MF RECOVERY	92%
OVERALL RO RECOVERY	92%
CIP WASTE	0.5%

FLOW STREAM	AWTP FEED	MF FEED	AUTOMATIC STRAINER WASTE	MF FILTRATE	MF BACKWASH WASTE (NOTE 1)	MF AND AUTOMATIC STRAINER COMBINED WASTE	MF BACKWASH FEED (NOTE 1)	COMBINED RO FEED	PRIMARY RO 1 FEED	PRIMARY RO 1 PERMEATE	PRIMARY RO 1 CONCENTRATE	PRIMARY RO 2 FEED	PRIMARY RO 2 PERMEATE	PRIMARY RO 2 CONCENTRATE	THIRD STAGE RO FEED	THIRD STAGE RO PERMEATE	COMBINED RO PERMEATE	THIRD STAGE RO CONCENTRATE	PRODUCT WATER TO RECHARGE (INJECTION WELL) (RIW)	MF FILTRATE TO SAN SIMEON CREEK LAGOON	MF CIP FEED (NOTE 1)	RO CIP FEED (NOTE 1)	MF CIP WASTE (NOTE 1)	RO CIP WASTE (NOTE 1)
FLOW STREAM ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Average Flow (GPM)	691	684	7	629	55	62	55	529	265	212	53	265	212	53	106	64	487	42	484	100	2	1	2	1
Pressure (psi)	40	30	5	5	5	5	30	30	122	15	115	122	15	115	215	15	15	20	30	30	20	20	20	20
TDS (mg/L)	1374	1374	1374	1374	-	1374	1374	1374	1366	101	6756	1366	101	6756	6756	1108	222	14529	222	1374	-	-	-	-

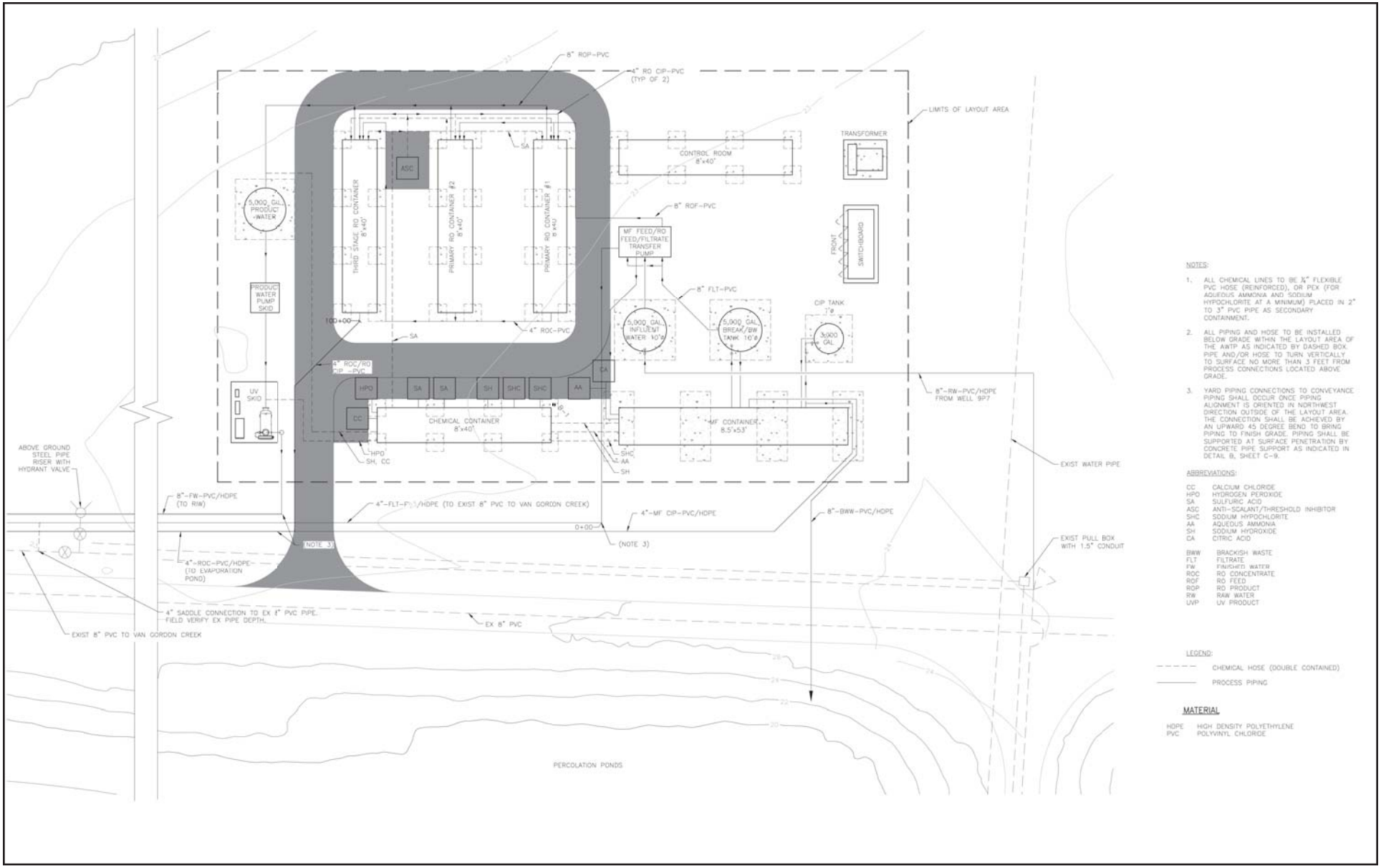
CHEMICAL	AQUEOUS AMMONIA	SODIUM HYPOCHLORITE	THRESHOLD INHIBITOR	SULFURIC ACID	SODIUM HYDROXIDE	CALCIUM CHLORIDE	HYDROGEN PEROXIDE
CHEMICAL STREAM ID	A	B	C	D	E	F	G
Bulk Chemical Concentration	19.00%	12.50%	100.00%	50.00%	25.00%	34.70%	27.00%
Chemical Dose, Max	1.5 mg/L	6.0 mg/L	3.0 mg/L	180 mg/L	50 mg/L	35 mg/L	5.0 mg/L
Dosing Rate, Max	8.3 gpd	38 gpd	1.8 gpd	49.0 gpd	112 gpd	52 gpd	11.8 gpd

NOTES
1. INTERMITTENT FLOW.
2. ALL THE CHEMICAL DOSING SKIDS EXEPT THRESHOLD INHIBITOR WILL BE INSTALLEDIN CONTAINER 5 (NOT SHOWN). THRESHOLD INHIBITOR DOSING SKIDS WILL BE INSTALLED IN CONTAINER 2 AND CONTAINER 3.
3. MAIN CONTROL ROOM AND OFFICE SPACE WILL BE SUPPLIED IN CONTINER 6 (NOT SHOWN).
4. RO FLOW CONDITIONS ARE BASED ON AN AVERAGE MEMBRANE AGE OF 3 YEARS.

Source: CDM Smith, June 2014.

AWTP Process Flow Diagram

Exhibit 2-7



Source: CDM Smith, June 2014.

NOT TO SCALE

RBF CONSULTING A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

AWTP Site Layout

Exhibit 2-8

MAIN TREATMENT PROCESSES

Membrane Filtration

The membrane filtration system provides pretreatment for the RO system to reduce the particulate and biological fouling of the RO membranes. The membrane filtration system would remove inert particulates, organic particulates, colloidal particulates, pathogenic organisms, bacteria and other particles by the membrane's size-exclusion sieve action. Table 2-1*, Membrane Filtration Water Quality Goals*, presents the membrane filtration water quality goals.

Table 2-1
Membrane Filtration Water Quality Goals

Constituent	Design Criteria
Cryptosporidium	Undetectable[1]
Giardia	Undetectable[2]
Suspended Solids	Undetectable[3]
95th Percentile Filtrate Turbidity	<0.1 NTU
Filtrate Silt Density Index (SDI)	<3

Source: CDM Smith, *Cambria Emergency Water Supply Project Description*, June 2014.

Pre-Treatment Chemical Addition. Ammonium hydroxide and sodium hypochlorite would be added downstream of the membrane feed pumps and upstream of the membrane filtration pre-filters for chloramination to control the biological fouling of the membrane filtration membranes.

Membrane Filtration Pre-Filters. Membrane filtration pre-filters or strainers would be provided immediately upstream of the membrane filtration membranes to protect the membranes from damage and/or fouling due to larger particles.

Membrane Filtration Systems. Both the MF and UF are capable of achieving the membrane filtration water quality goals described in Table 2-1 above. CDM PD Figure 2-5 shows the membrane filtration system layout. The microfilter backwash associated with AWTP operations would be returned to the existing percolation ponds adjacent to the AWTP.

Membrane Filtration Break Tank. The membrane filtration break tank would serve as a flow equalization reservoir for the membrane filtration filtrate prior to being pumped to the RO system.

Reverse Osmosis

While reverse osmosis (RO) is used for purification and desalination in water treatment, it is also used effectively in drinking water and wastewater treatment processes for removal of a wide array of dissolved constituents, including CECs. RO is generally recognized as the best available treatment for reducing TDS and many CECs in brackish water, which will include treated wastewater effluent. The RO process further serves as an effective barrier against potential pathogens. Therefore, the RO process is included within the AWTP for the Project the RO treatment includes the following processes:

- RO feed supply pump;
- RO pre-treatment chemical addition (antiscalant and sulfuric acid for scale control);
- Cartridge filters;
- RO feed pumps; and
- RO.

Antiscalant would be added to control scaling of the RO membranes. Sulfuric acid would be added to lower the pH of the RO feed water, in order to control the calcium carbonate, sulfates of calcium, barium, and strontium from limiting the RO recovery. Each RO train would be paired with a dedicated feed pump, which would be required in addition to the RO booster pumps. A three-stage RO configuration would be provided to increase recovery and reduce brine flow. CDM PD Figures 2-6a through 2-6c show the RO system layout. All chemicals will be stored in double containment to prevent leaks from entering the environment.

Advanced Oxidation Process (AOP)

The final advanced water purification process is disinfection and advanced oxidation, as required by the most current State Groundwater Recharge Regulations. A disinfection process is needed to meet the pathogenic microorganism control requirements included in the regulations. The UV reactors serve a dual purpose: disinfection; and, with addition of hydrogen peroxide upstream, advanced oxidation. Advanced oxidation processes (AOPs) AOPs are considered the best available technology to address the destruction of CECs that are not fully removed by the RO membranes. As with the RO unit process, all chemicals will be stored in double containment to prevent leaks from entering the environment.

As noted above, the UV/H2O2 system, which has been used extensively for removal of microconstituents, found in treated water, is the most common AOP technology for indirect potable reuse (IPR). The UV/H2O2 system would be designed to meet the most current groundwater recharge regulations that provide a minimum performance criteria for AOP systems used for a groundwater recharge system. The UV system layout is shown on CDM PD Figure 2-7.

Post-Treatment/Stabilization

Product water quality is required to minimize corrosion of the conveyance pipeline and the pumping equipment (Langelier Saturation Index). CDM PD Table 2-5 summarizes the stabilization goals for the purified water. The post-treatment strategy assumed includes the addition of calcium chloride to increase hardness and the addition of caustic soda to increase pH. All chemicals used for post-stabilization will be stored in double containment to prevent leaks from entering the environment.

POWER SUPPLY AND CONSUMPTION

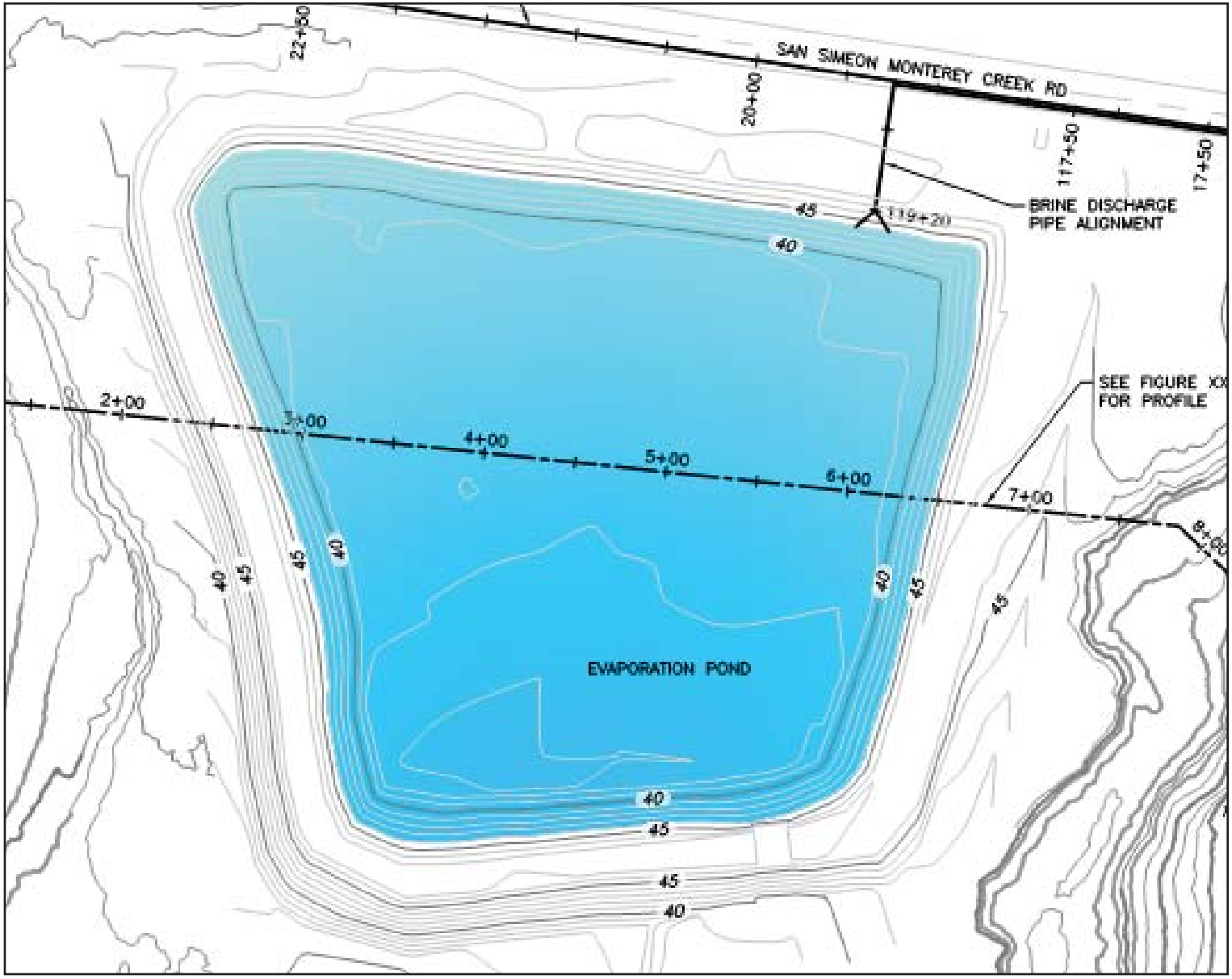
Power demand for the AWTP is estimated to be 650 kilovolt-amps (KVA). Power for the AWTP would be obtained from a PG&E supplied pad mount transformer connected to an existing PG&E power line servicing Well Site 9P7 via a new power drop from the well site along the well site access road. The estimated capacity of the transformer would be 750 KVA at 480/277 volts. PG&E would provide primary power to the transformer and supply and set the transformer. It is estimated the service would be 1200 amperes. CDM PD Table 2-6 summarizes an estimated electrical load from the AWTP's major process equipment.

TIME AND HOURS OF OPERATION

The AWTP is assumed to operate continuously for six months of the year, while the drought conditions are most severe.

2.5.3 EVAPORATION POND

The AWTP-generated waste streams, primarily RO brine, would be sent to Van Gordon evaporation pond for disposal via evaporation. The brine would be added to the pond via a pipe on the northeast side of the pond. Refer to Exhibit 2-9, *Brine Pond Plan*. The existing Van Gordon Reservoir, originally constructed for storage of the secondary effluent from the CCSD's wastewater treatment plant, would be lined with an impermeable liner system to meet the State's Title 27 Class II waste discharge standards. In addition, to accelerate evaporation of the evaporation pond disposed RO brine, the Project proposes five (four duty and one standby) mechanical spray evaporators.



Source: CDM Smith, June 2014.

An existing spillway along the pond's southern berm would be demolished and regraded to provide a uniform top of slope elevation around the pond. The pond would operate with a minimum freeboard of 2.0 feet, per the Title 27 requirements. The pond would be designed to provide for a 5.0-foot minimum separation between the groundwater elevation and bottom of the pond, also per Title 27 requirement. CDM PD Figure 2-9, Brine Pond Section, shows the existing brine pond and groundwater elevation.

Title 27 requires installation of an impermeable liner, a leachate collection and removal system (LCRS), and a vadose zone monitoring system. The primary liner and textured drain liner materials would be impermeable. The LCRS would include a perforated conductor pipe and trench along the pond bottom terminating into a collection sump. The LCRS would be designed to maintain less than 1.0 foot of head on the secondary liner. The LCRS sump would have a surface entry pipe for monitoring and removal of any accumulated leachate.

Minimal earthwork would be performed to grade the bottom of the pond and install the LCRS, vadose zone monitoring system. The pond would be designed to withstand the maximum credible earthquake[7] and the 100-year flood. Based on the FEMA map of the 100-year flood plain, the water surface elevation would rise to approximately the bottom of the exterior berm around elevation.

The brine waste would be evaporated via natural evaporation as well as mechanical spray evaporators. Over time, the dissolved salt concentration in the pond would increase until it begins to precipitate from solution. The super-concentrated waste, whether liquid or solid, would be removed from the site for disposal. In concentrated slurry form, the waste would be pumped to trucks and hauled away for disposal at a licensed disposal site. In dried solids form, the solids accumulated on pond bottoms would be removed manually using shovels and barrels and disposed offsite at a licensed disposal site.

SPRAY EVAPORATORS

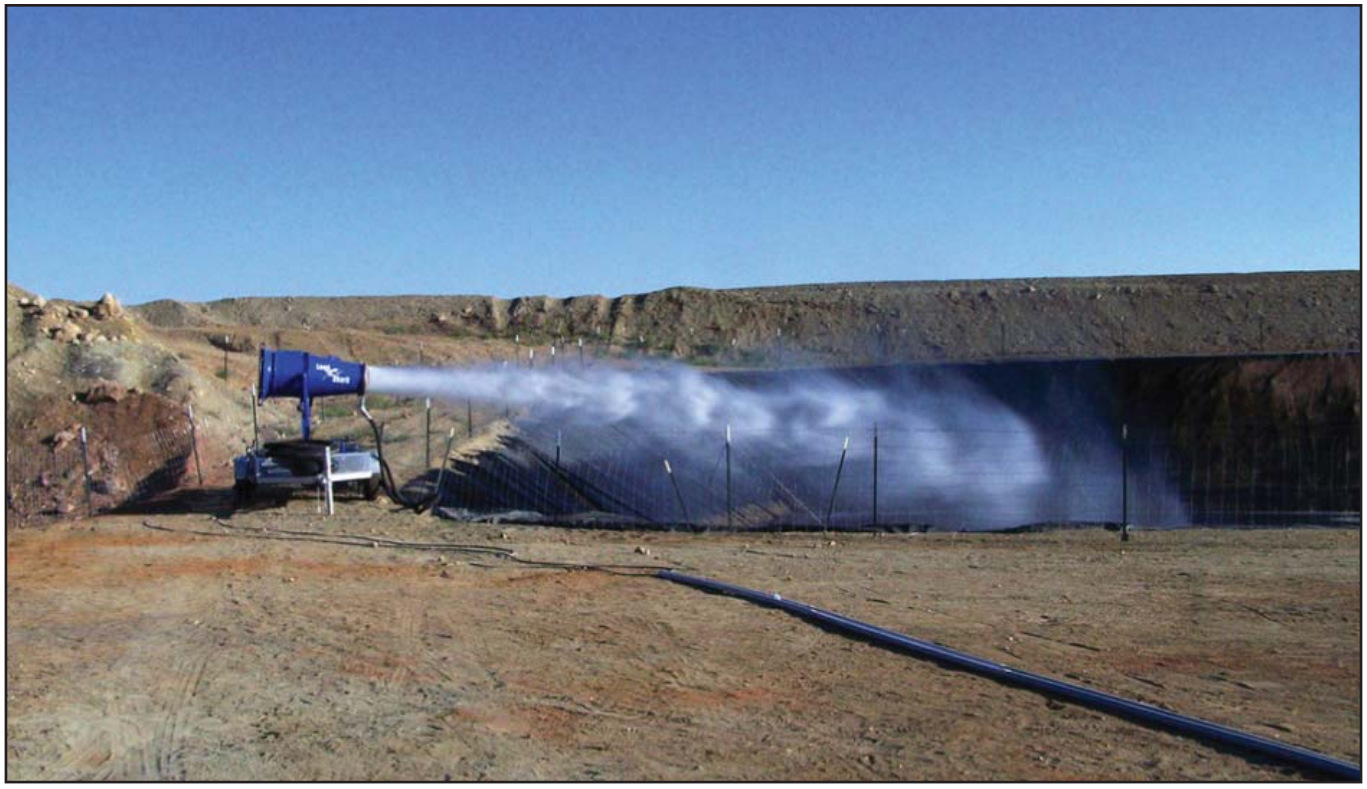
Based on the estimated annual evaporation rate in the region and 42 gpm of average RO brine generation, the Van Gordon evaporation pond does not have sufficient surface area to naturally evaporate the full RO brine flow. Therefore, enhanced evaporation utilizing mechanical spray evaporators is proposed at the Van Gordon evaporation pond. To accelerate evaporation of the disposed RO brine, the Project proposes five (four duty and one standby) mechanical spray evaporators. The evaporators are proposed along the pond's west berm, in order to provide the greatest setback from the Van Gordon Creek corridor. The design criteria of the spray evaporator are summarized in CDM PD Table 2-7. Sound enclosures are proposed around three sides of the mechanical evaporators to reduce noise. Exhibit 2-10, *Spray Evaporator*, shows a spray evaporator and sound enclosure, and the proposed locations.

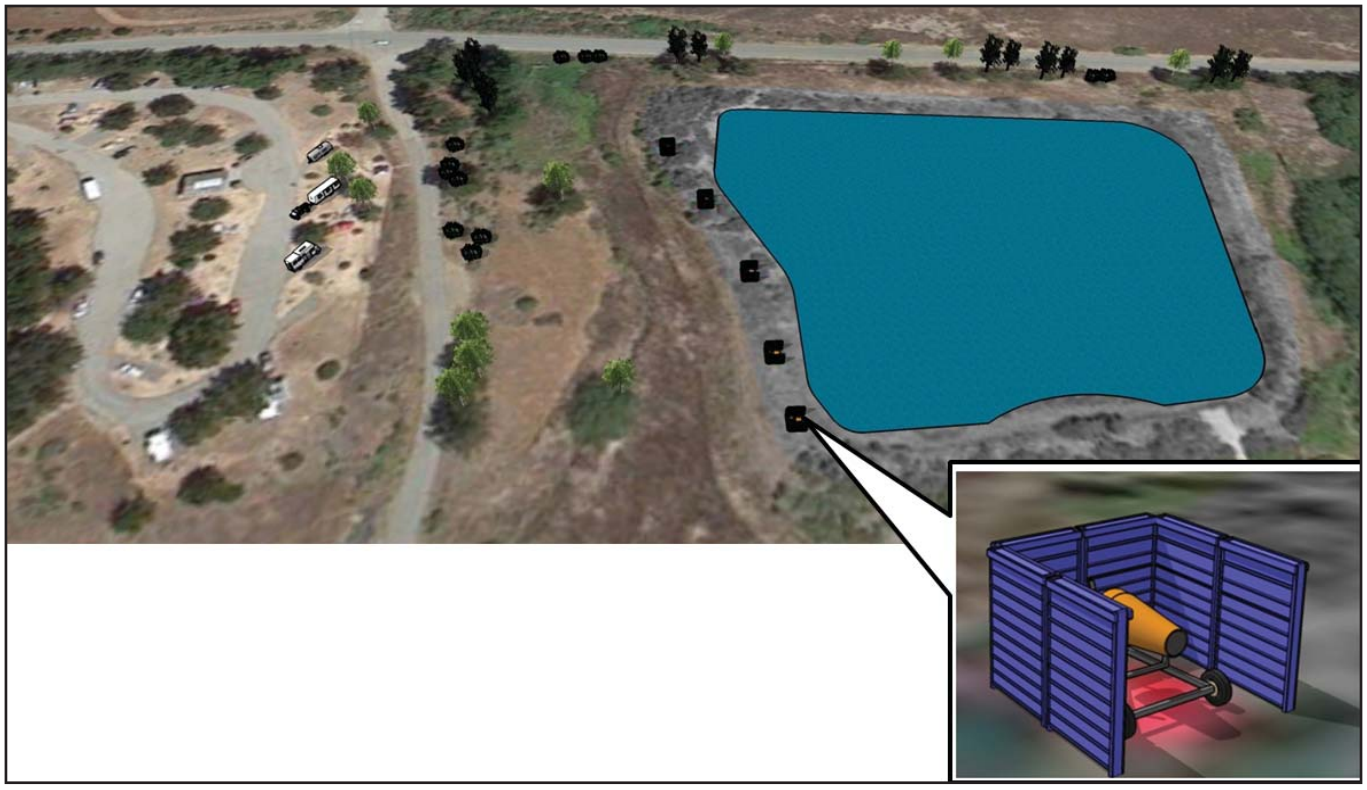
Drift would be controlled with onsite weather stations, which would turn the evaporators on or off depending on wind speed and/or direction to control drift. The evaporators would be operated only when wind direction, wind velocity, temperature and humidity are within the preset ranges. CDM PD Figure 2-11 shows a weather station control panel.

POWER SUPPLY AND CONSUMPTION

Power demand for the evaporation ponds estimated to be 250 KVA. Power for the evaporation ponds would be obtained from a PG&E supplied pad mount transformer connected to an existing PG&E overhead power line along San Simeon Road via a new power drop along Van Gordon Creek Road. The estimated capacity of the transformer would be 300 KVA at 480/277 volts. CDM PD Table 2-8 summarizes an estimated electrical load from the spray evaporators at the brine evaporation pond.

[7] Based on a recent geotechnical investigation, the existing embankments appear to be able to withstand the maximum credible earthquake (CDM PD, Page 20).





NOT TO SCALE

RBF CONSULTING
A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Spray Evaporator

Exhibit 2-10

TIME AND HOURS OF OPERATION

The spray evaporator operation would be controlled by the weather stations and would operate only when wind direction and velocity, temperature, and humidity are within the preset ranges. Considering the local weather, it is assumed the spray evaporators would operate approximately 12 hours per day, during day time, and year round (i.e., 50 percent of the time on annual average).

2.5.4 PROJECT PIPING SYSTEMS

YARD PIPING

The schedule of yard piping, which would be contained within the AWTP, is provided in CDM PD Table 2-9 and shown in CDM PD Figure 2-4. All yard piping would be installed below ground, under the AWTP.

CONVEYANCE PIPING

The schedule of conveyance piping, which would be installed above-ground, is provided in Table 2-2, *Conveyance Pipeline Schedule*, and shown in Exhibit 2-11, *Conveyance Piping Plan*.

Table 2-2
Conveyance Pipeline Schedule

Pipe	Size	Material	Pressure Rating	Length
Product Water (Existing Well 9P7 pipeline to AWTP)	8 inches	PVC or HDPE[1]	150 psi	200 feet
Product Water (AWTP to RIW)	8 inches	PVC or HDPE	150 psi	3,400 feet
Brine (AWTP to Brine Evaporation Pond)	4 inches	PVC or HDPE	150 psi	2,000 feet
MF Filtrate (AWTP to LIW)	4 inches	PVC or HDPE	150 psi	4,400 feet

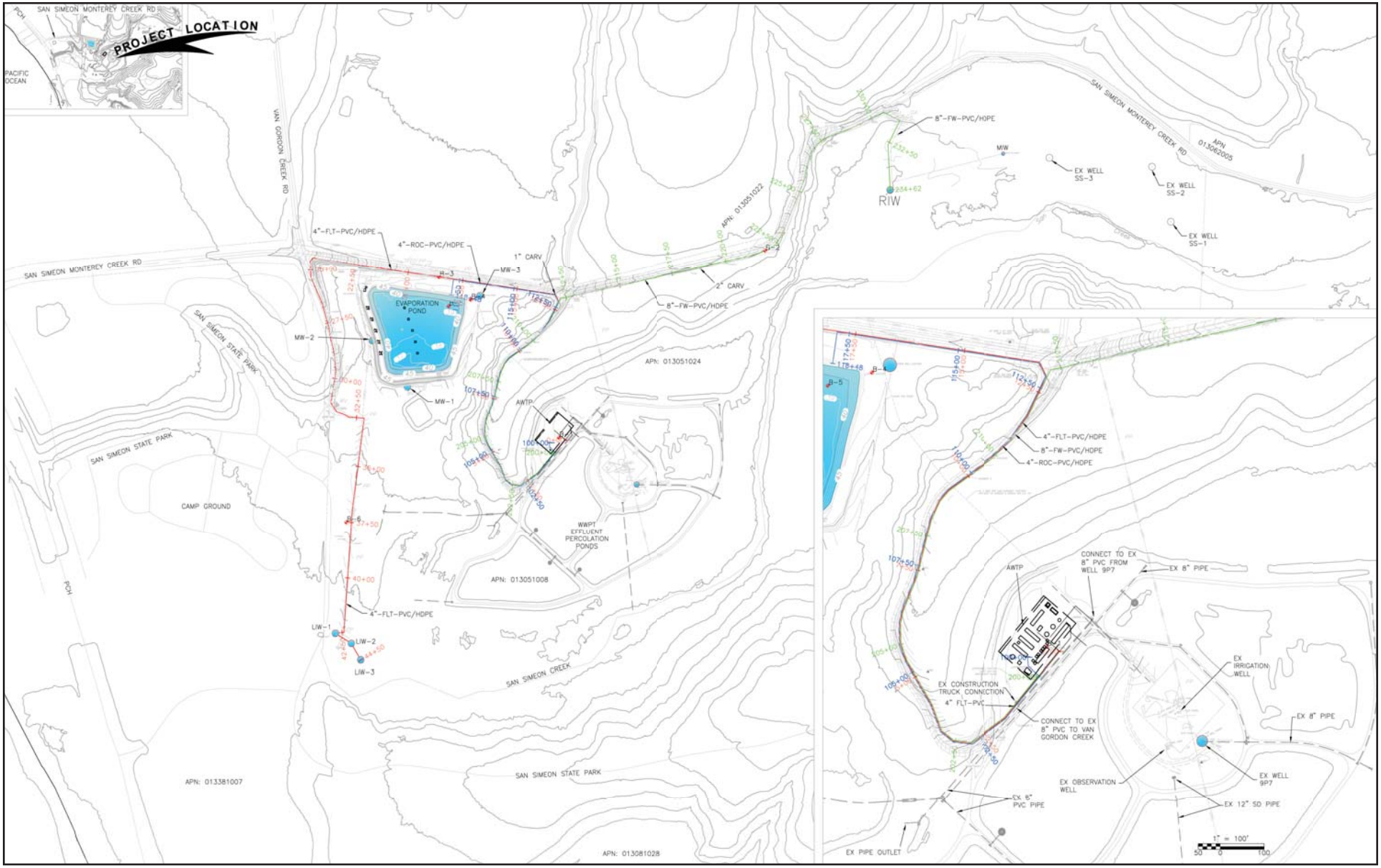
Notes:
1. HDPE – High density polyethylene; and PVC – Polyvinyl chloride

2.5.5 RECHARGE INJECTION WELL (RIW)

The stabilized AWTP finished product water would be pumped for injection into the groundwater basin at the San Simeon well field utilizing a new recharge injection well (RIW). RIW is proposed west of existing potable supply water Well SS-3. In addition, a monitoring well (MIW) is proposed between RIW and the SS-3 Well.

RIW would be 100 feet deep and constructed of 10-inch diameter mild steel well casing with 45 feet of type 304L stainless steel, wire-wrap screen with 0.08-inch wide slot openings. It is screened from 50 to 95 feet below ground surface (bgs). RIW would have a 5.0-foot, stainless steel sediment trap below the well screen. It is anticipated that 454 gpm would be injected into RIW.

The wellhead facilities would be completed above grade. Wellhead facilities would include steel pipe, a control valve to control the flow into RIW, a flow meter to measure the flow, and isolation valves for removal of above ground equipment. No pumps or noise generating equipment are proposed at RIW. A small control panel is proposed at the wellhead.



Source: CDM Smith, June 2014.

RBF CONSULTING
A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Conveyance Piping Plan

Exhibit 2-11

2.5.6 LAGOON INJECTION WELLS (LIWS)

In order to maintain and improve fresh water conditions in the San Simeon lagoon, AWTP product water would be pumped and discharged into Van Gordon Creek at 100 gpm via three LIWs. For this purpose, a new product water pipeline may be routed to the LIWs, or the existing discharge piping of Well 9P7 may be utilized to discharge to Van Gordon Creek adjacent to the AWTP. For the option utilizing LIWs, the MF treated side stream water would be conveyed using an on-grade laid pipeline to the shallow LIWs. The LIWs would be installed north of San Simeon Creek and on the west bank of the Van Gordon Creek.

The LIWs would be approximately 40 feet deep and constructed of 6-inch diameter PVC well casing and mill slot screen with 0.04-inch wide slot openings. They would be screened from approximately 30 to 40 feet bgs. It is anticipated that between 25 and 33 gpm would be injected into each well.

The lagoon injection wellhead facilities are proposed above grade. Wellhead facilities would include steel pipe, control valve to control the flow into the injection well, a flow meter to measure the flow, and isolation valves for removal of above ground equipment. No pumps or noise generating equipment are proposed at the LIWs. A small control panel would be provided at the wellhead.

2.5.7 PROJECT OPERATIONS

Operating and maintaining the equipment would not require onsite full-time staff, since the AWTP would be designed to operate automatically with no operators onsite. However, up to two employees would visit the site daily to visually inspect and maintain the AWTP. The AWTP operation information would be connected to CCSD's WWTP control room for off-site monitoring and control. Because the AWTP will be more expensive to operate than the current use of groundwater wells, it is anticipated that the Project may not operate during wet or normal rainfall periods. During such periods of inactivity, the AWTP would be maintained in a ready state, which may include routinely exercising equipment and valves, as well as pickling of the RO elements.

2.6 PROJECT CONSTRUCTION AND PHASING

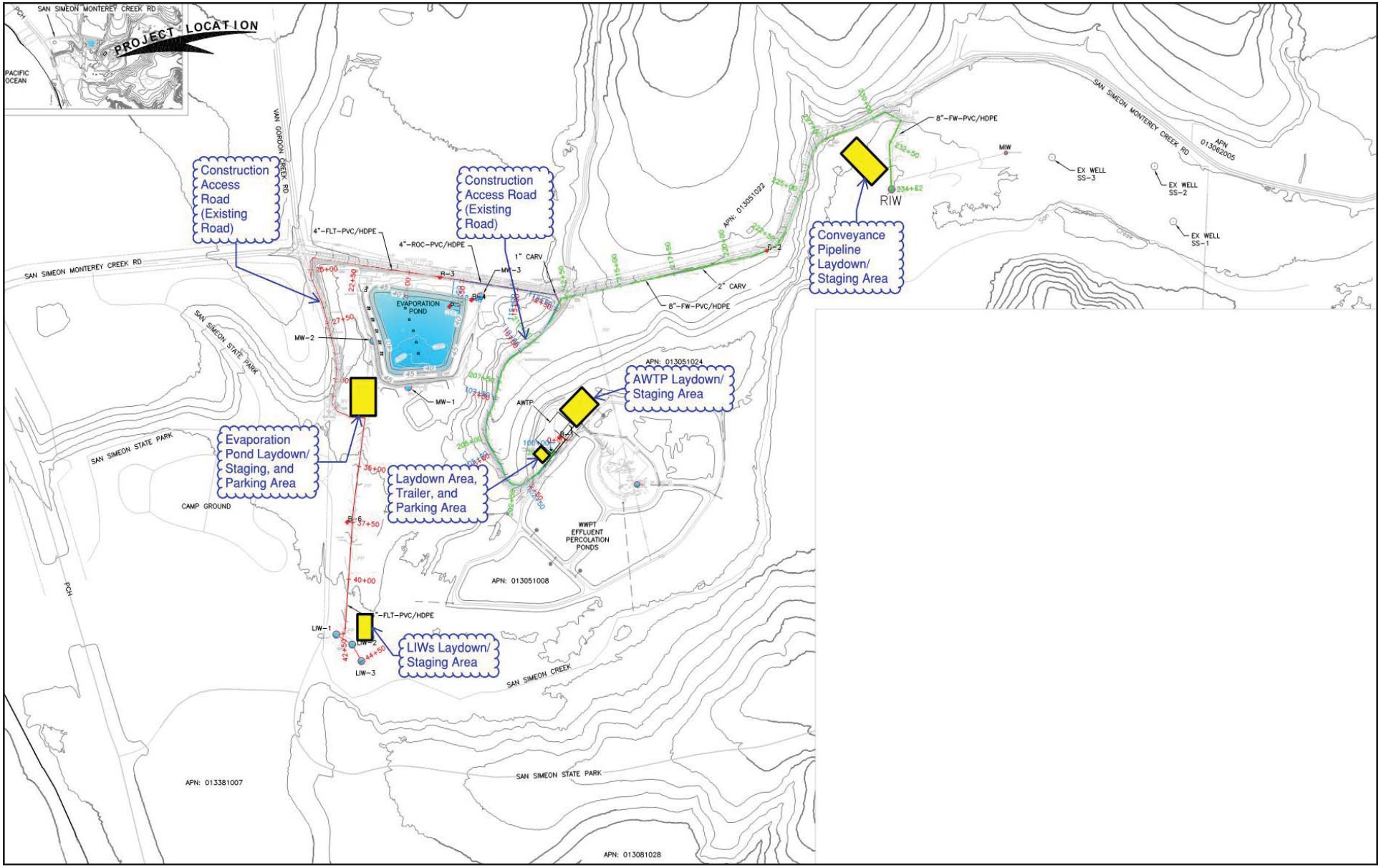
This Project proposed a design-build construction delivery method, which includes construction and installation of the proposed facilities described above. Construction activities include grading, trenching and excavation, as well as installation of equipment on structural footings and concrete housekeeping pads. The Project would be constructed within existing CCSD boundaries.

Approximately 50 yards of cut and 50 yards of fill would be generated during construction of the proposed wells and AWTP. Additionally, installation of the impermeable liner at Van Gordon Reservoir would require removal of vegetation. Additionally, no excavation would be necessary for the proposed pipelines, since they would be above ground.

Exhibit 2-12, *Construction Laydown/Staging Areas*, shows the locations of the proposed construction laydown/staging areas. As shown, the laydown/staging areas would be located in the northern and western portions of the Project site, adjacent to the proposed water facilities.

CONSTRUCTION TIME AND HOURS

As discussed in Section 2.2.1 above, the County issued an Emergency CDP on May 15, 2014, authorizing construction and operation of the proposed emergency Project, subject to various conditions. Construction of the emergency Project began on May 22, 2014. As of the writing of this Initial Study, RIW and MIW have been constructed.



Source: CDM Smith, June 2014.

NOT TO SCALE

RBF CONSULTING A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Construction Laydown/Staging Areas

Exhibit 2-12

Emergency CDP Condition 5 requires the construction work to be completed within 180 days from issuance of the Emergency CDP. The estimated construction period is six months, from May 15, 2014 to November 14, 2014. Construction work times would be 7:00 a.m. to 5:00 p.m. Mondays to Fridays, and 8:00 a.m. to 5:00 p.m. Saturdays, as permitted by CZLUO Section 23.06.042.

2.7 PROJECT APPROVALS

The Project would require the following approvals, among others:

- Cambria Community Services District Board of Directors:
  - Public Hearing and Adoption of IS/MND.

- County of San Luis Obispo:
  - Regular Coastal Development Permit;
  - Grading Permit;
  - Single-Trip Transportation Permit; and
  - Encroachment Permit.

- Other public agencies whose approval may be required:
  - San Luis Obispo County Air Pollution Control District (Rule 202 Permits);
  - Regional Water Quality Control Board Title 27 Permit and Waste Discharge Requirements; and
  - California Department of Public Health, Drinking Water Division Title 22 - Ground Water Recharge Findings of Facts and Conditions Clearance.

3.0 INITIAL STUDY CHECKLIST

3.1 BACKGROUND

1.	**Project Title:** Cambria Emergency Water Supply Project
2.	**Lead Agency Name and Address:** Cambria Community Services District (CCSD) 1316 Tamson Drive, Suite 201 Cambria, California 9342
3.	**Contact Person and Phone Number:** Mr. Robert C. Gresens, P.E. Tel.: 805.927.6223 Fax: 805.927.5584
4.	**Project Location:** 990 San Simeon Creek Road, Cambria
5.	**Project Sponsor's Name and Address:** Cambria Community Services District 1316 Tamson Drive, Suite 201 Cambria, California 934284
6.	**General Plan Designation:** Land Use Category: • Agriculture (AG) Combining Designations: • Local Coastal Program (LCP); • Geologic Study Area (GSA); • San Simeon Creek Flood Hazard (FH); • Sensitive Resource Area (SRA); • Environmentally Sensitive Habitat, Terrestrial Habitat (ESH-TH); and • Environmentally Sensitive Habitat, Coastal Creeks (ESH-CC).
7.	**Zoning:** Refer to Item 6 above.
8.	**Description of the Project:** Refer to Section 2.5, *Project Characteristics*.
9.	**Surrounding Land Uses and Setting:** Refer to Section 2.3.2, *Surrounding Land Uses*.
10.	**Other public agencies whose approval is required (e.g., permits, financing approval or participation agreement).** • Cambria Community Services District; • County of San Luis Obispo; • San Luis Obispo County Air Pollution Control District; • Regional Water Quality Control Board; and • California Department of Public Health, Drinking Water Division.

3.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Less Than Significant Impact With Mitigation Incorporated," as indicated by the Initial Study Checklist questions in Section 4.1 through Section 4.18.

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

4.0 ENVIRONMENTAL ANALYSIS

ENVIRONMENTAL IMPACTS

Sections 4.1 through 4.18, which address the environmental issue areas outlined below, analyze the potential environmental impacts resulting from the proposed Project.

- Aesthetics;
- Agriculture and Forestry Resources;
- Air Quality;
- Biological Resources
- Cultural Resources;
- 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;
- Utilities and Service Systems; and
- Mandatory Findings of Significance.

The environmental analysis in Sections 4.1 through 4.18 is patterned after the Initial Study Checklist recommended by the *CEQA Guidelines* and used by the CCSD in its environmental review process. For the preliminary environmental assessment undertaken as part of this Initial Study's preparation, a determination that there is a potential for significant effects indicates the need to more fully analyze the Project's impacts and to identify mitigation.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the Project's long-term, direct, indirect, and cumulative impacts. To each question, there are four possible responses:

- *No Impact*. The Project will not have any measurable environmental impact on the environment.

- *Less Than Significant Impact*. The Project will have the potential for impacting the environment, although this impact will be below established thresholds that are considered to be significant.

- *Less Than Significant With Mitigation Incorporated*. The Project will have the potential to generate impacts which may be considered as a significant effect on the environment, although mitigation measures or changes to the Project's physical or operational characteristics can reduce these impacts to levels that are less than significant.

- *Potentially Significant Impact*. The Project will have impacts which are considered significant, and additional analysis is required to identify mitigation measures that could reduce these impacts to less than significant levels.

EXISTING REGULATIONS

The existing regulations presented in Sections 4.1 through 4.18 involves compliance with the established local, state, and federal regulatory framework, which includes San Luis Obispo County's Local Coastal Program (LCP) and Coastal Zone Land Use Ordinance, as described below.

LOCAL COASTAL PROGRAM COMPLIANCE

The San Luis Obispo County Local Coastal Program (LCP) is a four-part program that is intended to manage and protect the coastal zone, and ensure compliance with the California Coastal Act. The LCP is comprised of four key documents: Area Plans; Framework for Planning; Coastal Plan Policies; and Coastal Zone Land Use Ordinance.

Local Coastal Program Policy Document

The LCP Policy Document is part of the County's LCP and Land Use Element. Many of its policies include programs and standards. Some of the policies have been implemented in the Coastal Zone Land Use Ordinance (CZLUO) and planning areas standards. The LCP policies relative to the Project are presented under each environmental issue area.

North Coast Area Plan

Key provisions found in Area Plans are land use maps, programs, and standards guiding development. The County's Coastal Zone is divided into four planning areas- the Project site is located in the North Coast (NC) Planning Area, within the Rural North Coast (RNC) community. The NC Planning Area is addressed in the North Coast Area Plan (NCAP). NCAP Chapter 7 contains standards for the NC Planning Area that are mandatory requirements for development. The Planning Area standards (Areawide and Combining Designation) apply to the planning and development of new land uses, and must be satisfied before a new land use permit is approved. The Areawide and Combining Designation standards relative to the Project are presented below.

Coastal Zone Framework for Planning

This document provides designations, descriptions of land use types, and density of dwellings-per-acre allowed in mapped land use categories.

Coastal Zone Land Use Ordinance

Title 23 of the San Luis Obispo County Code is known as the Coastal Zone Land Use Ordinance (CZLUO). These regulations were adopted to protect and promote the public health, safety, and welfare, and to: minimize adverse effects on the public resulting from the inappropriate creation, location, use or design of building sites, buildings, land uses, parking areas, or other forms of land development by providing appropriate standards for development; and protect and enhance the significant natural, historic, archeological and scenic resources within the County as identified by the County General Plan, among other objectives.

MITIGATION MEASURES

In addition to the established regulatory framework described above, this Initial Study recommends feasible mitigation measures to minimize significant adverse impacts, where potential impacts are anticipated to be significant. Mitigation measures are not required for effects which are not found to be significant. The recommended mitigation measures are required to be: fully enforceable through permit conditions, agreements, or other legally binding instruments; consistent with all applicable constitutional requirements (there must be an essential nexus (i.e., connection) between the mitigation measure and a legitimate governmental interest); and "roughly proportional" to the Project impacts.

4.1 AESTHETICS

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. Substantially degrade the existing visual character or quality of the site and its surroundings?		✓		
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			✓	

IMPACT ANALYSIS

4.1.a Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. According to the SLO County Conservation and Open Space Element (page 9.1), visual resources consist of open areas, scenic corridors, and the built environment. Open area and scenic corridor visual resources are discussed below. No built environment (urban landscape) is located in the immediate Project vicinity, thus, no visual impact would occur in this regard.

To recognize visual resources with scenic value, the County applies Combining Designations. Portions of the Project site are designated Sensitive Resource Area (SRA), Environmentally Sensitive Habitat, Terrestrial Habitat (ESH-TH), and Environmentally Sensitive Habitat, Coastal Creeks (ESH-CC); see Coastal Zone North Coast Planning Area Rural Combining Designation Map.[1]

Open Areas

The Conservation and Open Space Element (page 9.1) defines open area visual resources as "agricultural and natural, undeveloped lands."

The Coastal Zone North Coast Planning Area Rural Combining Designation Map shows the boundaries of the Project areas designated SRA, ESH-TH, and ESH-CS. The Project site's open areas and features that are considered visual resources involve the San Simeon Creek and Van Gordon Creek corridors (ESH-CS) that traverse the southeastern and western portions of the Project site, respectively. As shown on Exhibit 2-6, *Project Overview*, the Project's areas of disturbance would be located entirely outside of the creek corridors; thus, the Project would not have an adverse visual effect on the creek corridors.

Additional visual resources in the Project's vicinity involve the Monterey pine forest and State Park foot trail situated between the San Simeon Creek corridor and State Park Washburn Primitive Campground, south of the Project site. A minimal portion of the Project site's southwestern corner is designated SRA and ESH-TH to recognize these visual resources. However, the forest and trail do not extend onto the site's southwestern corner. Additionally, due to topographical variations and the San Simeon Creek corridor vegetation, the proposed water facilities would not be visible from the Washburn Primitive Campground sites, which are located south of the Project site. Therefore, the

[1] County of San Luis Obispo Website, http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download_Center/Land_Use_Maps.htm, Accessed May 15, 2014.

Project would not have an adverse visual effect on the Monterey pine forest and State Park foot trail located to the south.

The small stand of Monterey pine that is located on the Project site (where existing Well 9P7 is located) is isolated and does not form part of the ESH-TH-designated Monterey pine forest to the south. The Project proposes to utilize Well 9P7 as the advanced water treatment plant (AWTP) source water well. No Monterey pine would be removed to implement this improvement. Given the scale and nature of the proposed improvements to Well 9P7, and since no Monterey pine would be removed, the Project would not have an adverse visual effect on this isolated stand.

The San Simeon well field, percolation pond system, and percolation pond (Van Gordon Reservoir) where the Project proposes new facilities contain ruderal vegetation, which is not considered a unique or attractive landscape feature, and not within the boundaries of the designated SRA, ESH-TH, and ESH-CS.

The Pacific Ocean coastline is located approximately 0.30 mile west of the Project site. Due to topographical changes and intervening vegetation, the Project would not be visible from the ocean or scenic coastal areas. Therefore, the Project would not have an adverse effect on a scenic vista.

Scenic Corridors

The COSE (page 9.1) defines scenic corridors as areas that have scenic or historic qualities that are visible from recognized roadways. Scenic corridors are further defined (COSE page 9.3) as view areas, or "viewsheds" from popular public roads and highways that have unique or outstanding scenic qualities. There are no popular public roads or highways located in the Project's immediate vicinity. Highway 1, which is designated an All-American Road (San Luis Obispo North Coast Byway - Route 1) and a State Scenic Highway (Route 1 Scenic Highway), is located approximately 0.2 mile west of the Project site. Due to topographical changes and intervening vegetation, the Project would not be visible from Highway 1. San Simeon - Monterey Creek Road and Van Gordon Creek Road, which form the Project site's northern and western boundaries, are remote rural roads. The topographical variations and vegetation that align the roadways would also partially screen motorists' views of the Project. Therefore, the Project would not have an adverse effect on a scenic corridor or views from adjacent roads.

Overall, the Project is consistent with the relevant LCP Policies (see *Existing Regulations* Section below) that address protection and preservation of visual and scenic resources: unique/attractive features of the landscape are preserved (LCP 1); views to/along the ocean and scenic coastal areas are not impacted (LCP 2); public view [popular public road] corridors are not impacted (LCP 4); and Monterey pine trees would not be removed (LCP 7). The Project is consistent with NCAP Standard AW-6, since it would not be visible from Highway 1. Finally, because the Project would not be visible from the shoreline, public beaches, the Morro Bay estuary, or any of the roads specified in the NCAP for Critical Viewsheds, Scenic Corridors, or SRA's, the Project would be exempt from Coastal Zone Land Use Ordinance (CZLUO) Section 23.04.210, *Visual Resources*; see CZLUO Section 23.04.210a.

EXISTING REGULATIONS

Local Coastal Program Policies:

Visual and Scenic Resources

LCP 1 Protection of Visual and Scenic Resources. Unique and attractive features of the landscape, including but not limited to unusual landforms, scenic vistas and sensitive habitats are to be preserved protected, and in visually degraded areas restored where feasible.

LCP 2 Site Selection for New Development. Permitted development shall be sited so as to protect views to and along the ocean and scenic coastal areas. Wherever possible, site selection for new development is to emphasize locations not visible from major public view corridors….

LCP 4 New Development in Rural Areas. New development shall be sited to minimize its visibility from public view corridors. Structures shall be designed (height, bulk, style) to be subordinate to, and blend with, the rural character of the area. New development which cannot be sited outside of public view corridors is to be screened utilizing native vegetation; however, such vegetation, when mature, must also be selected and sited in such a manner as to not obstruct major public views. New land divisions whose only building site would be on a highly visible slope or ridgetop shall be prohibited.

LCP 7 Preservation of Trees and Native Vegetation. The location and design of new development shall minimize the need for tree removal. When trees must be removed to accommodate new development or because they are determined to be a safety hazard, the site is to be replanted with similar species or other species which are reflective of the community character.

North Coast Area Plan Standards:

Site Design and Building Construction

AW-6 Site Selection. Primary site selection for new development shall be locations not visible from Highway 1 as follows:

a. Sites shall be selected where hills and slopes would shield development unless no alternative location exists or the new development provides visitor-serving facilities.

b. New development shall be located so that no portion of a structure extends above the highest horizon line of ridgelines as seen from Highway 1.

MITIGATION MEASURES

No mitigation is required.

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

***No Impact*.** The Project site is not located within a State scenic highway. Therefore, the Project would not substantially damage scenic resources within a State scenic highway.

MITIGATION MEASURES

No mitigation is required.

4.1.c Substantially degrade the existing visual character or quality of the site and its surroundings?

***Less Than Significant With Mitigation Incorporated*.** The Project site contains various water facilities including the San Simeon well field, a percolation pond system, and an effluent storage reservoir; see Exhibit 2-3, *Existing Site Conditions*. As shown on Exhibit 2-3, the Project site's existing visual character is dominated by natural undeveloped lands, which are comprised primarily of ruderal vegetation, some willow riparian forest, and the percolation pond system and reservoir. The single stand of Monterey Pine that exists on the Project site contributes only nominally to the site's visual character. Areas to the north and east of the Project site are characterized by

undulating hillsides with undeveloped lands used for agriculture. Areas to the south and west of the Project site involve natural undeveloped lands and recreational areas that are characterized by willow riparian forest within the creek corridor and ruderal vegetation within and surrounding the campgrounds.

A project is generally considered to have a significant visual/aesthetic impact if it substantially changes the character of a project site such that it becomes visually incompatible or visually unexpected when viewed in the context of its surroundings. Such changes would degrade the existing visual character or quality of the site and its surroundings.

Short-Term Impacts

Short-term construction-related activities associated with Project construction would temporarily alter the Project site's visual character. Construction materials/equipment would be staged at various locations throughout the site, depending on the component under construction; see Exhibit 2-12, *Construction Laydown/Staging Areas*. The "window" of construction-related activities at the Project site would be approximately 180 days.

Construction activities would not be visible from most of San Simeon Creek Campground's camp sites, which are located west of the Project site. The Campground's northeastern most camp sites (Nos. 18, 19, 21, 23, and 24) would have intermittent/partial views of construction activities associated with the evaporation pond and LIWs, temporarily degrading the site's visual character. With implementation of Mitigation Measure AES-1, which addresses construction staging areas and routine maintenance, impacts in this regard would be less than significant. Additionally, due to intervening vegetation, the Campground's easternmost camp sites would not have views of the AWTP or RIW occurring east of the Van Gordon Creek corridor.

Construction activities would not be visible from any Washburn Primitive Campground sites, which are located south of the Project site, due to topographical variations and the San Simeon Creek corridor vegetation.

Therefore, given the short duration (approximately 180 days) of construction activities and the limited construction activities that would occur just east of the San Simeon Creek Campground, with Mitigation Measure AES-1 incorporated, the Project's construction activities would not substantially degrade the existing visual character or quality of the site and its surroundings. A less than significant impact would occur in this regard.

Long-Term Impacts

The Project proposes water facilities as described in Section 2-5, *Project Characteristics*, and shown on Exhibit 2-6. The proposed water facilities, which would be located entirely within the existing public utility facilities site, would be of varying heights and scales:

- *Pipelines:* Three above-grade pipelines are proposed at a maximum height of 12 inches;
- *Wells:* Similar to existing Well 9P7 (see Exhibit 2-4, *Existing Well 9P7*), four injection and four monitoring wells are proposed at a maximum height of 3.0 feet;
- *Advanced Water Treatment Plant (AWTP):* An AWTP (approximately 100 by 170 feet) is proposed at a maximum height of 15 feet;
- *Impermeable Liner:* An impermeable liner is proposed within the evaporation pond; and
- *Mechanical Spray Evaporators:* Five mechanical spray evaporators within sound enclosures (three sides) are proposed along the pond's west berm, each approximately 13 by 13 feet, at a maximum height of 12.6 feet; see Exhibit 2-10, *Spray Evaporator*).

Additionally, two overhead power drops (lines) are proposed along Van Gordon Creek Road and along the well access road.

The Project would not substantially change the character of the Project site such that it becomes visually incompatible or visually unexpected when viewed in the context of the existing CCSD public utility site where the proposed facilities would be located. The San Simeon Creek Campground's northeastern most camp sites would have intermittent/partial views of the power drop along the well access road and the evaporation pond, similar to existing views. These camp sites would also have intermittent/partial views of the spray evaporators, which are proposed along the western berm. With implementation of Mitigation Measure AES-2, which requires that: areas of the site where native vegetation was removed and where water facilities would not be located, be revegetated with indigenous plants to minimize changes in visual character; and vegetation comprised of indigenous plants be provided along the Project site's western boundary to screen the proposed Project facilities from campground views and minimize changes in visual character, impacts in this regard would be less than significant.

Due to topographical changes and intervening vegetation, the northeastern most camp sites would not have views of the proposed LIWs. Additionally, the proposed water facilities would not be visible from any Washburn Primitive Campground sites, which are located south of the Project site, due to topographical variations and the San Simeon Creek corridor vegetation. Therefore, no impacts involving long-term visual character would occur in this regard.

Overall, the Project is consistent with the relevant LCP Policies that address visual character: unique/attractive features of the landscape are preserved (LCP 1); structures would be designed (height, bulk, style) to be subordinate to, and blend with, the rural character of the area (through compliance with CZLUO Chapter 23.04, see below); and Monterey pine trees would not be removed (LCP 7). The Project is subject to compliance with CZLUO Chapter 23.04, *Site Design Standards*, which establishes standards for the design and layout of sites for land uses. The purpose of these standards is to support, through careful site evaluation and design, the establishment of land uses in a manner that is compatible with existing land uses and neighborhoods, and the natural environment. Site development standards, including minimum site area, setbacks, heights, and fencing/screening, that are relevant to visual resources are specified. Following compliance with the County's regulatory requirements, the Project would not substantially degrade the visual character or quality of the site and its surroundings.

EXISTING REGULATIONS

Local Coastal Program Policies: See LCP Policies 1, 4, and 7 above.

Coastal Zone Land Use Ordinance Standards:

CZLUO Chapter 23.04 (Site Design Standards). This Chapter establishes standards for the design and layout of sites for land uses. The purpose of these standards is to support, through careful site evaluation and design, the establishment of land uses in a manner that is compatible with existing land uses and neighborhoods, and the natural environment. Standards are provided for the following site development features that are relevant to visual resources:

- Parcel size;
- Minimum site area;
- Setbacks;
- Heights; and
- Fencing and screening.

MITIGATION MEASURES

AES-1 Prior to Grading Permit issuance, the CCSD shall confirm that the plans and specifications stipulate that, Project construction shall implement standard practices to minimize potential adverse impacts to the site's visual character, including the following:

- Construction staging areas shall be located as far as practicable from sensitive receptors; and
- Construction areas shall receive appropriate routine maintenance to minimize unnecessary debris piles.

AES-2 Prior to Grading Permit issuance: areas of the site where native vegetation has been removed and where water facilities are not proposed, shall be revegetated with indigenous plants; and vegetation comprised of indigenous plants shall be provided along the Project site's western boundary to screen the proposed water facilities from San Simeon Creek Campground view (northeastern most camp sites 18, 19, 21, 23, and 24). Prior to revegetation and new vegetation, a Landscape Plan (for the areas of revegetation and along the site's western boundary) shall be prepared for review and approval by the County.

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

Less Than Significant Impact. There are two primary sources of light: light emanating from building interiors that pass through windows and light from exterior sources (i.e., street lighting, parking lot lighting, building illumination, security lighting, and landscape lighting). Depending upon the location of the light source and its proximity to adjacent light sensitive uses, light introduction can be a nuisance, affecting adjacent areas and diminishing the view of the clear night sky. Lighting associated with non-residential uses may cause spillover impacts to nearby sensitive receptors.

Light and glare are not currently being emitted from the Project site. Nighttime construction would not be required and the construction equipment would not create a substantial source of daytime light or glare.

The Project would include lighting features at the AWTP and spray evaporators solely for security purposes. The nearest light sensitive receptors to the Project site are the State Park recreational uses to the south and west. Lighting introduced by the Project is not anticipated to cause significant spillover impacts to these receptors, due to the distance that exists between the AWTP and evaporators and these existing uses, and the intervening vegetation. Further, the Project would be subject to compliance with CZLUO Section 23.04.320 (Outdoor Lights), which establishes standards for all outdoor night-lighting sources. Compliance with NCAP CW Standard 13 (*Exterior Lighting*) would further minimize potential impacts in this regard. Following compliance with County requirements, the Project would result in less than significant light and glare impacts.

EXISTING REGULATIONS

Coastal Zone Land Use Ordinance Standards:

CZLUO Section 23.04.320 (Outdoor Lights). This Section establishes standards relative to the following lighting features that are applicable to all outdoor night-lighting sources:

- Illumination;
- Light directed onto lot;
- Minimization of light intensity;
- Light sources to be shielded;
- Ground illuminating lights;
- Elevated feature illumination;
- Height of light fixtures; and
- Street lighting.

MITIGATION MEASURES

No mitigation is required.

4.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	**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?				✓

IMPACT ANALYSIS

4.2.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?

Less Than Significant Impact. The SLO County Prime Farmland Map[1] depicts areas of land according to their land use capability classifications and indicates the Project site is classified Prime and Non-Prime Agricultural Soils, including Class I, II, and III soils. The SLO County General Plan Agriculture Element (Appendix F, *Glossary* (page F-2)) defines Non-Prime Agricultural Soils as "areas of land that do not contain prime agricultural soils but are classified in the Agriculture land use category by the Land Use Element." Prime Coastal Zone Agricultural Soils are defined as "all land which qualifies for rating as Class I or II in the Natural Resources Conservation Service land use capability classifications." However, the Project site is not currently in agricultural use. The site has been in public utility use,

[1] County of San Luis Obispo Website, http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download_Center/Natural_Resources_Maps.htm, Accessed May 16, 2014.

since the CCSD constructed its San Simeon well field in 1979 and percolation pond system in 1994.[2] The site's existing water facilities are shown on Exhibit 2-3, *Existing Site Conditions*, and described in Section 2.3.1, *On-Site Land Uses*. Therefore, the Project would not convert farmland to non-agricultural use.

MITIGATION MEASURES

No mitigation is required.

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

Less Than Significant Impact. The Project site is designated Agriculture (AG). However, the Project would not conflict with the site's existing AG zoning, since Public Utility Facilities[3] are allowable uses in AG-designated sites, according to Coastal Table O. Additionally, the proposed water facilities would be constructed within an existing CCSD public utility site. Further, the AG-designated areas outside of the Project site would not be disturbed, and the Project site is not under a Williamson Act contract. Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract.

MITIGATION MEASURES

No mitigation is required.

4.2.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))?

No Impact. The Project site is designated Agriculture (AG). Therefore, the Project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland.

MITIGATION MEASURES

No mitigation is required.

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

No Impact. The Project site is not currently, nor has been in the past, in forest use. The site contains various water facilities; see Exhibit 2-3 and Section 2.3.1. Therefore, the Project would not result in the loss of forest land or conversion of forest land to non-forest use.

MITIGATION MEASURES

No mitigation is required.

[2] Written Communication: Robert C. Gresens, P.E., District Engineer, Cambria Community Services District, June 5, 2014.

[3] Public Utility Facilities [J5] include public water system wells, treatment plants, and storage, and community wastewater treatment plants, settling ponds, and disposal fields, among other (see Coastal Zone Framework for Planning Excerpts Land Use Definitions).

4.2.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?

No Impact. Agricultural uses are located north and east of the Project site, and a Monterey pine forest is located south of the site, beyond the San Simeon Creek corridor. However, the Project involves construction of water facilities entirely within an existing public utility facility site. Therefore, the Project would not involve other changes in the existing environment which, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

4.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management 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 plan?			✓	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		✓		
c. 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		✓		
d. Expose sensitive receptors to substantial pollutant concentrations?		✓		
e. Create objectionable odors affecting a substantial number of people?			✓	

INTRODUCTION

The Project site is located within the South Central Coast Air Basin (Basin), and is under the jurisdiction of the San Luis Obispo County Air Pollution Control District (SLOAPCD). SLOAPCD's current guidelines and emission thresholds established in the *CEQA Air Quality Handbook* (CEQA Handbook) (updated April 2012) were adhered to in the assessment of the Project's air quality impacts.

Both the State of California and the Federal government have established health-based Ambient Air Quality Standards (AAQS) for six criteria air pollutants:

- Carbon monoxide (CO);
- Ozone (O_3);
- Nitrogen oxides (NO_X);
- Sulfur oxides (SO_X);
- Particulate matter less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively); and
- Lead (Pb).

Ozone is formed by a photochemical reaction between NO_X and reactive organic gasses (ROGs). Thus, impacts from O_3 are assessed by evaluating impacts from NO_X and ROGs.

Table 4.3-1, *Construction Air Emissions Thresholds*, presents the SLOAPCD significance thresholds for construction emissions that have been established by the CEQA Handbook. Mitigation of construction activities is required when the emission thresholds are equaled or exceeded by fugitive and/or combustion emissions.

Table 4.3-1
Construction Air Emissions Thresholds

Pollutant	Threshold[1]		
	Daily[3]	Quarterly Tier 1[4]	Quarterly Tier 2[5]
ROG + NO_X (combined)	137 lbs	2.5 tons	6.3 tons
Diesel Particulate Matter	7 lbs	0.13 tons	0.32 tons
Fugitive Particulate Matter (PM_{10}), Dust[2]	-	2.5 tons[5]	-

Notes:
1. Daily and quarterly emission thresholds are based on the California Health & Safety Code and the CARB Carl Moyer Guidelines.
2. Any project with a grading area greater than 4.0 acres of continuously worked area will exceed the 2.5 ton PM_{10} quarterly threshold
3. For construction projects expected to be completed in less than one quarter (90 days) exceedance of the daily thresholds requires standard mitigation measures.
4. For construction projects lasting more than one quarter, exceedance of Quarterly Tier 1 thresholds requires standard mitigation measures, Best Available Control Technology (BACT) for construction equipment. If implementation of standard mitigation and BACT measures cannot bring the Project below thresholds, off-site mitigation may be necessary.
5. For construction projects lasting more than one quarter, exceedance of Quarterly Tier 2 threshold requires the implementation of Construction Activity Management Plan (CAMP) in addition to Tier 1 requirements.

Source: SLOAPCD, *CEQA Air Quality Handbook,* April 2012.

The threshold criteria established by the SLOAPCD to determine the significance level for long-term operational emissions from a project are presented in Table 4.3-2, *Operational Air Emissions Thresholds*.

Table 4.3-2
Operational Air Emissions Thresholds

Pollutant	Threshold[1]	
	Daily	Annual
ROG + NO_x (combined)[2]	25 lbs	25 tons
Diesel Particulate Matter[2]	1.25 lbs	-
Fugitive Particulate Matter (PM_{10}), Dust[2]	25 lbs	25 tons
CO	550 lbs	-

Notes:
1. Daily and annual emission thresholds are based on the California Health & Safety Code Division 26, Part 3, Chapter 10, Section 40918 and the CARB Carl Moyer Guidelines for Diesel Particulate Matter.
2. CalEEmod – Use winter operational emission data to compare to operational thresholds.

Source: SLOAPCD, *CEQA Air Quality Handbook,* April 2012.

IMPACT ANALYSIS

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

Less Than Significant Impact. The purpose of a consistency finding is to determine whether a project is inconsistent with the assumptions and objectives of regional air quality plans, and thus whether it would interfere with the region's ability to comply with Federal and State Ambient Air Quality Standards (AAQS). Therefore, it is

necessary to assess the proposed Project's consistency with the land use and transportation control measures and strategies outlined in the Clean Air Plan (CAP) for the Basin. If the project is consistent with these measures, the project is considered consistent with the CAP. Assumptions programmed within the CAP are based on the growth assumptions and land use designations in local general plans. Therefore, consistency with the CAP is analyzed in regard to the Project's consistency with the *County of San Luis Obispo General Plan*.

San Luis Obispo County (County) is classified as a State and Federal attainment area for CO and $PM_{2.5}$. The County is also classified as a Federal attainment area for ozone and PM_{10}. However, the Project site is located within a classified State non-attainment area for ozone and PM_{10}. The Project would generate short-term construction emissions from stationary and mobile equipment, typical of infrastructure construction projects. However, standard emission control measures would be implemented, in order to minimize such emissions to below a level of significance. Short-term construction emissions are further addressed under Response 4.3.b, below. Construction-related emissions would cease following completion of Project construction activities. The Project does not involve amendments to the County's General Plan, or conflict with the CAP assumptions regarding growth and long-term air quality. Additionally, the Project would not generate a significant increase in pollutant emissions due to additional vehicular traffic or stationary sources (operational emissions). Therefore, due to the Project's nature and scope, the Project would not conflict with or obstruct implementation of the CAP and a less than significant impact would occur in this regard.

MITIGATION MEASURES

No mitigation is required.

4.3.b Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant With Mitigation Incorporated. The proposed water facilities are described in Section 2.0, *Project Description*. Project construction would include grading, excavation, construction, as well as installation of equipment on structural footings and concrete pads. It is anticipated that only a minimal amount of earthmoving activities would occur due to construction of the proposed water supply facilities. Construction would occur over 180 days. Installation of the leachate collection and removal system (LCRS), and the vadose zone monitoring system at the evaporation pond would require minimal grading, while the installation of the impermeable liner would require removal of the pond's vegetation. Along the evaporation pond's southern berm, an existing spillway would be demolished to provide a uniform slope elevation around the pond. Minimal excavation would be necessary for the proposed Advanced Water Treatment Plant (AWTP), since it would be within a container. Additionally, no excavation would be necessary for the proposed pipelines, since they would be above ground.

Stationary or mobile powered on-site construction equipment would include trucks, excavator, loader, paver, paving equipment, roller, rubber tired dozer, rubber-tired loaders, skid-steer loaders, crane, trencher, and other equipment. Based on the nominal amount of daily work trips required for Project construction, construction worker trips are not anticipated to substantially contribute to or affect traffic flow on local roadways, and are therefore not considered notable emission sources. The analysis of daily construction emissions has been prepared utilizing the California Emissions Estimator Model (CalEEMod) computer model. Refer to Appendix A, Air Quality/Greenhouse Gas Data, for the CalEEMod modeling outputs and results. Table 4.3-3, *Construction Air Emissions*, provides estimates of the short-term construction emissions that are anticipated to occur during the Project's construction phase.

Table 4.3-3
Construction Air Emissions

Pollutant	Pollutant[1]		
	ROG + NO_X (pounds per day)[2]	Diesel Particulate Matter (pounds per day)[2]	Fugitive Particulate Matter (PM_{10}) (tons/quarter-year)[3]
Unmitigated Construction Emissions	82.94	6.954	0.20
Mitigated Construction Emissions	82.94	6.95	0.20
SLOAPCD Threshold	137	7	25
Is Threshold Exceeded?	**No**	**No**	**No**

ROG = reactive organic gas
NO_X = nitrogen oxides
PM_{10} = fine particulate matter (up to 10 microns in diameter)
tons/quarter-year = tons per quarter of a year

1. Emissions calculated using the CalEEMod, as recommended by the San Luis Obispo County Air Pollution Control District (SLOAPCD).
2. Construction would be completed in approximately 92 days. Therefore, the daily threshold was conservatively used.
3. The SLOAPCD does not have a daily threshold for fugitive particulate matter, there for the Quarterly Tier 1 threshold was used.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from grading, excavation and construction is expected to be short-term and would cease upon project completion. Additionally, most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} (particulate matter smaller than 10 microns) generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants. PM_{10} sources include open fields, roadways, storage piles, earthwork, etc. As depicted in Table 4.3-3, total PM_{10} emissions would not exceed the SLOAPCD thresholds during construction. Therefore, impacts would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to/from the site. As presented in Table 4.3-3, construction equipment and worker vehicle exhaust emissions would be below the established SLOAPCD thresholds. Therefore, air quality impacts from equipment and vehicle exhaust emission would be less than significant.

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. The ROG emissions associated with paving and painting have been quantified with CalEEMod. As shown in Table 4.3-3, ROG emissions would be below SLOAPCD thresholds and impacts would be less than significant.

Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by state, federal, and international agencies and was identified as a toxic air contaminant by the California Air Resources Board (CARB) in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (August 2000), serpentinite and ultramafic rocks are not known to occur within the project area. As naturally occurring asbestos is not present at the Project site, there would be no impact in this regard.

Total Daily Construction Emissions

In accordance with the SLOAPCD Guidelines, CalEEMod was utilized to model construction emissions for ROG, NO_X, and PM_{10}. As indicated in Table 4.3-3, impacts would be less than significant for all criteria pollutants during construction. Emissions would be further reduced with implementation of Mitigation Measure AQ-1. Table 4.3-3 indicates that the Project's total daily construction emissions would not exceed the SLOAPCD construction thresholds for ROGs, NO_X, and PM_{10}. Therefore, the Project would result in less than significant construction-related air quality impacts.

Long-Term Operational Emissions

Operation of the proposed emergency water facilities would not result in significant impacts, as this type of facility does not directly emit air pollutants. Power for the AWTP would be obtained from a PG&E supplied pad mount transformer with an estimated capacity of 750 Kilovolt-ampere (kVA) at 480/277 volts. In addition, a 300 kVA at 480/277 volts pad mount transformer and associated components would be installed to supply power to the evaporation pond. It is noted that these facilities would not be considered onsite sources of air pollutants, as they would be electrically powered. Should any backup generators be utilized they would be subject to SLOAPCD Rule 431.

In addition, the Project would not result in long-term mobile-source pollutant emissions. The Project would be designed to operate automatically with no operators on-site. The only trips that would be required would be for periodic inspection and maintenance. Therefore, mobile source emissions generated by Project-related trips would be nominal and would result in less than significant impacts.

EXISTING REGULATIONS

San Luis Obispo Air Pollution Control District Standards:

Rule 202 - Permits

A. General

1. Authority to Construct: Any person building, erecting, altering or replacing any article, machine, equipment or other contrivance, the use of which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, shall first obtain authorization for such construction from the Air Pollution Control Officer.

2. Permits to Operate: Before any article, machine, equipment or other contrivance, the use of which may cause, increase, eliminate, reduce or control the issuance of air contaminants may be operated or used, a Permit to Operate shall be obtained from the Control Officer, except as provided in subsection A.5.

Rule 401 – Visible Emissions

A. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any hour which is:

1. As dark or darker in shade as that designated as No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines.

2. Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection A.1 of this Rule.

Rule 402 - Nuisance

A. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Rule 431 - Stationary Internal Combustion Engines

D. Exemptions: With the exception of recordkeeping and reporting requirements necessary to justify an exemption, the provisions of this Rule shall not apply to the operation of stationary internal combustion engines used under the following conditions: 3) Emergency standby engines operated during either an emergency or maintenance operation. Maintenance operation is limited to 100 hours per calendar year.

G. Recordkeeping: The operator of any engine subject to the provisions of Section D of this Rule shall maintain an inspection log that includes, on a monthly basis the following data:

a. Date and results of each engine inspection;
b. A summary of any preventive or corrective maintenance taken;
c. The total hours of operation;
d. The type and quantity of fuel used; and
e. Any additional information required in the Engine Operator Inspection Plan.

The operator shall maintain the inspection log for a period of three (3) years after the date of each entry. The log shall be available for inspection by the District upon request.

MITIGATION MEASURES

AQ-1 General Air Quality. The following measures shall be incorporated into the construction phase of the Project and shown on all applicable plans:

- Maintain all construction equipment in proper tune according to manufacturer's specifications;
- Fuel all off-road and portable diesel powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, auxiliary power units, with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road); and
- Maximize to the extent feasible, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.

Fugitive PM_{10} Mitigation Measures

All required PM_{10} measures shall be shown on applicable grading or construction plans. In addition, the Applicant shall designate personnel to insure compliance and monitor the effectiveness of the required dust control measures (as conditions dictate, monitor duties may be necessary on weekends and holidays to insure compliance); the name and telephone number of the designated monitor(s) shall be provided to the SLOAPCD prior to construction/ grading permit issuance

- Reduce the amount of the disturbed area where possible;
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Only reclaimed (nonpotable) water shall be used;
- All dirt stock-pile areas should be sprayed daily as needed;
- Permanent dust control measures identified in the approved Project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities;
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114;
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site (all water shall be non-potable); and
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.

4.3.c 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant With Mitigation Incorporated. Cumulative projects include local development, as well as general growth in the area. However, as with most development, the greatest source of emissions is from vehicular traffic that can travel well out of the local area. Therefore, in terms of air quality, the cumulative analysis would extend beyond any local projects and when wind patterns are considered, would cover an even larger area. Accordingly, the cumulative analysis for a project's air quality analysis must be regional in nature.

Construction and operation of cumulative projects would further degrade the local air quality, as well as the Basin's air quality. Air quality would be temporarily degraded during construction activities that occur separately or simultaneously. However, the greatest cumulative impact on the quality of regional air would be the incremental addition of pollutants from increased traffic from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. The Project involves unmanned water facilities and would not be a direct trip generator. Therefore, due to the Project's nature and scope, the contribution to the Basin air emissions would not be "cumulatively considerable."

Additionally, adherence to SLOAPCD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed. As a result, the proposed project would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Therefore, cumulative operational impacts associated with implementation of the proposed project would be less than significant.

MITIGATION MEASURES

Refer to Mitigation Measure AQ-1. No additional mitigation is required.

4.3.d Expose sensitive receptors to substantial pollutant concentrations?

***Less Than Significant With Mitigation Incorporated*.** Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The sensitive receptors located on or near the Project site include the following (note these distances are from the Project boundary and not the actual areas of disturbance/construction activities):

- The nearby public recreation sites (the State Park Washburn Primitive Campground located approximately 2,625 feet to the southeast and San Simeon Creek Campground (located approximately 75 feet to the western portion of the Project site, just south of San Simeon – Monterey Creek Road); and

- The two single-family dwellings (State Park camp hosts/employee housing) located approximately 450 feet to the west of the Project site (of the proposed AWTP), approximately 750 feet south of San Simeon - Monterey Creek Road.

Emissions associated with the construction would primarily be due to the use of construction equipment diesel engines. Diesel engines would emit diesel particulate matter, which is defined by the CARB as a carcinogen. Under SLOAPCD, the proximity of sensitive receptors to a construction site constitutes a special condition and may require a more comprehensive evaluation of toxic diesel particulate matter impacts. As discussed previously, the Project is anticipated to result in less than significant construction-related impacts with incorporation of recommended Mitigation Measure AQ-1. The Project would also be subject to compliance with SLOAPCD Section 2.1.1(a): *Idling Restrictions Near Sensitive Receptors for Both On and Off-Road Equipment*. Compliance with the SLOAPCD rules and regulations would ensure that impacts involving toxic air contaminants would be less than significant and no additional mitigation is necessary.

According to the California Air Pollution Control Officers Associations (CAPCOA) *Health Risk Assessments For Proposed Land Use Projects*, adopted by the SLOAPCD, a Health Risk Assessment (HRA) would apply if the Project was considered a new proposed land use project that generates toxic air contaminants (such as gasoline stations, distribution facilities or asphalt batch plants) that impact sensitive receptors; or a new land use project that

will place sensitive receptors (e.g., residential units) in close proximity to existing toxic sources (e.g., freeway). The proposed Project does not include such uses, and thus, due to the lack of stationary source emissions, no health risk assessment is required. As the Project involves unmanned water facilities, which are not a direct trip generator, the Project would be incapable of resulting in localized operational long-term impacts to surrounding sensitive receptors. Impacts in this regard would be less than significant.

MITIGATION MEASURES

Refer to Mitigation Measure AQ-1. No additional mitigation is required.

4.3.e Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. The Project's construction activities would generate airborne odors from the operation of construction vehicles (i.e., diesel exhaust). However, construction related odors are typically from localized sources and do not emanate far from the source. Thus, odors would be isolated to the immediate vicinity of the construction site. The Project's construction activities would not create objectionable odors affecting a substantial number of people.

The Project involves construction and operation of emergency water supply facilities. Given their nature and scope, the proposed water wells and pipelines would not generate any odors. The AWTP generated waste stream (brine), which would be disposed for evaporation at the evaporation pond, would not create objectionable odors. Additionally, the evaporators would be controlled with weather stations, which would turn the evaporators on or off depending on wind speed and/or direction to control drift. The weather stations, installed onsite, would measure site weather conditions, including wind velocity, wind direction, humidity and temperature. The evaporators would be operated only when wind direction, wind velocity, temperature and humidity are within the preset ranges, which would limit the dispersion of any potential odors from the Project site. Therefore, the Project would not create objectionable odors affecting a substantial number of people.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

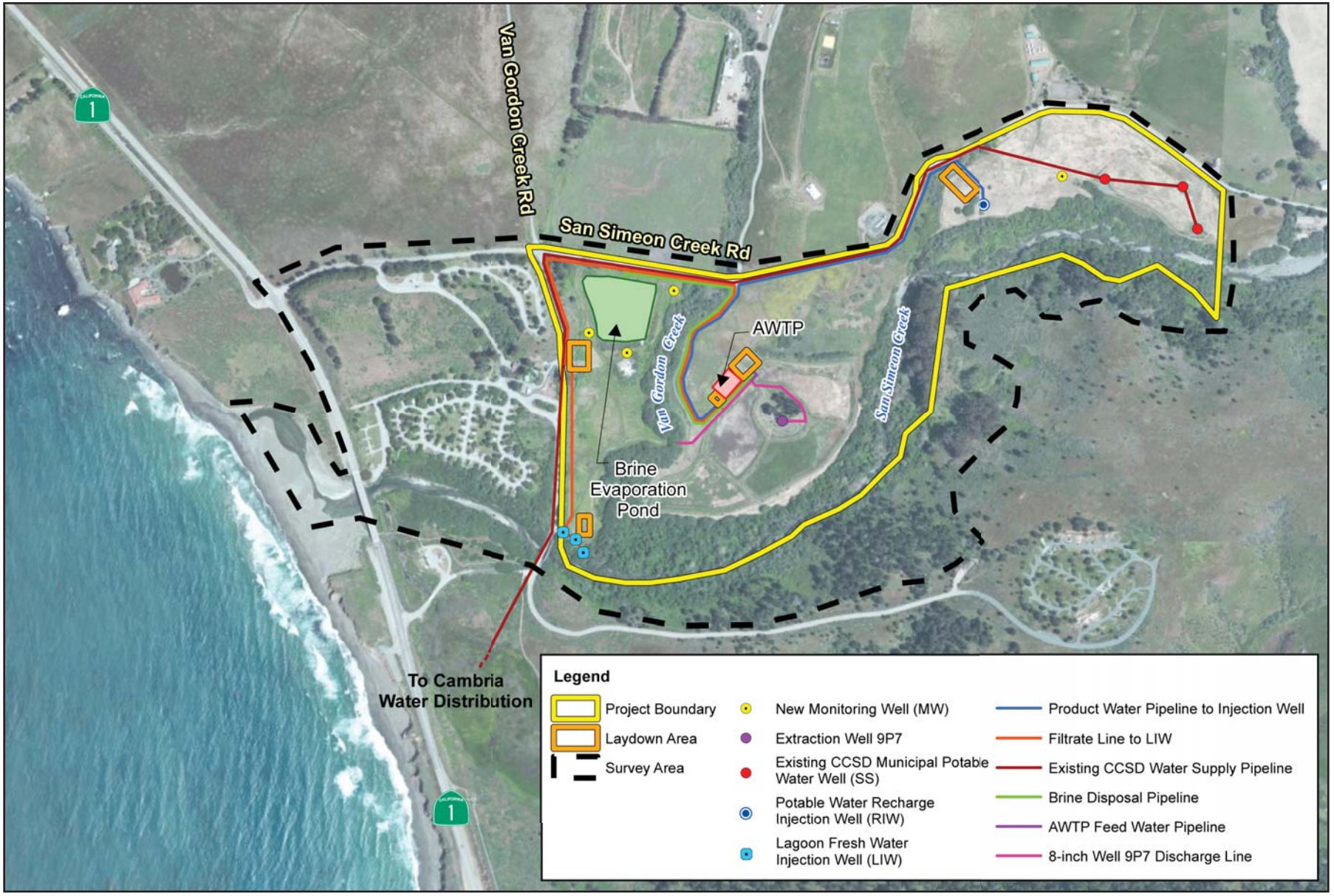
4.4 BIOLOGICAL RESOURCES

This section is based on the Cambria Emergency Water Supply Project Habitat Assessment (HA) (RBF Consulting, June 2014); see Appendix B, *Biological Resources Assessment*. The biological resources *Regulatory Background* discussion is provided in Appendix B Section 2.

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
c. 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?		✓		
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		✓		
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		✓		
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

This section contains the findings of the HA for the Project, which was conducted by RBF Consulting on May 8 and 9, 2014, to identify sensitive habitats and/or species potentially occurring within the boundaries of the Project site and/or adjacent study area that could pose a constraint to development, and assess the potential impacts from Project implementation. Since 1991, there have been several biological studies conducted for projects in the general area surrounding the Project site.

For purposes of this analysis, the Project site involves the CCSD 96-acre property shown on Exhibit 4.4-1, *Project Site Map*. A small section of the San Simeon Creek Lagoon (approximately the uppermost 230 feet) is located within the Project site; the remaining downstream portion continues offsite to the west onto San Simeon State Beach. Therefore, the following analysis addresses the survey area, which is comprised of the Project site and the western portion of the San Simeon Creek Lagoon.



Source: National Hydrography Dataset, CDM Smith, ESRI World Imagery Basemap.

NOT TO SCALE

RBF CONSULTING A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Project Site Map

Exhibit 4.4-1

Special attention was given to the suitability of the habitat onsite to support California red-legged frog (*Rana draytonii*), a federally threatened species and California species of special concern; western pond turtle (*Emys marmorata*), a California species of special concern; tidewater goby (*Eucyclogobius newberryi*), a federally endangered species and California species of special concern; the steelhead (*Oncorhynchus mykiss irideus*) south/central California coast distinct population segment (DPS), a federally threatened species and California species of special concern; western snowy plover (*Charadrius alexandrinus nivosus*), a federally threatened species and California species of special concern; two-striped garter snake, a California species of special concern; and general raptor species.

A literature review and records search was conducted to determine which sensitive biological resources have the potential to occur on the Project site or within its general vicinity. In addition, a general habitat assessment and field investigation of the Project site was conducted. The field investigation provided information on the site's existing conditions and potential for sensitive biological resources to occur. The methodologies used (concerning literature review, habitat assessment/field investigation, soil series assessment, plant communities, plants, wildlife and jurisdictional areas) are discussed in detail in Appendix B Section 3.

The existing site conditions, including the local climate, topography/soils and surrounding land uses are discussed in detail in Appendix B Section 4.

EXISTING CONDITIONS

The Project site is primarily undeveloped, although heavily disturbed. It consists mostly of open fields, with some paved roads and building development along Van Gordon Creek Road.

Vegetation

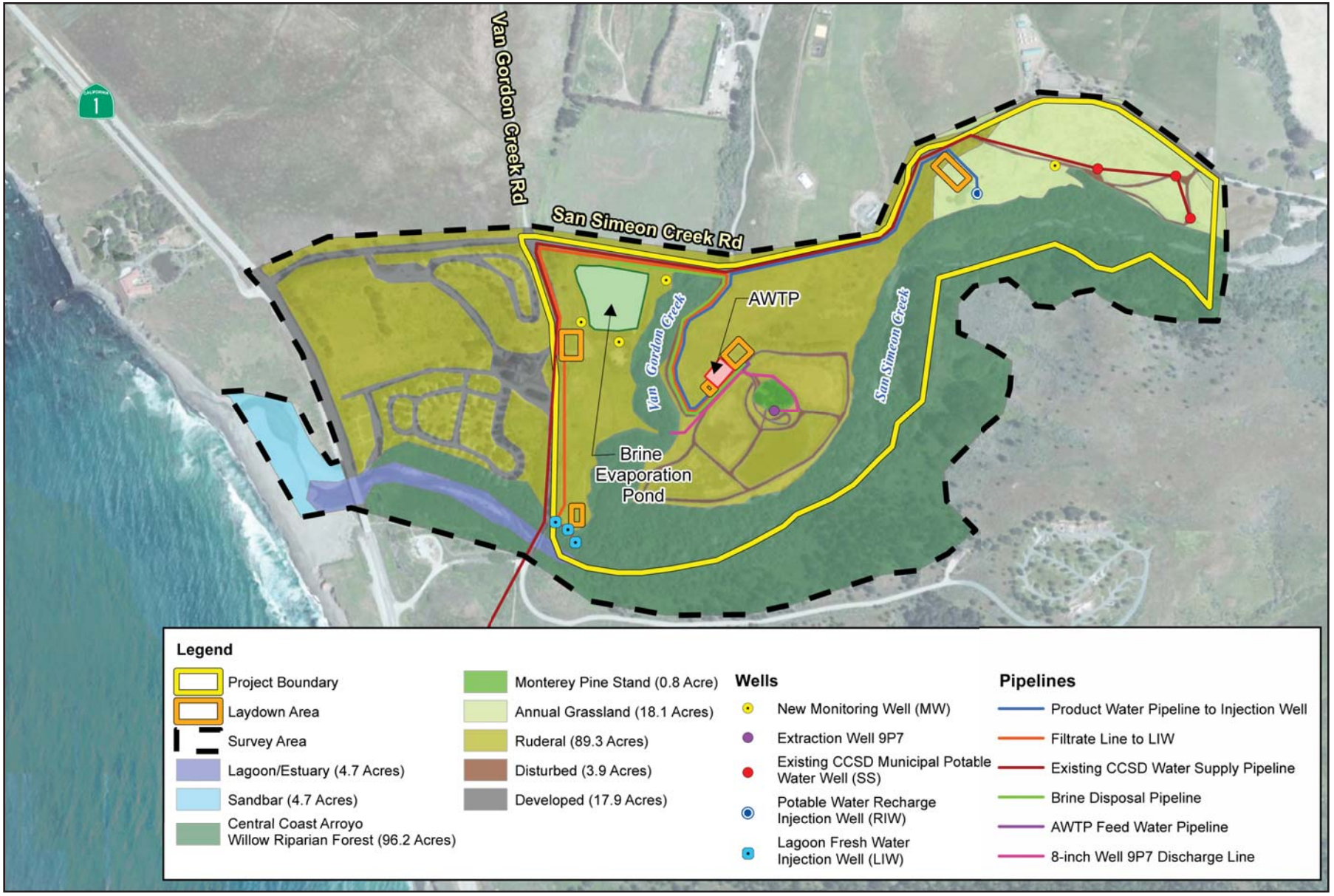
Seven plant communities were observed within the boundaries of the Project site during the habitat assessment (Exhibit 4.4-2, *Vegetation Map*): Central Coast Arroyo Willow Riparian Forest; Monterey Pine Stand; Lagoon/Estuary; Annual Grassland; Ruderal; Disturbed; and Developed. The Lagoon/Estuary vegetation extends here to the west into the survey area. A Sand Bar is located offsite to the west, within the survey area. The Sand Bar (and western portion of the San Simeon Creek Lagoon) are located offsite. These plant communities are described in further detail below.

Central Coast Arroyo Willow Riparian Forest

The Central Coast Arroyo Willow Riparian Forest is characterized by a dense, low, closed-canopy forest dominated by arroyo willow (*Salix lasiolepis*). It typically occurs in low gradient stream reaches in areas that are moist to saturated sandy or gravelly soil, especially in areas within the coastal fog incursion zone. Other common species along the edge of San Simeon Creek include western sycamore (*Platanus racemosa*), eucalyptus (*Eucalyptus* sp.), and cape ivy (*Delairea odorata*).

Monterey Pine Stand

One small stand of Monterey pine is located within the Project site. It is located in the center of the percolation ponds, with Well 9P7 located underneath the trees. The canopy cover in this area is composed entirely of Monterey pines, with the understory composed mostly of ripgut brome (*Bromus diandrus*) and wild oat (*Avena fatua*).



Source: CDM Smith, ESRI World Imagery Basemap.

NOT TO SCALE

RBF CONSULTING A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Vegetation Map

Exhibit 4.4-2

Lagoon/Estuary

San Simeon Creek Lagoon is located west of the Project site, at the downstream end of San Simeon Creek. It crosses under SR-1 and spreads onto San Simeon State Beach, providing valuable habitat for steelhead, tidewater goby, and threespine stickleback. At the time of the habitat assessment, the sand bar restricting the water from the shore was closed, resulting in a freshwater lagoon habitat. The sand bar generally opens in late fall and closes again by mid-spring; while the sand bar is open, oceanic salt water combines with the freshwater of San Simeon Creek to create an estuary. The downstream end of the lagoon is not vegetated, however, the upstream end contains emergent and riparian vegetation, including cattails (*Typha* sp.) and arroyo willow.

Annual Grassland

An annual grassland is located on the eastern side of the Project site between San Simeon Monterey Creek Road and San Simeon Creek. There are three existing wells located in this area, which is also the reinjection well's (RIW's) proposed location. Some of the more common species in this area include canary grass (*Phalaris aquatica*), wild oat, ripgut brome, and coyote bush (*Baccharis pilularis*).

Ruderal

Much of the Project site can be considered ruderal. This includes the percolation ponds, the brine evaporation pond, and the unpaved path from the northeastern corner of the site to the lagoon injection wells' (LIWs') proposed location. Some of the more common species present within these areas include ripgut brome, black mustard (*Brassica nigra*) and shortpod mustard (*Hirschfeldia incana*), giant horse tail (*Equisetum telmateia* ssp. *braunii*), fennel (*Foeniculum vulgare*), plantain (*Plantago* sp.), coyote bush, Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), and canary grass.

Disturbed

Disturbed areas within the survey area can be described as unpaved dirt roads, particularly those surrounding the percolation ponds and those passing through the well field. These areas are not vegetated.

Developed

Developed areas within the survey area include existing wells and buildings, as well as the main access road to Well 9P7. These areas are not vegetated.

Wildlife

Plant communities provide food sources, along with foraging, nesting and denning sites, cover, and protection from adverse weather or predation. This section provides a discussion of those wildlife species observed, expected or not expected to occur onsite. The discussion is to be used as a general reference and is limited by the season, time of day, and weather condition in which the survey was conducted. Wildlife observations were based on calls, songs, scat, tracks, burrows and actual sightings of animals.

Amphibians

Much of the Project site and its immediate surrounding area would constitute suitable habitat for amphibians. However, only one amphibian was detected during surveys: Sierran chorus frog (*Pseudacris sierrae*). Adult frogs were heard calling in San Simeon Creek and tadpoles of various development stages were observed in several disconnected small pools in the dry portion of the creek. Other common amphibian species that could occur in San Simeon Creek or during heavy rainfall and subsequent ponding of water in the percolation ponds include western

toad (*Anaxyrus boreas*), American bullfrog (*Lithobates catesbeianus*), ensatina (*Ensatina eschscholtzii*), and various species of slender salamander (*Batrachoseps* sp.). The Project site and surrounding area have the potential to support multiple special-status amphibians, including foothill yellow-legged frog (*Rana boylii*), California red-legged frog, and Coast Range newt (*Taricha torosa*). The status and habitat requirements for each of these three species are discussed in greater detail in the *Sensitive Wildlife* Section below.

Reptiles

The Project site has the potential to support both terrestrial and aquatic reptiles. Two reptile species were observed during the habitat assessment: western fence lizard (*Sceloporus occidentalis*); and coast garter snake (*Thamnophis elegans terrestris*). Much of the Project site is primarily composed of disturbed, altered areas that are presently overgrown with vegetation. Two creeks, Van Gordon Creek and San Simeon Creek traverse portions of the Project site. The general Project vicinity has the potential to support a number of reptilian species including gopher snakes (*Pituophis catenifer*), garter snakes (*Thamnophis* ssp.), California kingsnake (*Lampropeltis getula californiae*), northern Pacific rattlesnake (*Crotalus oreganus oreganus*), alligator lizard (*Elgaria multicarinata*), and side-blotched lizard (*Uta stansburiana*). The Project site and surrounding area have the potential to support multiple special-status reptiles, including western pond turtle and two-striped garter snake (*Thamnophis hammondii*). The status and habitat requirements for each of these two species are discussed in greater detail in the *Sensitive Wildlife* Section below.

Avian

The Project site and adjacent area support a high variety of avian species. Because of the high number of species observed, only the most numerous are mentioned here. Those that were observed in the greatest quantities included turkey vulture (*Cathartes aura*), California gull (*Larus californicus*), Pacific-slope flycatcher (*Empidonax difficilis*), bushtit (*Psaltriparus minimus*), cedar waxwing (*Bombycilla cedrorum*), song sparrow (*Melospiza melodia*), red-winged blackbird (*Agelaius phoeniceus*), and house finch (*Haemorhous mexicanus*). The Project site and surrounding area have the potential to support special-status raptors such as ferruginous hawk (*Buteo regalis*) and prairie falcon (*Falco mexicanus*). The status and habitat requirements for each of these two species are discussed in greater detail in the *Sensitive Wildlife* Section below.

Mammals

The plant communities within the Project site are anticipated to provide suitable habitat for a number of mammalian species acclimated to heavy disturbance. However, most mammal species are nocturnal and are difficult to observe during a diurnal field visit. No mammals were directly observed during the habitat assessment, though coyote (*Canis latrans*) and other large mammal scat was observed throughout the survey area, and a woodrat (*Neotoma* sp.) midden was observed on the border of San Simeon Creek. Common mammalian species expected to occur on the Project site include California ground squirrel (*Otospermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtis californicus*), deer mouse (*Peromyscus maniculatus*), western skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), cottontail rabbits (*Sylvilagus audubonii*), and opossum (*Didelphis virginiana*). The Project site and surrounding area have the potential to support special-status mammals, including fringed myotis (*Myotis thysanodes*) and Yuma myotis (*Myotis yumanensis*). The status and habitat requirements for each of these two species are discussed in greater detail in the *Sensitive Wildlife* Section below.

Fish

When wetted, San Simeon Creek, Van Gordon Creek, the San Simeon Creek Lagoon, and their tributaries provide suitable habitat for fish. Threespine stickleback (*Gasterosteus aculeatus*) and the federally endangered tidewater goby (*Eucyclogobius newberryi*) were observed during the habitat assessment in San Simeon Creek and San Simeon Creek Lagoon. In addition to tidewater goby, these waterways have the potential to support another special-status fish species, steelhead trout. The status and habitat requirements for both of these species are discussed in greater detail in the *Sensitive Wildlife* Section below.

Nesting Birds

The plant communities within and adjacent to the Project site, have the potential to provide suitable nesting opportunities for raptors and passerines. The habitat assessment was conducted during the breeding season, and one likely red-tailed hawk (*Buteo jamaicensis*) nest was observed. A pair of red-tailed hawks was observed for a long period circling and flying in the vicinity of a large nest in a tall pine tree on the edge of San Simeon Creek, however, neither bird was observed entering or leaving the nest.

Migratory Corridors and Linkages

The eastern portion of the Project site abuts the foothills of the Santa Lucia Mountains. This mountain range provides a natural corridor to the north and south along the Coast Ranges. However, while the Project vicinity is considered to be a north-south migratory linkage along the mountains, no formal east-west linkage has been recognized along San Simeon Creek or the other waterways by connectivity assessments such as Missing Linkages or the California Essential Habitat Connectivity Project. Regardless, San Simeon Creek and the other waterways are likely to provide valuable migration habitat for birds and fish. San Simeon Creek is recognized by the California Coastal Commission and by CDFW as an essential creek for steelhead migration, and the lagoon that forms at the mouth of San Simeon Creek can host both juvenile steelhead and tidewater goby. While California red-legged frog can migrate or move to upland areas during the nonbreeding season, this is decided by individual frogs and is not necessarily a feature of every frog in a population. Nevertheless, frogs that may be present in San Simeon Creek or other waterways in the Project vicinity may migrate up and down the waterways or leave the water and head to upland grasslands during seasonal migrations.

Sensitive Biological Resources

The CNDDB was queried for reported locations of listed and sensitive plant and wildlife species as well as sensitive natural plant communities in the Cambria, Pebblestone Shut-in, Pico Creek, and San Simeon USGS 7.5-minute quadrangles. A search of published records of these species was conducted within these quadrangles using the CNDDB Rarefind 5 online software. The CNPS Inventory of Rare and Endangered Plants of California supplied information regarding the distribution and habitats of vascular plants in the vicinity of the Project site. The habitat assessment was used to assess the ability of the plant communities found onsite to provide suitable habitat for relevant special-status plant and wildlife species.

The literature search identified 33 sensitive plant species, 16 sensitive wildlife species, and two sensitive habitats as having the potential to occur within the queried quadrangles. Sensitive plant and wildlife species were evaluated for their potential to occur within the Project boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in Appendix A of Appendix B. Appendix A of Appendix B summarizes conclusions from analysis and field surveys regarding the potential occurrence of listed and sensitive plant and wildlife species within the Project site.

Numerous special-status plant and wildlife species are known to occur or have the potential to occur on the Project site or in its general vicinity. In particular, the percolation ponds, San Simeon Creek, and the San Simeon Creek Lagoon have the highest potential to support special-status species.

Sensitive Plants

Thirty-three (33) special-status plant species have been recorded in the Cambria, Pebblestone Shut-in, Pico Creek, San Simeon USGS quadrangles. Based on habitat requirements for specific species, availability, and quality of habitats needed by sensitive plant species, it was determined that the survey area has a moderate potential to provide suitable habitat for two sensitive plant species, with one additional species that was observed to be present. These species are listed below.

Compact Cobwebby Thistle. Compact cobwebby thistle (*Cirsium occidentale* var. *compactum*) is a perennial herb that flowers between April and June. It is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that it is rare, threatened, or endangered in California and elsewhere, and is fairly endangered in California. It is endemic to California and is primarily known from San Luis Obispo County. It occurs in chaparral, grassland, coastal prairies, and coastal scrub on dunes and in clay soils at elevations between 16 and 492 feet.

There is suitable habitat for this species within the Project site's grassland areas. Many of the soils in the Project area also have clay elements necessary to support this species. This species was detected in 1991 on a coastal bluff approximately 0.25 mile north of the western edge of San Simeon Creek Lagoon and approximately 0.5 miles from the edge of the Project site. This species is expected to have a moderate potential to occur.

Jones' Layia. Jones' layia (*Layia jonesii*) is an annual herb that flowers between March and May. It is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is fairly endangered in California. It is endemic to California and is only known to occur in San Luis Obispo County. It occurs in clay and serpentine soils in chaparral and valley and foothill grassland at elevations between 16 and 1,312 feet.

Suitable habitat for this species occurs in the grassland areas. Many of the soils in the Project area also have clay elements needed to support this species. This species is expected to have a moderate potential to occur.

Monterey Pine. Monterey pine (*Pinus radiata*) is a perennial evergreen tree. It is designated by the CNPS with the Rare Plant Rank 1B.1, indicating that is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California. It is cultivated throughout the world however, only occurs naturally at three locations in California, including one near Cambria. It occurs in closed-cone coniferous forests and cismontane woodlands at elevations between 82 and 607 feet in elevation.

This species was observed onsite during the habitat assessment. It is present in a small stand in the center of the percolation ponds, surrounding Well 9P7.

Sensitive Wildlife

Sixteen (16) special-status wildlife species have been recorded in the Cambria, Pebblestone Shut-in, Pico Creek, San Simeon USGS quadrangles. Based on habitat requirements for specific species, availability and quality of habitats needed by sensitive wildlife species, it was determined that the Project site has a moderate to high potential to provide suitable habitat for ten (10) sensitive wildlife species. One additional sensitive wildlife species was observed onsite.

Amphibian and Reptile Species

Based on the results of the habitat assessment, it was determined that the habitat in and around the Project site has a moderate to high potential to provide suitable habitat for five (5) sensitive amphibian and reptile species listed in the CNDDB as having the potential to occur on or within the general vicinity of the Project site.

Western Pond Turtle. The western pond turtle is designated by the CDFW as a California species of special concern. It typically inhabits slow-moving streams, ponds, and marshes with exposed banks, logs, and other suitable locations for basking. Pond turtles mate and lay eggs in spring and summer in upland grassland habitat, and in most of their range, they will overwinter between October and April.

Western pond turtle has been previously documented in San Simeon Creek and San Simeon Creek Lagoon, however, was not observed during the habitat assessment. Suitable habitat is located within these two areas, particularly in the downstream reaches of San Simeon Creek where the creek substrate gives way from rocks to

sandy or muddy bottoms, which are often utilized by pond turtles for hiding during evasive movements. This species has a high potential to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.

Foothill Yellow-legged Frog. Foothill yellow-legged frog is designated by the CDFW as a California species of special concern. It is primarily found in slow-moving rocky streams with open, sunny banks, though it may also be found in isolated pools and backwaters. Surrounding vegetation may include forests, woodlands, chaparral, and meadow communities. Foothill yellow-legged frogs typically breed between April and July after water levels have stabilized and turbidity has decreased.

Suitable habitat for this species is located in the upland portions of San Simeon Creek, where the creek contains a rocky substrate. At the time of the habitat assessment, this area was almost completely dry, with only small pools persisting that contained Sierran chorus frog tadpoles. This species has a moderate potential to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.

California Red-legged Frog. The CRLF is federally listed as threatened and is designated by the CDFW as a California species of special concern. The CRLF is primarily found near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover and is most common in lowlands or foothills. The CRLF breeds typically breeds in winter and spring between February and April in permanent or ephemeral water sources including lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.

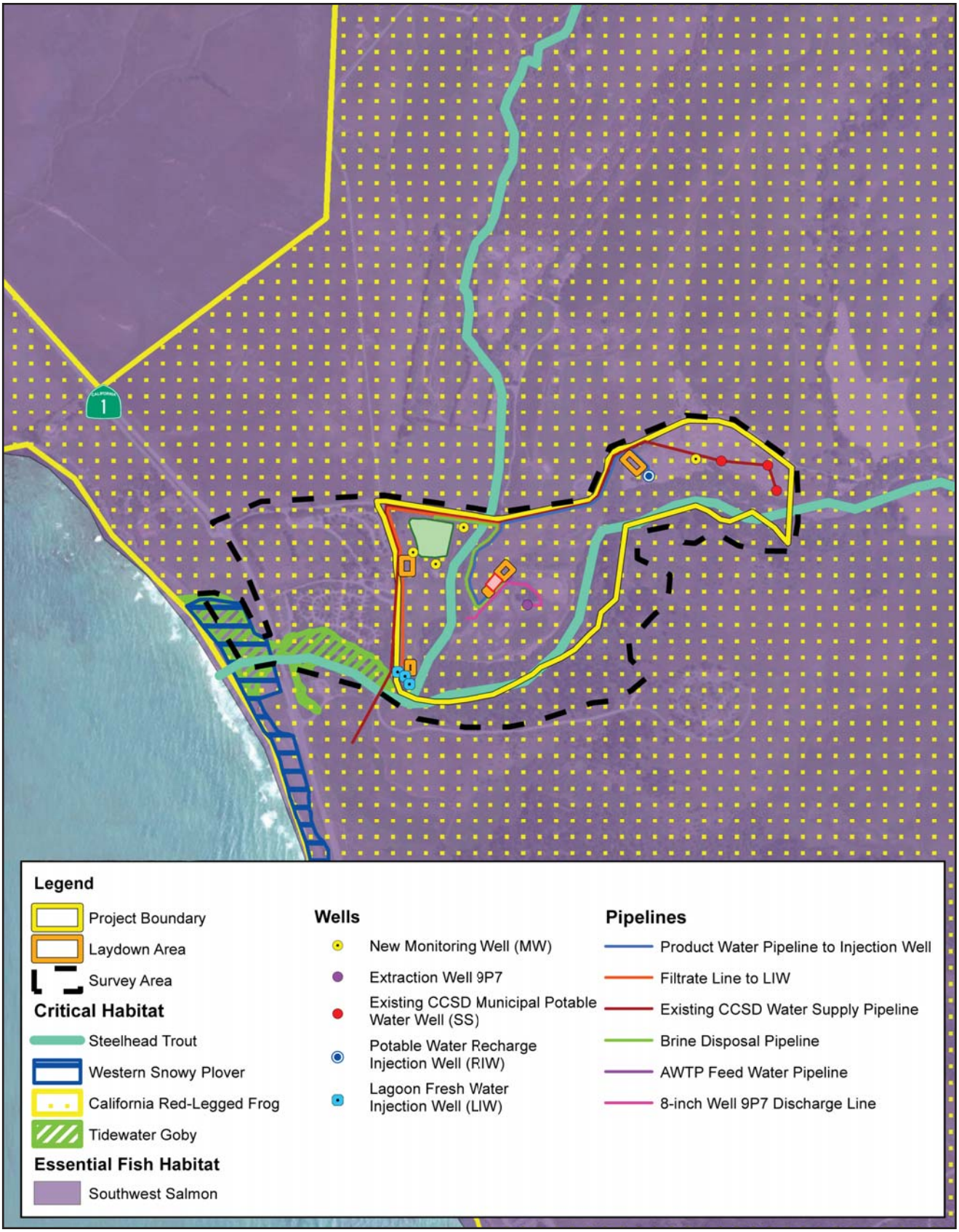
CRLF have been reported in San Simeon Creek and its tributaries, however, no life forms of this species were recorded during the habitat assessment. The entire Project site is located within CRLF Critical Habitat Unit SLO-2; see Exhibit 4.4-3, *Critical Habitat and Essential Fish Habitat*. Observed wetted habitat within San Simeon Creek during the habitat assessment was highly suitable for this species. This species has a high potential to occur and, in the absence of protocol surveys, should be assumed present in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.

Coast Range Newt. The coast range newt is designated by the CDFW as a California species of special concern. It is typically found in rivers, streams, lakes, and ponds, particularly those with rocky substrates. It is never far from water. In most areas this species is terrestrial during most of the year, however, in anticipation of its breeding season (typically December to May) these individuals will migrate back to water and undergo a physiological change into an aquatic form. In areas of permanent water, some individuals may stay in the aquatic phase year-round.

There is suitable habitat for this species in San Simeon Creek, particularly in the upper portions and areas where water may be slow-moving or have distinct and protected pools. This species was not observed during the habitat assessment, however, has a moderate potential to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.

Two-striped Garter Snake. The two-striped garter snake is designated by the CDFW as a California species of special concern. It is primarily an aquatic species and is typically found in or near permanent or semi-permanent water including creeks, pools, stockponds, and other areas. Surrounding vegetation is typically made up of chaparral, forest, woodland, and grassland, and may vary according to the season. This species is primarily active between spring and fall, and in many cases will retreat into a burrow for the winter. Breeding occurs in the spring after the snakes emerge into the active season again.

There is suitable habitat for this species in San Simeon Creek. While it is more likely to be found in the downstream sections where there is more water, it could occur throughout the creek. This species was not observed during the habitat assessment, however, has a moderate potential to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.



Source: USFWS Critical Habitat, NOAA Fisheries, CDM Smith, ESRI World Topographic Map.

NOT TO SCALE

RBF CONSULTING
A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Critical Habitat/Essential Fish Habitat

Exhibit 4.4-3

Avian Species

Based on the results of the habitat assessment, it was determined that the habitat in and around the Project site has a moderate to high potential to provide suitable habitat for two sensitive avian species listed in the CNDDB as having the potential to occur on or within the general vicinity of the Project site.

Ferruginous Hawk. The ferruginous hawk is on the CDFW watch list of sensitive species. This species frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. It nests in foothills or prairies; on low cliffs, buttes, cut banks, shrubs, trees, or in other elevated structures, natural or human-made. This species requires large, open tracts of grasslands, sparse shrub, or desert habitats. Ferruginous hawk could roost or forage within the general Project vicinity, though it is only present in this area during the fall and winter. This species has a moderate potential to occur.

Prairie Falcon. The prairie falcon is on the CDFW watch list of sensitive species. This species is relatively uncommon and is most often found in dry, open habitats including deserts, shrublands, agricultural areas, and especially grasslands. While it will forage in these areas, it nests on cliff ledges. Along the immediate South/Central Coast, such as the Project site, this species is only present as a wintering bird, however, just inland it is a year-round resident.

This species could forage in the Project vicinity, especially in adjacent agricultural and open fields. It may also perch and roost on transmission structures and tall trees in the area. This species has a moderate potential to occur.

Mammalian Species

Based on the results of the habitat assessment, it was determined that the habitat on the Project site has a moderate to high potential to provide suitable habitat for two sensitive mammal species listed in the CNDDB as having the potential to occur on or within the general vicinity of the project site.

Fringed myotis. Fringed myotis occurs in a wide variety of habitats however, is most often found in pinyon-juniper, valley foothill hardwood, and hardwood-coniferous habitats, generally between 4,265 and 7,218 feet in elevation. However, it can also be found down to sea level, and in 2000 multiple individuals of this species were trapped close to shore, including one only 0.25 mile from the San Simeon Creek Lagoon. This species roosts in caves, mines, buildings, and crevices, and may roost in separate areas during the day from at night. Maternity colonies are located in the same types of roosting habitat between late April and September and may contain up to 200 individuals. This species typically hibernates between October and March, and maternity colonies may hibernate together as well.

There is suitable foraging habitat within the Project site and the surrounding vicinity. It is unknown if suitable roosting habitat is present, however, none was observed during the habitat assessment. This species is nocturnal and was not observed during the habitat assessment, however, is expected to have a moderate potential to occur.

Yuma myotis. Yuma myotis occurs in a wide variety of habitats however, is most often found in open forests and woodlands near water for foraging, generally at elevations between sea level and 10,827 feet. In 2000, three Yuma myotis were trapped close to shore only 0.25 mile from the San Simeon Creek Lagoon. This species roosts in caves, mines, buildings, and crevices, and may also use abandoned swallow nests and bridges as roosts. It may roost in separate areas during the day from at night, with night roosts generally being more open. Maternity colonies are located in the same types of roosting habitat and may contain thousands of individuals, though if temperatures exceed 40°C the individuals tend to roost elsewhere where it will be cooler and situate themselves farther apart from each other. This species probably hibernates, though not much information is available on its habits.

There is suitable foraging habitat within the Project site and the surrounding vicinity. It is unknown if suitable roosting habitat is present, however, none was observed during the habitat assessment. This species is nocturnal and was not observed during the habitat assessment, however, is expected to have a moderate potential to occur.

Fish Species

Tidewater Goby. The tidewater goby is federally listed as endangered and is designated by the CDFW as a California species of special concern. It occurs primarily in coastal lagoons and estuaries and has only been captured in marine environments in very few instances. In their habitat, tidewater gobies are generally present in the upper estuary where the freshwater and saltwater mix, and will range upstream into pure freshwater and downstream into areas of majority salt water (up to about 75 percent). Though they can be present in water where salinity ranges up to 28 parts per thousand, they are predominantly found in areas where salinity is less than 12 parts per thousand, i.e., on the upper edges of tidal bays and in coastal lagoons. Tidewater gobies reproduce throughout the year however, peak reproduction occurs in spring and late summer.

There is occupied habitat for this species downstream in San Simeon Creek Lagoon. This species was observed in the San Simeon Creek Lagoon, which is also tidewater goby designated Critical Habitat Unit SLO-5 during the habitat assessment; see Exhibit 4.4-3.

Steelhead (South/Central California Coast DPS). Steelhead is federally listed as threatened and is designated by the CDFW as a California species of special concern. The population in the Project vicinity ranges from Santa Cruz County south to, however, not including, the Santa Maria River. Typical freshwater steelhead habitat consists of gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Dissolved oxygen levels should be at least seven parts per million, and streams should have deep, low-velocity pools for wintering. Juveniles will typically spend between one and three years maturing in a freshwater or estuarine environment before migrating out to sea. After a typical span of one to four years of maturation in the ocean, the fish will return to their natal waters to spawn again.

There is suitable habitat for this species in San Simeon Creek. This species has been historically recorded over many years to occur within the creek, both in the creek and downstream in the lagoon. San Simeon Creek and Van Gordon Creek are part of the steelhead designated Critical Habitat unit that is located within the Estero Bay Hydrologic Unit; see Exhibit 4.4-3). While not observed during the habitat assessment, this species is expected to have a high potential for occurrence and should be assumed to be present in San Simeon Creek and Van Gordon Creek, in the absence of any formal surveys.

Sensitive Habitats

The CNDDB lists two sensitive habitats, Monterey Pine Forest and Valley Oak Woodland, as having the potential to occur within the Cambria, Pebblestone Shut-in, Pico Creek, San Simeon USGS quadrangles. Existing Well 9P7 in the center of the percolation ponds is in a small stand of Monterey pines. However, based on the small size of this stand, it is unlikely to be considered an actual "forest" community, rather an isolated stand. There are scattered Monterey pines present on the hillsides south of San Simeon Creek south of the Project site.

Critical Habitat

As discussed previously, Critical Habitat is designated under the authority of the ESA. However, consultation for impacts to Critical Habitat is only required when a project is issued federal permits (e.g., a U.S. Army Corps of Engineers Section 404 Clean Water Act permit). If a project does not have a federal nexus, Critical Habitat consultations are not required.

Designated Critical Habitat for four species is located in and around the Project site; see Exhibit 4.4-3. CRLF Critical Habitat Unit SLO-2 encompasses the entire Project site. This area includes aquatic habitat that is suitable for both breeding (PCE 1) and non-breeding (PCE 2) habitat, as well as upland habitat that could be used for foraging (PCE 3) and dispersal (PCE 4).

Tidewater goby Critical Habitat Unit SLO-5 includes San Simeon Creek Lagoon and the downstream reach of an eastern tributary immediately north of SR-1. This area includes a persistent, shallow lagoon containing soft substrate suitable for the construction of burrows for reproduction (PCE 1a) and with submerged and emergent aquatic vegetation that provides protection from predators and high flow events (PCE 1b).

South Central California Coast steelhead Critical Habitat is located within the Estero Bay Hydrologic Unit and includes an approximately 5.5-mile stretch of San Simeon Creek beginning downstream of the North Fork/South Fork San Simeon Creek convergence and ending at the ocean.

Snowy plover Critical Habitat Unit CA-26 is located along San Simeon State Beach and encompasses most of San Simeon Creek Lagoon downstream (west) of SR-1. This area includes sandy beach above and below the high-tide line (PCE 1) with occasional surf-cast wrack supporting small invertebrates and generally barren to sparsely vegetated terrain (PCEs 2 and 3). It is an important wintering area where up to 143 snowy plovers have been recorded in a single season (at the time of the Critical Habitat designation in 2012).

Essential Fish Habitat

As discussed previously, EFH is designated under the MSA. The proposed Project is located within designated EFH for Coho salmon; see Exhibit 4.4-3. EFH for various species of groundfish is designated near the proposed Project however, ends at the shoreline. Under the provisions of MSA Section 305(b), if the Project has a federal nexus and will be issued a federal permit, the federal agency will be required to consult with NMFS for impacts to EFH. If no federal agency is involved, this consultation will not be necessary.

IMPACT ANALYSIS

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

Less Than Significant With Mitigation Incorporated. The following discussion provides a summary of survey results; avoidance and minimization efforts; direct, indirect, and cumulative Project impacts; and compensatory mitigation measures for each biological resource area required to be analyzed according to the California Environmental Quality Act (CEQA), based on Appendix G (Environmental Checklist Form) of the CEQA Guidelines.

Species determined to have the potential to occur within the general vicinity are presented in Appendix A of Appendix B.

Listed Plant Species

No federally or State listed plant species occur or have the potential to occur on the Project site or within the riparian habitat associated with San Simeon and Van Gordon Creeks.

Special-Status Plant Species

Survey Results

Three special-status plant species were identified during a CNDDB and CNPS search as potentially occurring in the area: compact cobwebby thistle; Jones' layia; and Monterey pine. Compact cobwebby thistle was identified during surveys in 1991 approximately 0.5 mile northwest of the Project site, and Monterey pine was observed onsite during the habitat assessment. Jones' layia has not been recorded onsite, however, has a low to moderate potential to occur based on availability of suitable habitat.

Avoidance and Minimization Measures

Compact cobwebby thistle and Jones' layia, while not identified during the habitat assessment, can be found in grasslands and scrub habitats on the eastern side of the Project site. This area would have minimal development, with only the installation of the RIW occurring. A Monterey pine stand is present in the center of the percolation ponds, near Well 9P7. The pipeline from Well 9P7 to the AWTP would be sited to avoid this stand.

Direct and Indirect Project Impacts

Direct or indirect impacts could occur to special-status plant species as a result of Project implementation. Excavation and fill for wells and pipelines could result in the loss of sensitive plant species. Construction activity could result in the spread of nonnative weed seeds via clothing, tires, or vehicle undercarriages. In addition, vehicle travel and pedestrian foot traffic within the Project boundaries could result in the trampling of plant species. Mitigation Measures BIO-1 through BIO-5 are proposed to reduce Project impacts to less than significant.

Listed Wildlife Species

Tidewater Goby

Survey Results. Tidewater goby was observed in San Simeon Creek Lagoon during the habitat assessment. It is historically known to be present and to spawn within San Simeon Creek Lagoon; San Simeon Creek Lagoon has also been designated as tidewater goby Critical Habitat Unit SLO-5.

Avoidance and Minimization Efforts. This species occurs in San Simeon Creek Lagoon, however, is unlikely to occur within either San Simeon Creek or Van Gordon Creek, where riffles and even minor turbulence are deterrents. The lagoon would not be directly affected by construction and is located mostly offsite. Only a small section of the lagoon, approximately the uppermost 230 feet, is located within the Project site. BMPs would be implemented to avoid or reduce any sedimentation within the water bodies; see Section 4.9, *Hydrology and Water Quality*.

Direct and Indirect Project Impacts. While direct impacts to special-status wildlife species are expected to be negligible during construction, indirect operational impacts may occur as the result of the Project. The Project proposes to extract 400 gallons per minute (gpm) of groundwater from the San Simeon Creek aquifer (via Well 9P7) upstream of San Simeon Creek Lagoon. The extracted water would be treated at the proposed AWTP and 300 gpm would be reinjected (via RIW) for subsequent distribution to Cambria. To mitigate the extraction of groundwater, the Project proposes to return 100 gpm of treated water to the San Simeon Creek aquifer adjacent to the Lagoon (via LIWs or via existing Well 9P7 discharge pipeline directly into Van Gordon Creek adjacent to the AWTP). If the Project were to result in a water budget deficit, it could result in quicker reduction in stream levels during dry periods. While a perennial section of San Simeon Creek is known to be present upstream of the confluence with Steiner Creek, the lower reaches are intermittent and are generally only inundated from late fall to late spring or early summer. Early reduction in water levels could result in a premature sandbar closure at San Simeon Creek Lagoon. This could reduce the amount of habitat for tidewater goby found in the lagoon habitat. Unexpected habitat

loss could result in decreased food and shelter, resulting in increased competition for resources not just between tidewater gobies, but between gobies and other fish species that may be present in the lagoon. The Project's hydrologic model primarily addresses the potential for Project-related groundwater impacts; see Section 4.9. However, it is unknown what specific connection there is between groundwater and the surface water in San Simeon Creek, San Simeon Lagoon, and the water flowing in from the Pacific Ocean. The modeling suggests that Project effects to the water budget would be limited. However, given the uncertainty that exists regarding the possible effects these actions may have on the supply of surface water in San Simeon Creek and San Simeon Creek Lagoon, monitoring of groundwater and surface water, as well as additional hydrologic modeling, is recommended to track changes in groundwater, surface water, and instream and riparian habitats. The monitoring would be conducted in order to remove remaining uncertainty and fully understand the effects of the changes to the water budget resulting from the Project. An Adaptive Management Program (AMP) (see Mitigation Measure BIO-6) is proposed to gather the needed data and provide an oversight of uncertain effects of removing 300 gpm from the groundwater adjacent to San Simeon Creek. The AMP would allow up to 150 gpm of water to be returned at either the LIWs or the discharge pipe, depending on stream conditions, to avoid potential adverse impacts to aquatic species. In addition to the AMP, Mitigation Measures BIO-1, BIO-2, and BIO-6 are proposed to reduce Project impacts to less than significant. Based on the results of the biological monitoring, the AMP would provide measures to increase or decrease the amount of water injected or discharged back into San Simeon Creek and Lagoon. It is expected that the minimum amount of water returned at any time would be 100 gpm, but that when necessary based on biological monitoring, the amount of continual water would increase to 150 gpm.

Steelhead (South/Central California Coast DPS)

Survey Results. Steelhead trout were not observed during the habitat assessment. This species is known to occur and to spawn in San Simeon Creek, and San Simeon Creek Lagoon is used as habitat for smolts preparing to enter the Pacific Ocean. San Simeon Creek and Van Gordon Creek are part of steelhead designated Critical Habitat in the Estero Bay Hydrologic Unit.

Avoidance and Minimization Efforts. This species occurs in both San Simeon Creek, San Simeon Creek Lagoon, and, if inundated, Van Gordon Creek. These areas would not be directly affected by the Project however, a portion of each is located within the Project site. BMPs would be used as necessary to avoid or reduce any sedimentation within the water bodies.

Direct and Indirect Project Impacts. As described above, direct impacts to aquatic species are expected to be negligible during construction. However, indirect operational impacts could occur, particularly if reductions in the water table result in earlier-than-average seasonal drops in creek surface water. Adult steelhead typically migrate from the ocean into coastal streams between December and May, according to weather patterns and stream flow. On the other hand, smolts typically migrate downstream to lagoons and eventually the ocean between March and June, although low stream flows can block smolts from reaching their destinations. Reduced water in the lower reaches of San Simeon Creek could lead to earlier-than-usual sandbar closures in San Simeon Creek Lagoon, affecting the ability of smolts to migrate to the ocean and prematurely altering the lagoon/estuary temporal interchange. This may result in smolts becoming stranded in San Simeon Creek Lagoon and spending an extra year in the lagoon instead of at sea. Stranded smolts would suffer from increased competition in the lagoon habitat, particularly as upstream areas within San Simeon Creek dry up and leave only an isolated portion of the creek and lagoon. The AMP as described above is proposed to avoid potential adverse impacts to aquatic species, including the steelhead. In addition to the AMP, Mitigation Measures BIO-1, BIO-2, BIO-6, and BIO-7 are proposed to reduce Project impacts to less than significant.

California Red-legged Frog

Survey Results. No CRLF life stages were detected during the habitat assessment. This species is historically known to occur in San Simeon Creek and in addition the entire Project site is included in CRLF designated Critical Habitat Unit SLO-2.

Avoidance and Minimization Efforts. This species occurs in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek. Some upland habitat present in the percolation ponds may be used by this species. All four areas are located within the Project site and would be avoided during construction. BMPs would be used as necessary to avoid or reduce any sedimentation within the water bodies; see Section 4.9.

Direct and Indirect Project Impacts. As described above, direct impacts to aquatic species are expected to be negligible during construction. However, indirect operational impacts could occur, particularly if reductions in the water table result in earlier-than-average seasonal drops in creek surface water. In San Simeon Creek, because CRLF can breed as late as late April, early drops in water levels could possibly affect the ability of CRLF eggs to hatch. CRLF typically attaches its eggs to floating vegetation or vegetation rooted in the creek substrate; drops in the water level could cause egg masses to desiccate. Tadpoles in turn could be lost if the creek dries too quickly, or increased competition for food from fish (such as stranded smolts) could result in tadpoles being subjected to increased predation. The AMP as described above is proposed to avoid potential adverse impacts to aquatic species, including the CRLF. In addition to the AMP, Mitigation Measures BIO-1, BIO-2, BIO-6, BIO-8, BIO-9 are proposed to reduce Project impacts to less than significant.

Special-Status Wildlife Species

Survey Results

Only one non-listed special-status wildlife species was observed during the habitat assessment: yellow warbler (*Setophaga petechia*). In addition, based on a CNDDB search, eight additional species were determined to have a moderate or higher potential to occur within the Project site: ferruginous hawk; western pond turtle; prairie falcon; fringed myotis; Yuma myotis; foothill yellow-legged frog; Coast Range newt; and two-striped garter snake. Western pond turtle and two-striped garter snake are historically known to occur in San Simeon Creek.

Avoidance and Minimization Measures

Of the nine non-listed special-status wildlife species that could occur on the Project site, all would most likely occur in areas that are likely to be directly avoided by the Project. Yellow warbler would forage and nest in the summer in riparian trees; which are expected to be avoided except for possible light trimming. Ferruginous hawk and prairie falcon would be most likely to occur in the winter around grassy fields such as that on the east side of the Project site or in surrounding agricultural fields; grassy fields would be minimally affected. Also, by constructing the Project in the summer, direct construction effects to these two species would be avoided. Fringed myotis and Yuma myotis are most likely to roost in trees during the day and forage over the water or over fields at night; by constructing during the day, foraging would be unlikely to be affected, and by mostly avoiding arboreal habitat, roosting habitat would be mostly unaffected. Finally, western pond turtle, foothill yellow-legged frog, Coast Range newt, and two-striped garter snake would be most likely to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek, or in the generally immediate upland areas. These areas would be avoided by Project construction. If the Project is constructed in the summer, these species would be expected to be mostly tied to the water as well.

Direct and Indirect Impacts

Direct impacts to any of these species are expected to be minimal. Construction near trees may result in disturbance to nesting birds or roosting bats, potentially resulting in increased stress or nest failure. In extreme situations,

excessive disturbance may cause individual animals to leave the area, temporarily or permanently. For aquatic species, changes in seasonal water levels can result in habitat degradation and premature life events (e.g., upland breeding, overwintering, migrations). The AMP as described above is proposed to avoid potential adverse impacts to aquatic species, including the western pond turtle, foothill yellow-legged frog, Coast Range newt, and two-striped garter snake. In addition to the AMP, Mitigation Measures BIO-1, BIO-2, and BIO-10 through BIO-13 are proposed to reduce Project impacts to less than significant.

Overall, the Project would have less than significant adverse effects on plant or wildlife species identified as a candidate, sensitive, or special status species with implementation of the AMP and recommended mitigation measures. Further, as discussed in Response 4.4.e below, the Project is subject to compliance with the LCP Policies and CZLUO standards that address potential impacts to biological resources.

EXISTING REGULATIONS

Refer to the LCP Policies and CZLUO standards specified in Response 4.4.e.

MITIGATION MEASURES

BIO-1 All work areas shall be visibly flagged or staked prior to construction. Construction activities shall be limited to these approved work areas except with prior authorization from regulatory agencies.

BIO-2 A Worker Environmental Awareness Program (WEAP) shall be implemented to educate all construction personnel of the area's environmental concerns and conditions and relevant environmental protection measures. The WEAP shall include environmental concerns and appropriate work practices, including spill prevention, emergency response measures, protection of sensitive resources, and proper implementation of BMPs, to all construction and maintenance personnel. All new workers that arrive after construction has started shall be trained under the WEAP within two days' time.

BIO-3 A qualified biologist or botanist shall conduct a preconstruction clearance survey for special-status plant species within the Project site. If present, any special-status plants shall be clearly flagged for avoidance with a suitable buffer zone during construction. If avoidance is not possible, the Project Applicant shall discuss potential relocation strategies with applicable regulatory agencies.

BIO-4 Prior to construction, all heavy equipment to be left onsite in laydown yards shall be washed offsite with non-potable water and cleaned of all potential non-native weed seeds. Worker trucks shall be washed daily if they will be driven offroad or shall otherwise be left parked in laydown yards or on existing roads during construction.

BIO-5 All excavated material shall be removed from the Project site and disposed of properly or reused elsewhere. If left onsite, the material shall be moved into an area where it shall not wash or erode into any riparian areas and shall be suitably covered or watered to reduce the potential for dust during high winds or rain events.

BIO-6 The Project Applicant shall develop and implement an Adaptive Management Program (AMP) for post construction operations. The AMP shall be incorporated indefinitely until the Project facilities are no longer in use or until deemed no longer necessary by applicable regulatory agencies. The AMP is intended to monitor and protect the lagoon and riparian habitats adjacent to the Project site and, by extension, protect the species that inhabit it. The AMP's primary goal shall be to monitor the response of the lagoon and riparian habitats to the Project's proposed reinjection of 100 gpm of extracted water into the aquifer adjacent to the eastern extent of the lagoon. Based on any noted adverse changes in these habitats, the well operations shall be adjusted so that the amount of treated water that is injected

or discharged back into the system, is either increased or decreased to restore affected habitat features. This may require a combination of any of the following:

- Monthly stream surveys during the period that the Project is actively drawing groundwater (currently expected to be May through October). The surveys shall document the upstream extent of inundation in each water body, as well as water depth at predetermined locations to measure changes in water levels;
- Surveys for tidewater goby, steelhead, CRLF, western pond turtle, and/or two-striped garter snake shall be conducted to measure population levels over time; and
- Riparian vegetation in the water bodies and in their upland extents shall be monitored.

BIO-7 The Project Applicant shall delay the annual period of groundwater pumping to the greatest extent possible, preferably after June, in order to maximize the amount of time for steelhead to migrate up and down San Simeon Creek.

BIO-8 Preconstruction diurnal and nocturnal surveys shall be conducted for California Red-legged Frog (CRLF) in the percolation ponds and surrounding area within 48 hours of the start of construction. Any CRLF detected during surveys shall be relocated to areas outside of the construction zone, i.e. to San Simeon Creek, San Simeon Creek Lagoon, or Van Gordon Creek. Exclusion fencing shall be placed around work areas to avoid or minimize the risk of CRLF migrating into work areas during upland movements. The biologist conducting the surveys and performing any relocations shall hold a valid 10(a)(1)(A) recovery permit and Scientific Collecting Permit allowing take of CRLF.

BIO-9 All Project-related trash, food, or otherwise, shall be disposed of after use in appropriate secured containers. These containers shall be emptied offsite regularly.

BIO-10 No more than one week prior to construction, a qualified biologist shall conduct a preconstruction nesting bird clearance survey in all work areas and all areas within 500 feet of the general construction zone. Active nests shall be given an avoidance buffer, typically 300 feet for non-listed, non-raptor species, and 500 feet for listed or raptor species. This buffer shall remain in place until the young fledge or the nest otherwise becomes inactive, and may be reduced with approval from CDFW and/or USFWS.

BIO-11 If deemed necessary by the CDFW, a preconstruction roosting bat survey shall be conducted within one week prior to construction. Any bat roosts found in the Project vicinity shall be protected with coordination from CDFW.

BIO-12 In areas adjacent to riparian habitat, construction noise shall be minimized to the amount necessary to avoid or reduce the risk of adverse impacts to wildlife.

BIO-13 In areas within 100 feet of riparian habitat, BMPs shall be implemented. These should include, but are not limited to, sedimentation control, erosion control, spill prevention and cleanup, and hazardous materials.

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

4.4.c 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?

Less Than Significant With Mitigation Incorporated.

Survey Results

The Project site contains two intermittent creeks (San Simeon Creek and Van Gordon Creek) and one wetland (San Simeon Creek Lagoon). San Simeon Creek traverses the site's southern portion and continues along its southern boundary, whereas Van Gordon Creek traverses the site's western portion. San Simeon Creek Lagoon begins in San Simeon Creek approximately 230 feet upstream of Van Gordon Creek Road and extends west to San Simeon State Beach, where it seasonally switches between a lagoon and an estuary. Vegetation within these water bodies is dominated by a Central Coast Arroyo Willow Riparian Forest community as described above. A jurisdictional delineation has not yet been conducted to determine specific acreages of potentially jurisdictional areas. However, based on the habitat assessment, it is expected that both Van Gordon and San Simeon Creeks would qualify as Waters of the U.S. and Waters of the State.

Avoidance and Minimization Efforts

The Project components are proposed outside of these jurisdictional areas. No construction is proposed within the streambeds, lagoon, or within the terrestrial extent of the riparian vegetation. Nearby construction would be shielded from riparian vegetation through the implementation of BMPs.

Direct and Indirect Project Impacts

Few if any direct impacts to riparian habitat are expected to occur. Minor tree trimming may be necessary for areas where the Project is sited close to vegetation. However, potentially significant indirect impacts could occur as a result of Project implementation and groundwater loss; refer to Response 4.4.a above and 4.4.d below in regards to effects on wildlife and effects on movement corridors. In addition to these potential effects, implementation and operation of the Project may result in degradation of riparian habitat. Drawdown of the water table could have adverse effects on riparian vegetation, eventually resulting in loss or conversion of vegetation. If this is a seasonal drawdown, it may only result in seasonal impacts, e.g., temporary browning or loss of vitality of vegetation. However, if Project operation results in permanent, gradual, and cumulatively reduced groundwater levels, riparian vegetation may suffer permanent effects.

If the depth of the water table has any direct correlation to the amount and longevity of surface water, reductions in surface water may lead to reduced growth rates and plant mortality, eventually leading to reduced plant cover and reduced plant species diversity as a result of prolonged low flows. This is because during the dry season, the increased ambient temperatures cause increased transpiration in plants, resulting in increased water loss from leaves. Water replenishment is less crucial during the wet season, as temperatures are cooler, transpiration rates are lower, and rainfall adds to the water that is already present in streambeds. In the dry season, however, plants can become stressed more easily during low water conditions. While phreatophytic—vegetation that draws water from both above and below the surface—and more drought-tolerant vegetation like Fremont's cottonwood (*Populus fremontii*), willows (*Salix* sp.), and mulefat (*Baccharis salicifolia*) may persist longer under dryer conditions, shallow-rooted and streamside vegetation would be expected to be more susceptible to general reductions in water levels (Stromberg et al. 2007). Additionally, nutrient-cycling organic litter decomposition that is normally aided by

downstream water movement may be reduced by low surface flows. The AMP as described above is proposed to avoid potential adverse impacts to riparian vegetation and wetlands. In addition to the AMP, Mitigation Measures BIO-1, BIO-6, BIO-14, and BIO-15 are proposed to reduce Project impacts to less than significant.

EXISTING REGULATIONS

Refer to the LCP Policies and CZLUO standards specified in Response 4.4.e.

MITIGATION MEASURES

See Mitigation Measures BIO-1, BIO-6, and BIO-14 above and the following.

BIO-15 The Project Applicant shall consult with the Corps, CDFW, and Regional Board regarding potential impacts and required mitigation once the final Project design is available. If impacts are anticipated to occur to instream and riparian habitats, wetland permits may be required from these agencies.

4.4.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?

Less Than Significant With Mitigation Incorporated.

Survey Results

Although not observed during the habitat assessment, steelhead trout are known to migrate up and down San Simeon Creek. Adult steelhead trouts migrate from the ocean upstream into San Simeon Creek between December and May, and smolts migrate downstream toward the ocean between March and June. Several mule deer (*Odocoileus hemionus*) were observed in the percolation ponds and likely utilize the riparian corridor to make movements up and down the stream between foraging, fawning, and shelter areas, as well as other critical habitat types. Other large mammals may utilize the riparian corridors to move in cover, particularly between habitat near the coast and habitat in the Santa Lucia Mountains. Finally, birds likely use the riparian corridor for movements.

Avoidance and Minimization Efforts

San Simeon Creek and the general riparian zone would be mostly avoided by construction, with any tree trimming and direct disturbance kept to the minimal amount necessary.

Direct and Indirect Project Impacts

Migrating fish species may be deterred from moving through the areas due to active construction. However, movements of terrestrial and avian species are otherwise not expected to be significantly affected. The movement corridors are not expected to be directly affected. However, San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek may experience indirect Project-related effects as a result of the drawdown in the water table. As discussed above, if the depth of the water table has a strong correlation with the amount of surface water available in these water bodies, it may result in early seasonal cuts in aboveground water supplies. This would in turn degrade the quality of the movement corridor and potentially render it unusable by animals that are strictly confined to aquatic movement (e.g., fish). The AMP as described above is proposed to avoid potential adverse impacts to riparian vegetation and wetlands. In addition to the AMP, Mitigation Measures BIO-1, BIO-6, BIO-14, and BIO-15 are proposed to reduce Project impacts to less than significant.

EXISTING REGULATIONS

Refer to the LCP Policies and CZLUO standards specified in Response 4.4.e.

MITIGATION MEASURES

See Mitigation Measures BIO-1, BIO-2, BIO-7, and BIO-14 above.

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

Less Than Significant With Mitigation Incorporated. The *Coastal Zone North Coast Planning Area Rural Combining Designation Map*[1] assigns Combining Designations to North Coast areas containing hazards, sensitive resource areas, environmentally sensitive habitat areas, historic and archaeologically sensitive areas, and public facilities. As shown on the Combining Designation Map (see Exhibit 4.4-4, *Environmentally Sensitive Habitat*), portions of the Project site are assigned the following Combining Designations:

- Sensitive Resource Area (SRA);
- Environmentally Sensitive Habitat, Terrestrial Habitat (ESH-TH); and
- Environmentally Sensitive Habitat, Coastal Creeks (ESH-CC).

Additionally, the Project site (and all of the NC Planning Area) is assigned Local Coastal Program (LCP) Combining Designation.

Coastal Zone Land Use Ordinance Consistency Analysis

The San Luis Obispo County Coastal Zone Land Use Ordinance, Title 23 of the San Luis Obispo County Code, is intended to guide land use and development within the California Coastal Zone established by the California Coastal Act of 1976. It contains a series of permit requirements, design standards, special uses, nonconforming uses, and enforcement provisions. While the CZLUO is only one of four parts of the San Luis Obispo County LCP, the CZLUO incorporates elements of the Framework for Planning, CPP, and NCAP, and serves as the final implementation stage of the LCP, requiring detailed implementation measures and standards for development within the Coastal Zone. The NCAP contains standards for environmentally sensitive habitat (ESH) areas, however, none are relevant to the Project. In addition, the resource protection policies within the CPP (and County LCP) are directly tied to the more detailed provisions within the CZLUO. Therefore, compliance with the LCP's overall environmental goals would be achieved through compliance with the CZLUO. The goal of this section is to describe the Project's state of compliance with the CZLUO's environmental provisions.

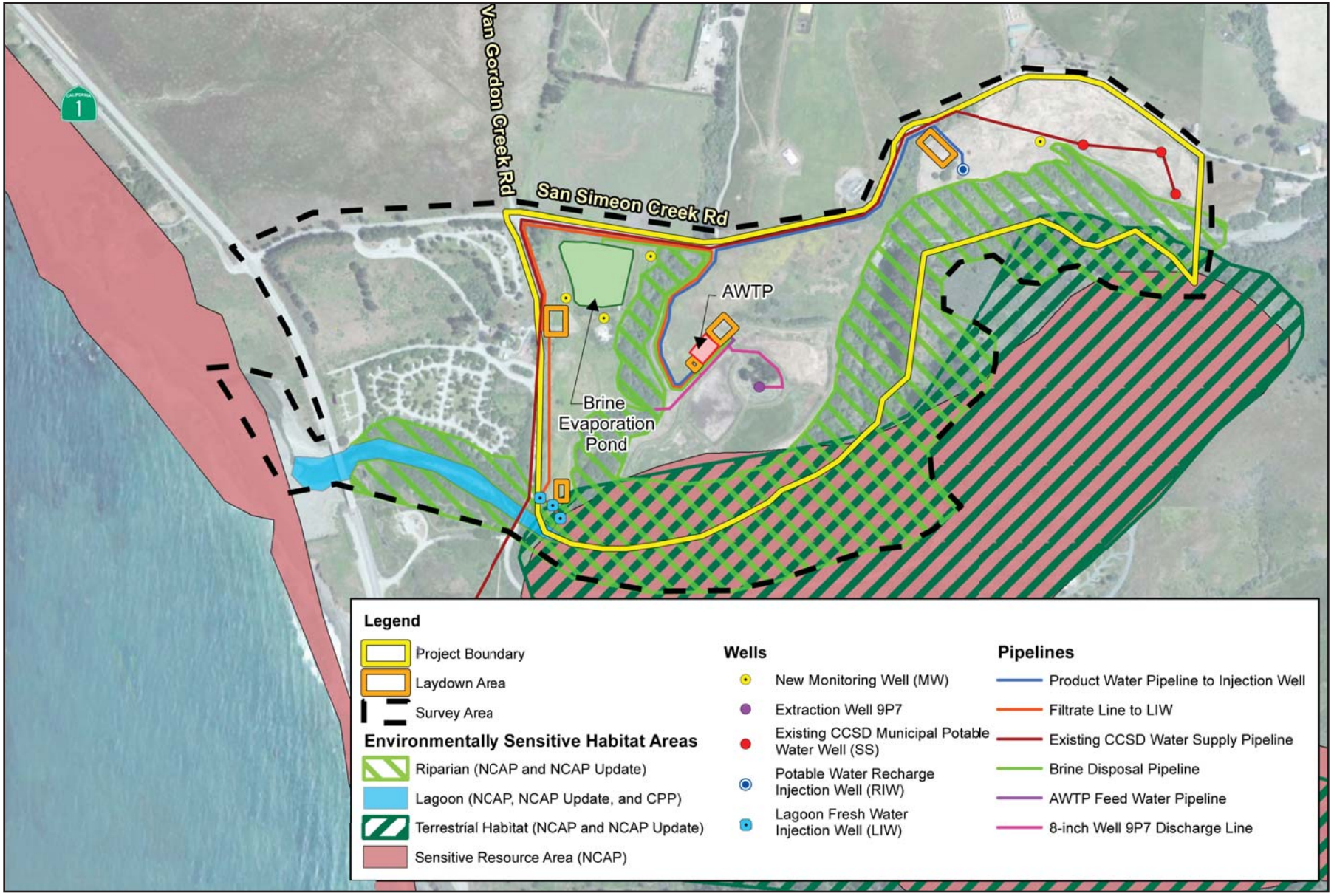
San Luis Obispo County Coastal Zone Land Use Ordinance

Sensitive Resource Areas (CZLUO Sections 23.07.160 to 23.07.166)

These CZLUO sections dictate measures for construction located within SRAs. The survey area contains several designated SRAs (see Exhibit 4.4-4), including the following:

- A stand of Monterey pines located on the south side of San Simeon Creek (ESH-TH);
- North Coast Creeks, including San Simeon Creek (ESH-CC); and
- San Simeon Creek Lagoon ((ESH-CC).

[1] Ibid.



Source: CDM Smith, ESRI World Imagery Basemap.

NOT TO SCALE

RBF CONSULTING A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Environmentally Sensitive Areas

Exhibit 4.4-4

The proposed water facilities are not located within any of these three SRAs. Because CZLUO Sections 23.07.160 to 23.07.166 only pertain to construction within SRAs, the Project would be in compliance with these sections and will not be discussed further.

Environmentally Sensitive Habitat Areas (CZLUO Section 23.07.170)

This CZLUO section dictates measures for construction located within or adjacent to (within 100 feet of the boundary of) ESHAs. The survey area contains several designated ESHAs (Exhibit 4.4-4), including the following:

- North Coast creeks/steelhead streams, including San Simeon Creek (designated by the NCAP);
- General riparian areas (e.g. Van Gordon Creek) (designated by the NCAP); and
- Wetlands (e.g. San Simeon Creek Lagoon) (LCP and NCAP).

The Project is located adjacent to and within 100 feet of both San Simeon Creek and Van Gordon Creek; therefore, Section 23.07.170 would be considered applicable. Only those subsections of Section 23.07.170 that are pertinent to the Project are discussed below.

Steelhead Stream Protection: Net Loss Stream Diversions Prohibited (CZLUO Section 23.07.170e(3))

Subsection 23.07.170e(3) of the CZLUO states that diversions of surface and subsurface water will not be allowed if they will result in a significant adverse impact on steelhead runs. This subsection applies to diversion dams, water supply wells that tap the subflow, and similar water supply facilities that could significantly harm steelhead runs. Exceptions may be considered only where impacts are unavoidable, are fully mitigated, and result in no significant disruption.

The Project proposes to extract 400 gpm of groundwater from the San Simeon Creek aquifer (via Well 9P7) upstream of San Simeon Creek Lagoon. The extracted water would be treated at the proposed AWTP and 300 gpm would be reinjected (via RIW) for subsequent distribution to Cambria.

While enough water may remain in the system with the Project as designed to continue supplying suitable habitat for steelhead runs, it is possible that over time, especially during dry periods, the surface water in San Simeon Creek may dry up quicker than it currently does, possibly resulting in a significant adverse effect to steelhead runs. Adult steelhead typically migrate from the ocean into coastal streams between December and May, according to weather patterns and stream flow. On the other hand, smolts (young steelhead that have prepared to migrate to the ocean) typically migrate downstream to lagoons and eventually the ocean between March and June, although low stream flows can block smolts from reaching their destinations. Reduced water in the lower reaches of San Simeon Creek could lead to earlier-than-usual sandbar closures in San Simeon Creek Lagoon, affecting the ability of smolts to migrate to the ocean and prematurely altering the lagoon/estuary temporal interchange.

To mitigate the extraction of groundwater, the Project proposes to return 100 gpm to the San Simeon Creek aquifer adjacent to the Lagoon (via LIWs or via existing Well 9P7 discharge pipeline directly into Van Gordon Creek adjacent to the AWTP). Therefore, the Project would result in diversions of water. The Project's hydrologic model primarily addresses the potential for Project-related groundwater impacts; see Section 4.9. However, it is unknown what specific connection there is between groundwater and the surface water in San Simeon Creek, San Simeon Lagoon, and the water flowing in from the Pacific Ocean. The modeling suggests that Project effects to the water budget would be limited. However, given the uncertainty that exists regarding the possible effects these actions may have on the supply of surface water in San Simeon Creek and San Simeon Creek Lagoon, monitoring of groundwater and surface water, as well as additional hydrologic modeling, is recommended to track changes in groundwater, surface water, and instream and riparian habitats. The monitoring would be conducted in order to remove remaining uncertainty and fully understand the effects of the proposed changes to the water budget. An AMP is proposed to gather the needed data and provide an oversight of uncertain effects of removing 300 gpm from the groundwater

adjacent to San Simeon Creek. The AMP would allow up to 150 gpm of water to be returned at either the LIWs or the discharge pipe, depending on stream conditions, to avoid potential adverse impacts. In addition to the AMP, Mitigation Measures are proposed to reduce Project impacts to less than significant. Based on the results of the biological monitoring, the AMP would provide measures to increase or decrease the amount of water injected or discharged back into San Simeon Creek and Lagoon. It is expected that the minimum amount of water returned at any time would be 100 gpm, but that when necessary based on biological monitoring, the amount of continual water would increase to 150 gpm.

Adaptive management measures, including biological monitoring, hydrologic monitoring and modeling would be implemented to demonstrate that the Project would be in compliance with this provision and an AMP is recommended to help avoid or reduce impacts to aquatic vertebrates.

Interference with Fish Migration (23.07.170e(4)(iv)

Subsection 23.07.170e(4)iv prohibits any development activity that would raise overall stream temperatures to unfavorable levels, or that would interfere with normal fish migration and movement within the stream. As stated above, the Project may result in decreased water levels in San Simeon Creek and, when applicable, Van Gordon Creek. If Project operations result in decreased water levels regularly, seasonally, or during particularly dry periods, the Project could result in increased water temperatures due to decreased water levels, as well as restrictions on fish migration and movement. The additional hydrologic information that will be gathered as part of the AMP (see BIO-6) is expected to demonstrate that the Project would be in compliance with this provision.

Grading Adjacent to Environmentally Sensitive Habitats (23.07.170e(5))

Subsection 23.07.170e(5) states that grading adjacent to ESHAs shall conform to the provisions of Section 23.05.034c, Grading Standards, which states that:

> *Grading shall not occur within 100 feet of any Environmentally Sensitive Habitat except:*
>
> *c) Where a setback adjustment has been granted as set forth in Sections 23.07.172d(2) (Wetlands) or 23.07.174d(2) (Streams and Riparian Vegetation) of this title; or*
>
> *d) Within an urban service line when grading is necessary to locate a principally permitted use and where the approval body can find that the application of the 100-foot setback would render the site physically unsuitable for a principally permitted use. In such cases, the 100-foot setback shall only be reduced to a point where the principally-permitted use, as modified as much as practical from a design standpoint, can be located on the site. In no case shall grading occur closer than 50 feet from the Environmentally Sensitive Habitat or as allowed by planning area standard, whichever is greater.*

Based on current Project plans, there may be multiple proposed laydown yards that are within 100 feet of Van Gordon Creek and San Simeon Creek. If no grading is required within 100 feet of Van Gordon Creek or San Simeon Creek, the Project would be in compliance with this subsection. If grading is required, compliance with this subsection would be dependent on receiving authorization to grade within the 100-foot riparian buffer, as discussed below. Measures would be implemented through the County's development review process to ensure that the Project complies with this subsection.

Wetlands (CZLUO Section 23.07.172)

This section dictates measures for construction within or adjacent to (within 100 feet of the upland extent of) wetland areas. According to the NCAP, San Simeon Creek Lagoon is considered a wetland and an ESHA (see Exhibit 4.4-

4). Based on the habitat assessment, San Simeon Creek Lagoon is believed to extend to an area approximately 100 feet upstream (east) of Van Gordon Creek Road and approximately 230 feet downstream (west) of the confluence of San Simeon Creek and Van Gordon Creek, where the sides of the creek narrow slightly due to natural rock formations. Based on this extent, the Project would be located within 100 feet of the upland extent of the vegetation surrounding the lagoon in a previously disturbed ruderal area alongside Van Gordon Creek Road that is currently associated with an existing distribution alignment. Only those subsections of CZLUO Section 23.07.172 that are pertinent to the Project are discussed.

Location of Development (CZLUO Section 07.172a) and Wetland Setbacks (CZLUO Section 23.07.172d)

CZLUO Section 23.07.172a requires that development be placed as far away from the wetland as feasible, provided that other habitat values on the project site are not more adversely affected by moving it. CZLUO Section 23.07.172d requires a minimum setback of 100 feet from the upland extent of all wetlands. However, Subsection 07.172d(1) also allows certain permitted uses within this setback, including pipelines, given that the following findings can first be made:

- Alternative routes are infeasible or more environmentally damaging; and
- Adverse environmental effects are mitigated to the maximum extent feasible.

The Project proposes a pipeline, an injection well, and a laydown yard within 100 feet of a wetland. However, according to Subsection 07.172d(2), the minimum wetland setback can "in no case" be less than 25 feet. The proposed LIWs and pipeline must be located in proximity to the lagoon, in order to maintain water in the lagoon. Increasing the distance between the LIWs and the lagoon would be contrary to the Project's objective to maintain water in the lagoon. Therefore, alternative locations/routes would be infeasible. As concluded above, the Project's adverse environmental effects are mitigated to less than significant (to the maximum extent feasible). Compliance with this section would be verified through the County's development review process.

Riparian Setbacks (23.07.174d)

Subsection 23.07.174(d) discusses a required setback from riparian vegetation. In rural areas, such as where the Project is located, this setback is required to be a minimum of 100 feet from the upland edge of riparian vegetation. However, this subsection also allows certain permitted uses within this setback, including pipelines, and for the minimum setback to be adjusted, given that the following findings can first be made:

- Alternative locations and routes are infeasible or more environmentally damaging; and
- Adverse environmental effects are mitigated to the maximum extent feasible; and
- The adjustment is necessary to allow a principal permitted use of the property and redesign of the proposed development would not allow the use with the standard setbacks; and
- The adjustment is the minimum that would allow for the establishment of a principal permitted use.

The Project proposes laydown yards, sections of pipeline, LIWs, and MW-3 within 100 feet of the upland extents of Van Gordon Creek and San Simeon Creek. As concluded above, alternative locations/routes would be infeasible. Additionally, the Project's adverse environmental effects are mitigated to less than significant (to the maximum extent feasible). Compliance with this section would be verified through the County's development review process.

California Coastal Act of 1976

San Simeon Creek

San Simeon Creek traverses the southern portion of the Project site. San Simeon Creek is designated as an ESHA by the NCAP, the 1998 NCAP Update, and by the definition in Section 30107.5 of the Coastal Act; refer to Exhibit

4.4-4). Several protected species are known to occur and/or breed in this creek, including at the minimum steelhead, tidewater goby, California red-legged frog, western pond turtle, and two-striped garter snake. The Project would not be sited within San Simeon Creek, however, would be located near to it and in some areas within 100 feet of it. Development in the vicinity of this resource must demonstrate compliance with Sections 30231 and 30240 of the Coastal Act as noted above.

Section 30231

Under this section of the Coastal Act, the Project proponent must demonstrate that the Project would retain the biological productivity and quality of coastal streams (i.e. San Simeon Creek) and, where possible, restore them to better conditions. The Project is not located within the creek or within its upland terrestrial extent and is not expected to result in any direct impacts as a result of construction. However, the Project could result in indirect impacts to San Simeon Creek.

One of the methods suggested by Section 30231 for maintaining the biological integrity of water bodies is "preventing [the] depletion of ground water supplies and substantial interference with surface waterflow."

The Project proposes to extract 400 gpm of groundwater from the San Simeon Creek aquifer (via Well 9P7) upstream of San Simeon Creek Lagoon. The extracted water would be treated at the proposed AWTP and 300 gpm would be reinjected (via RIW) for subsequent distribution to Cambria. To mitigate the extraction of groundwater, the Project proposes to return 100 gpm to the San Simeon Creek aquifer adjacent to the Lagoon (via LIWs or via existing Well 9P7 discharge pipeline directly into Van Gordon Creek adjacent to the AWTP). Therefore, the Project would affect ground water supplies. As discussed above, an AMP is proposed to gather the needed data and provide an oversight of uncertain effects of removing 300 gpm from the groundwater adjacent to San Simeon Creek. The AMP would allow up to 150 gpm of water to be returned at either the LIWs or the discharge pipe, depending on stream conditions, to avoid potential adverse impacts. In addition to the AMP, Mitigation Measures are proposed to reduce Project impacts to less than significant. Based on the results of the biological monitoring, the AMP would provide measures to increase or decrease the amount of water injected or discharged back into San Simeon Creek and Lagoon. It is expected that the minimum amount of water returned at any time would be 100 gpm, but that when necessary based on biological monitoring, the amount of continual water would increase to 150 gpm. The AMP would be developed and mitigation incorporated to ensure that the Project would either be in compliance or adjusted to become compliant with Section 20231 for San Simeon Creek.

Section 30240

Because the Project is not located within San Simeon Creek, Section 30240a does not apply. However, under 30240b, the Project proponent must demonstrate that the Project would be sited and designed to prevent significant impacts to the creek and would be compatible with the continuance of the habitat. The Project is located within 100 feet of the upland extent of the riparian vegetation, and is currently designed to avoid direct impacts to the vegetation and the streambed. Construction may result in sedimentation, however, it is assumed that standard mitigation (e.g., BMPs) would reduce or eliminate the potential for sedimentation to enter the streambed; see Section 4.9. Based on the locations of the proposed pipeline and injection wells in relation to San Simeon Creek, it is not expected that removal of any riparian vegetation would be necessary during construction of the Project. Light tree trimming may be necessary in the immediate construction area to help facilitate construction of the pipeline, however, this would be mitigated through vegetation replacement or re-vegetation if considered a loss. The proposed lagoon injection wells where treated water would be injected back into the creek and the lagoon would result in additional ground impacts. It is not expected that the Project would have any direct significant impacts to the creek. As discussed above for Section 30231, it is possible that the Project may have indirect adverse impacts to the creek through depletion of groundwater. However, as discussed above, an AMP is proposed to gather the needed data and provide an oversight of the Project's effects. In addition to the AMP, Mitigation Measures are proposed to reduce Project impacts to less than significant. Based on the results of the biological monitoring, the AMP would provide measures

to increase or decrease the amount of water injected or discharged back into San Simeon Creek and Lagoon. The Project would not be located within the resource and would not result in the destruction or adverse modification of it. However, the Coastal Commission generally requires a habitat setback to prevent impacts that could degrade the resources; this setback, as with the CZLUO, is generally 100 feet. The LIW alternative does not comply with this, since it is located within 100 feet of the upland extent of this ESHA. The proposed LIWs and pipeline must be located in proximity to the lagoon, in order to maintain water in the lagoon. Increasing the distance between the LIWs and the lagoon would be contrary to the Project's objective to maintain water in the lagoon. Therefore, alternative locations/routes would be infeasible. The Project would be required to demonstrate compliance through the County's development review process.

San Simeon Creek Lagoon

San Simeon Creek Lagoon is located on the downstream end of San Simeon Creek. San Simeon Creek Lagoon is described as a stillwater wetland by the 1998 NCAP Update and is subsequently designated in the same document as an ESHA; refer to Exhibit 4.4-4. San Simeon Creek Lagoon is believed to extend to an area approximately 230 feet upstream (east) of Van Gordon Creek Road and approximately 100 feet downstream (west) of the confluence of San Simeon Creek and Van Gordon Creek, where the sides of the creek narrow slightly due to natural rock formations. Depending on the time of year and the water level in relation to the sandbar, the area may variably be a freshwater lagoon or a fresh/saltwater estuary. This area is used for spawning and/or rearing habitat by multiple species of fish, most significantly steelhead and tidewater goby. The Project would not be sited within San Simeon Creek Lagoon, however, would be located near to it. The proposed LIWs and pipeline must be located in proximity to the lagoon, in order to maintain water in the lagoon. Increasing the distance between the LIWs and the lagoon would be contrary to the Project's objective to maintain water in the lagoon. Therefore, alternative locations/routes would be infeasible. Development in the vicinity of this resource must demonstrate compliance with Sections 30231 and 30240 of the Coastal Act.

Section 30231

Under this section of the Coastal Act, the Project proponent must demonstrate that the Project will retain the biological productivity and quality of wetlands and estuaries (i.e. San Simeon Creek Lagoon) and, where possible, restore them to better conditions. The Project is not located within the creek or within its upland terrestrial extent and is not expected to result in any direct impacts as a result of construction. However, the Project could result in indirect impacts to the lagoon.

The Project could result in a net deficit of groundwater resources, however, that is currently unknown with available hydrologic data. During dry periods, especially during poor rainfall years, this could result in a premature reduction in both groundwater levels and the extent of the lagoon. During particularly wet years a potential reduction in average groundwater levels may be less significant, as during wet years the lagoon may extend over much of San Simeon State Beach. In dry years, such as 2014, the lagoon may be significantly reduced in size; during the habitat assessment, the extent of the lagoon on the beach was only a fraction of what is displayed in available historical imagery since 1994. In situations like this, a premature reduction in water levels and subsequent closure of the sandbar could result in decreased habitat quality for those species that depend on the lagoon. For instance, steelhead smolts attempting to migrate to sea could become stranded in the lagoon if water levels recede too soon. More information on the connection between groundwater, the surface water in San Simeon Creek and San Simeon Creek Lagoon, and the Pacific Ocean is required. As discussed above, an AMP is proposed to gather the needed data and provide an oversight of the Project's effects. In addition to the AMP, Mitigation Measures are proposed to reduce Project impacts to less than significant. Based on the results of the biological monitoring, the AMP would provide measures to increase or decrease the amount of water injected or discharged back into San Simeon Creek and Lagoon. Implementation of the AMP is proposed to ensure that the Project would either be in compliance or adjusted to become compliant.

Section 30240

Because the Project is not located within San Simeon Creek Lagoon, Section 30240a will not apply. However, under 30240b, the Project proponent must demonstrate that the Project will be sited and designed to prevent significant impacts to the lagoon and will be compatible with the continuance of the habitat. The LIW alternative of the Project is located within 100 feet of the upland extent of the riparian vegetation, and is currently designed to avoid direct impacts to the vegetation and the streambed. This does not include any lagoon-related vegetation (e.g., emergent vegetation) however, is instead a willow forest related to the general riparian corridor. Construction may result in sedimentation, however, it is assumed that standard mitigation (e.g., BMPs) would reduce or eliminate the potential for sedimentation to enter the lagoon. Based on the locations of the proposed pipeline and injection wells in relation to San Simeon Creek Lagoon, it is not expected that removal of any riparian vegetation would be necessary during construction of the Project. Light tree trimming may be necessary in the immediate construction area to help facilitate construction of the pipeline, however, this would be mitigated through vegetation replacement or re-vegetation if considered a loss. The proposed LIWs would result in additional ground impacts.

It is not expected that the Project would have any direct significant impacts to the lagoon. As discussed above for Section 30231, it is possible that the Project may have indirect adverse impacts to the lagoon through depletion of groundwater. However, more information on the connection between groundwater, the surface water in San Simeon Creek and San Simeon Creek Lagoon, and the Pacific Ocean is required. As discussed above, an AMP is proposed to gather the needed data and provide an oversight of the Project's effects. In addition to the AMP, Mitigation Measures are proposed to reduce Project impacts to less than significant. Based on the results of the biological monitoring, the AMP would provide measures to increase or decrease the amount of water injected or discharged back into San Simeon Creek and Lagoon. The AMP is proposed to ensure that the Project would be compatible with the continuance of this habitat. The Project would not be located within the resource and would not result in the destruction or direct adverse modification of it. The Coastal Commission generally requires a habitat setback to prevent impacts that could degrade the resources; this setback, as with the CZLUO, is generally 100 feet. The Project as designed would comply with this, as it is not located within 100 feet of the lagoon. Implementation of the AMP is proposed to ensure that the Project would either be in compliance or adjusted to become compliant with Section 30240b for San Simeon Creek Lagoon.

Van Gordon Creek

Van Gordon Creek traverses the western portion of the Project site, separating the percolation ponds from the brine evaporation pond and the LIW. Van Gordon Creek is designated as an ESHA by the 1998 NCAP Update ("Other Riparian"), and is designated as an ESHA ("Blueline Creeks & Streams") on the San Luis Obispo County "Coastal Zone Environmentally Sensitive Habitats" map available from the County website; refer to Exhibit 4.4-4. This creek is a tributary to San Simeon Creek, converging with it just upstream of the start of San Simeon Creek Lagoon. One alternative of the Project would be sited within Van Gordon Creek for water discharge, whereas the LIW alternative would restrict construction to within 100 feet of Van Gordon Creek however, not directly in the creek. Development in the vicinity of this resource must demonstrate compliance with Sections 30231 and 30240 of the Coastal Act.

Section 30231

Under this section of the Coastal Act, the Project proponent must demonstrate that the Project will retain the biological productivity and quality of coastal streams (i.e. Van Gordon Creek) and, where possible, restore them to better conditions. The Project is not located within the creek or within its upland terrestrial extent and is not expected to result in any direct impacts as a result of construction. However, the Project could result in indirect impacts to Van Gordon Creek.

One of the methods suggested by Section 30231 for maintaining the biological integrity of water bodies is "preventing [the] depletion of ground water supplies and substantial interference with surface waterflow." The Project proposes to extract 400 gpm of groundwater from the San Simeon Creek aquifer (via Well 9P7) upstream of San Simeon Creek Lagoon. The extracted water would be treated at the proposed AWTP and 300 gpm would be reinjected (via RIW) for subsequent distribution to Cambria. To mitigate the extraction of groundwater, the Project proposes to return 100 gpm to the San Simeon Creek aquifer adjacent to the Lagoon (via LIWs or via existing Well 9P7 discharge pipeline directly into Van Gordon Creek adjacent to the AWTP). Therefore, the Project would affect ground water supplies. More information on the connection between groundwater, the surface water in San Simeon Creek and San Simeon Creek Lagoon, and the Pacific Ocean is required. As discussed above, an AMP is proposed to gather the needed data and provide an oversight of the Project's effects. In addition to the AMP, Mitigation Measures are proposed to reduce Project impacts to less than significant. Based on the results of the biological monitoring, the AMP would provide measures to increase or decrease the amount of water injected or discharged back into San Simeon Creek and Lagoon. The AMP would retain or improve upon the biological productivity and quality of this creek. Alternatively, discharging water directly into Van Gordon Creek may help to improve the biological productivity. Implementation of the AMP is proposed to ensure that the Project would either be in compliance or adjusted to become compliant with Section 20231 for Van Gordon Creek.

Section 30240

One alternative would be located within Van Gordon Creek for water discharge, and therefore Section 30240a would apply to this alternative. Under Section 30240a, ESHAs must be protected against disruption of habitat values, and only uses dependent on the ESHAs are allowed within them. Under the discharge pipeline alternative, an existing pipeline would be located within the creek. This pipeline, although it is already permitted for discharges, is not dependent on Van Gordon Creek. However, construction and operation of the pipeline presumably would have already been authorized under the Coastal Act prior to being permitted, and therefore the discharge pipeline alternative is presumed to be in compliance with Section 30240a.

Under Section 30240b, the Project proponent must demonstrate that the Project will be sited and designed to prevent significant impacts to the creek and will be compatible with the continuance of the habitat. Both alternatives are located within 100 feet of the upland extent of the riparian vegetation, and are currently designed to avoid direct impacts to the vegetation and the streambed. Although the discharge pipeline alternative is directly within the streambed, the pipeline is already constructed and intermittently in use, and therefore would not require any additional construction. Upland construction of either alternative may result in sedimentation, however, it is assumed that standard mitigation (e.g., BMPs) would reduce or eliminate the potential for sedimentation to enter the streambed. Based on the locations of the proposed pipeline and injection wells in relation to Van Gordon Creek, it is not expected that removal of any riparian vegetation would be necessary during construction of the Project. Light tree trimming may be necessary in the immediate construction area to help facilitate construction of the new pipelines, however, this would likely be mitigated through vegetation replacement or re-vegetation if considered a loss. Under the LIW alternative, construction of the proposed lagoon injection wells would result in additional ground impacts. The brine evaporation pond is proposed in proximity to Van Gordon Creek, however, would be located with an existing basin that is below the creek; use of the pond is not expected to directly affect the creek.

It is not expected that the Project would have any direct significant impacts to the creek. As discussed above for Section 30231, it is possible that the Project may have indirect adverse impacts to the creek through depletion of groundwater. More information on the connection between groundwater, the surface water in San Simeon Creek and San Simeon Creek Lagoon, and the Pacific Ocean is required. As discussed above, an AMP is proposed to gather the needed data and provide an oversight of the Project's effects. In addition to the AMP, Mitigation Measures are proposed to reduce Project impacts to less than significant. Based on the results of the biological monitoring, the AMP would provide measures to increase or decrease the amount of water injected or discharged back into San Simeon Creek and Lagoon. The Project would not result in the destruction or direct adverse modification of it. However, the Coastal Commission generally requires a habitat setback to prevent impacts that could degrade the

resources; this setback, as with the CZLUO, is generally 100 feet. Several pipeline features and a monitoring well are located within 100 feet of the upland extent of this ESHA. The Project would be required to demonstrate compliance with Section 30240b for Van Gordon Creek through the County review process.

Monterey Pine Forests

A Monterey pine forest is located offsite on the southern end of the survey area, on the southern slopes of San Simeon Creek. This area is designated as an ESHA ("Terrestrial Habitat") on the San Luis Obispo County "Coastal Zone Environmentally Sensitive Habitats" map available from the County website; refer to Exhibit 4.4-4. Monterey pine is designated by the CNPS with the Rare Plant Rank 1B.1, indicating that is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California. Furthermore, "Monterey Pine Forest" is considered a sensitive habitat by the CNDDB. However, the Project is not expected to have any direct or indirect impacts on the formally-mapped Monterey pine forest ESHA located on the south side of San Simeon Creek. The trees are all located in the upland on slopes and bluffs above the creek and are not expected to be affected by construction and operation of the Project. The Project is expected to be in compliance with Section 30240 of the Coastal Act in protecting this ESHA.

However, a small stand of Monterey pines is located within the percolation ponds, and Well 9P7 is located within however, near the southern end of this stand. This is not a mapped ESHA. However, for purposes of this analysis, this area is treated below as if it is an unmapped ESHA.

Section 30240

The Project is located both within and adjacent to this small stand of Monterey pines and is thus subject to both Sections 30240a and 30240b. To show compliance with Section 30240a, the Project proponent must demonstrate that the Project will not disrupt the habitat values of these trees and that it is dependent on this resource. While the existing Well 9P7 is located within the stand of trees, it is located near the southern end of them. The Project as designed shows the pipeline exiting the trees to the west and circumventing them to reach the AWTP. The pipeline is not proposed to be constructed through the stand of trees.

To show compliance with Section 30240b, the Project proponent must demonstrate that the Project is designed to prevent effects that may significantly degrade the habitat, and is compatible with the continuance of the habitat. As stated above, the pipeline has been sited to exit and go around the pine stand, rather than through it. While siting the pipeline through the trees could have significant adverse effects and result in degradation of the habitat, siting the pipeline around the stand avoids major direct impacts and is expected to avoid any major habitat degradation. Because the pipeline would have minimal direct effects and would not cause any significant degradation of this habitat, it can be considered to be compatible with the continuance of the habitat.

EXISTING REGULATIONS

Refer to Response Nos. 4.4.a., 4.4.b., and 4.4.d above.

MITIGATION MEASURES

Refer to Response Nos. 4.4.a., 4.4.b., and 4.4.d above.

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

No Impact. The Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. There are

currently no Habitat Conservation Plans that pertain to the Project site. The Project site is located outside of the nearby Hearst Ranch Conservation Plan. Therefore, the Project would not conflict with the provisions of any local, regional, or state Habitat Conservation Plans.

EXISTING REGULATIONS

Refer to Response Nos. 4.4.a., 4.4.b., and 4.4.d above.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

4.5 CULTURAL RESOURCES

The cultural resources analysis presented below is based on information presented in the Cultural Resources Assessment for the Cambria Emergency Water Project (CRA) (Cogstone, June 2014); refer to Appendix C, *Cultural Resources Assessment*. The purpose of the CRA was to determine the Project's potential effects on paleontological, archaeological, and historic resources. The Regulatory Environment, Background, Geological Setting, Stratigraphy, Natural Setting, Prehistoric Setting, Native Americans at Contact and Historic Setting discussions are found in *Appendix C*, pages 5 to 15.

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 as defined in CEQA Guidelines §15064.5?		✓		
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?		✓		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		
d. Disturb any human remains, including those interred outside of formal cemeteries?			✓	

EXISTING CONDITIONS

Archaeological and Historical Records Search

California Historic Resources Inventory System

A search for archaeological and historical records was completed by Cogstone at the Central Coast Information Center (CCIC) of the California Historic Resources Inventory System (CHRIS) on April 28, 2014. The records search covered the entire Project site plus a 0.5-mile radius.

Table 4.5-1, *Previous Studies Within a 0.5-Mile Radius of the Project*, lists the previous studies within a 0.5-mile radius of the Project site. As indicated in Table 4.5-1, eight cultural resource studies were previously conducted that included parts of the Project site/were within a 0.5-mile radius of the site.

Table 4.5-2, *Archaeological and Historic Resources Within a 0.5-Mile Radius of the Project*, lists the archaeological and historic resources within a 0.5-mile radius of the Project site identified through the records search. As indicated in Table 4.5-2, the results of previously conducted studies indicate there are five cultural resources within the Project site: three prehistoric sites; and two multi-component sites. As also indicated in Table 4.5-2, the results of previously conducted studies indicate 15 cultural resources have been previously documented outside of the Project site, within a 0.5-mile radius: ten prehistoric sites; two historic sites; two multi-components sites; and one historic built environment resource.

Table 4.5-1
Previous Studies Within a 0.5-Mile Radius of the Project

Author	Doc No. (E-)	Title	Date	Quad	Distance from Project
Hoover, R.	45	Archaeological Component for the Cambria Wastewater and Sewage Disposal Project Environmental Impact Report	1974	Cambria	Within Project site
Greenwood, R.	76	Culture Resource Management Study for the Hearst Ranch	1976	Pico Creek, Cambria	Within Project site
Gibson, R.	171	Archaeological investigations at SLO-187B; A Mitigation for Cambria Water Transmission Facilities at San Simeon Creek/Van Gordon Road, San Luis Obispo County, CA	1979	Cambria	Within Project site
Gibson, R.	732	Archaeological investigations at SLO-187B, a mitigation project for Cambria water transmission facilities at San Simeon Creek/Can Gordon Road, San Luis Obispo County	1983	Cambria	Within Project site
Gibson, R.	2183	Results of the Archaeological Subsurface Testing at SLO-221 and SLO-1373, San Simeon Creek, San Luis Obispo County	1992	Cambria	Within Project site
Breschini, G.	2305	Impact Assessment of Expanded Waste Water Facilities Adjacent to San Simeon Creek, San Luis Obispo County, CA. Subsurface Testing: Cambria Community Services District Waste Water Treatment Facility	1991	Cambria	Within Project site
Gibson, R.	3722	Archaeological Resources Inventory for the Cambria Community Services District Effluent Disposal Field Improvements, San Simeon Creek, San Luis Obispo County, California	1994	Cambria	Within Project site
Jones, D. et al.	4753	San Simeon State Park Archaeological Site Assessment:2001	2002	Pico Creek, Cambria	Within Project site

Table 4.5-2
Archaeological and Historic Resources Within A 0.5-Mile Radius of the Project

Trinomial (CA-SLO-)	Primary No. (P-40-)	Description	Quad	Distance from Project
72	72	Prehistoric shallow midden with sparse shell, temporary camp area	Pico Creek, Cambria	Within 0.5 Mile
185	185	Prehistoric bedrock mortars and small midden deposit	Cambria	Within 0.5 Mile
186	186	Prehistoric midden deposit (village site)	Cambria	Within 0.5 Mile
187	187	Prehistoric open village site as indicated by midden deposit	Cambria	Onsite
188	188	Prehistoric bedrock mortar on outcrop of hard metamorphic rock	Cambria	Within 0.5 Mile
221	221	Multi-component agricultural area showing surface indications of roofing tile fragments, and many lithic artifacts (Mission San Miguel Estancia?)	Cambria	Onsite
229	229	Prehistoric large occupation site	Pico Creek, Cambria	Within 0.5 Mile
378	378	Prehistoric large permanent camp Site	Cambria	Onsite
383	383	Prehistoric sparse lithic scatter	Pico Creek, Cambria	Within 0.5 Mile
799	799	Prehistoric bedrock mortar	Cambria	Within 0.5 Mile
800	800	Multi-components foundation with historic and prehistoric artifact scatters	Cambria	Within 0.5 Mile
966	966	Historic cabin foundation and associated retaining walls	Cambria	Within 0.5 Mile
967H	967	Historic foundation, trail markers and historic scatter (Whitaker Ranch complex)	Cambria	Within 0.5 Mile
1373	1373	Multi-components extensive midden deposit with shellfish remains, lithics, groundstone and bone. Proto- Historic adobe and Historic scatters	Cambria	Onsite
1374	1374	Prehistoric bedrock mortars and shell fragments	Cambria	Onsite
1551	1551	Multi-component sparse historic and prehistoric scatter of shell, glass, porcelain, brick and few lithics	Cambria	Within 0.5 Mile
1554	15534	Prehistoric sparse lithic scatter	Cambria	Within 0.5 Mile
2197	2197	Prehistoric lithic and groundstone scatter including one steatite pendant	Cambria	Within 0.5 Mile
ISO-36	38036	Prehistoric unifacially worked cobble, core tool	Cambria	Within 0.5 Mile
	40842	Historic steel bridge	Cambria	Within 0.5 Mile

Paleontological Resources Record Search

A search for paleontological records was performed on behalf of Cogstone by the University of California Museum of Paleontology (UCMP). Cogstone staff conducted additional searches in the Paleobiology Database (PBDB) and literature. No fossils are recorded within or in the immediate vicinity of the Project site (UCMP 2014). However, fossils have been recovered from similar sediments in other areas of the County. While the majority of the Franciscan Assemblage is unfossiliferous, it has produced rare, scientifically significant fossils.

Native American Consultation

A Sacred Lands File search was requested from the Native American Heritage Commission (NAHC) on April 24, 2014. On April 29th, the NAHC replied that there are no known sacred lands within 0.5 mile of the Project site, and provided a list of seven Native American tribes or individuals to contact for further information regarding the general Project vicinity (see Appendix B of Appendix C). Ms. Patti Dunton, of the Salinan Tribe of Monterey and San Luis Obispo County, responded on May 13, 2014, stating that the Tribe has concerns that the Project has the potential to impact known cultural resources within the Project site around San Simeon Creek. Ms. Dunton requested that a monitor be present during any ground disturbance activities; see Appendix B of Appendix C. No additional responses have been received.

Survey Methods

The reconnaissance stage is important to verify the exact location of each cultural resource, the condition or integrity of the resource, and the proximity of the resource to areas of sensitivity. Cogstone completed an intensive-level pedestrian survey of the Project site on May 9, 2014. The survey consisted of walking the Project site in parallel transects spaced at approximately 15-meter intervals, while closely inspecting the ground surface.

Archaeological and Historical Survey Results

Ground surface visibility was nonexistent to poor in portions of the Project site due to dense vegetation (see CRA Figure 6). Locating previously recorded sites within these areas was impossible. In areas with fair ground surface visibility, cultural materials were observed at the surface at archaeological sites CA-SLO-187, CA-SLO-221, CA-SLO-378, and CA-SLO-1373.

Ground surface visibility at CA-SLO-187 was poor due to extremely dense vegetation. A small number of flakes were observed at the surface. Previous site records describe the site as a prehistoric open village site as indicated by midden deposit.

Ground surface visibility at CA-SLO-221 was poor due to extremely dense vegetation. One adobe brick fragment was found within the site boundary adjacent to where the AWTP feed water pipeline is proposed. Previous site records describe CA-SLO-221 as a protohistoric site with an outpost from Mission San Miguel. The site has been disturbed by roads, levees, and artificial ponds or basins.

Ground surface visibility at CA-SLO-378 was poor due to extremely dense vegetation. A small number of flakes were observed at the surface along where the product water pipeline to injection wells and the AWTP feed water pipeline to the LIWs are proposed. CA-SLO-378 is a large permanent prehistoric campsite. A large amount of material including choppers, scrapers, broken bowls, and manos have previously been recovered from the site but no subsurface testing has been conducted. The area has been previously disturbed by roads, a house, and the Van Gordon Reservoir.

Ground surface visibility at CA-SLO-1373 was fair and the site appears to be relatively intact. A small amount of ceramic, glass, clams, and faunal bone was visible at the surface (see CRA Figure 9). Previous site records describe the site as a multi-component site with an extensive midden deposit containing lithics, marine shell, Fire Affect Rock, soapstone, and olivella shells. Other site components include a Proto-Historic adobe and Historic artifact scatters.

Ground surface visibility at CA-SLO-1374 was fair but no cultural materials were observed. Previous site records describe the site as a Prehistoric site consisting of bedrock mortars and shell fragments.

Paleontological Survey Results

No paleontological resources are known within the Project site or its immediate vicinity.

IMPACT ANALYSIS

4.5.a Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5?

4.5.b Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?

Less Than Significant With Mitigation Incorporated. Archaeological and historical resources are considered to be significant if they possess integrity and may contribute information important in prehistory or history. Based on the prior research and survey results, the potential to impact resources is discussed below.

There are five previously recorded archaeological resources within the Project site; see Table 4.5-1. Construction of the above ground pipelines is not anticipated to substantively impact these cultural resources. The proposed LIWs and construction staging area would be within the boundary of site CA-SLO-378 and are expected have an impact on this site. The AWTP is at the northern edge of CA-SLO-221 and the western portion of the AWTP is within the boundary of site CA-SLO-1373. The construction access road to the AWTP passes through sites CA-SLO-1373 and CA-SLO-221; see Exhibit 2-12, *Construction Laydown/Staging Areas*. Grading, trenching and excavations in these areas may adversely impact these sites. Therefore, the Project could cause a substantial adverse change in the significance of a historical or archaeological resource. However, the Project would be subject to compliance with LCP Policies that address protection of archaeological resources: LCP 1 addresses protection of archaeological resources; LCP 3 requires a preliminary survey; and LCP 5 addresses mitigation techniques where substantial archaeological resources are found. These LCP Policies are implemented through compliance with the CZLUO. Pursuant to CZLUO Section 23.07.104.3, archaeologically sensitive areas include any parcel containing a known archaeological site recorded by the California Archaeological Site Survey Office. As discussed above, the Project site contains known archaeological sites, thus, is considered an archaeologically sensitive area. CZLUO Section 23.07.104.c specifies that if the preliminary site survey determines that proposed development may have significant effects on existing archaeological resources, a mitigation plan is required by a qualified archaeologist. The CRA recommends that, prior to the start of construction, earthmoving personnel receive a cultural sensitivity training detailing the types of artifacts and fossils that may be encountered and procedures to follow if finds occur. The CRA also recommends that a qualified archaeologist and Native American monitor be present for drilling, grading, trenching, excavation and any other subsurface impacts within the boundaries of previously recorded sites (CA-SLO-378, CA-SLO-187, CA-SLO-1373, and CA-SLO-221) in the areas of the AWTP and LIWs; see Mitigation Measure CUL-1. The Project is anticipated to have a negligible impact on cultural resources outside of the AWTP and LIW areas. Additionally, the Project is subject to compliance with CZLUO Section 23.07.104.d, which specifies that Section 23.05.140 standards would apply in the event archeological resources are unearthed or discovered during any construction activities; see *Existing Regulations* below. Compliance with LCP Policies 1, 3, and 5 would be achieved through compliance with the CZLUO and recommended mitigation measures. Following compliance with

the LCP, CZLUO, and recommended mitigation measures, the Project would result in a less than significant impact on historical and archaeological resources.

EXISTING REGULATIONS

Local Coastal Program Policies:

LCP 1 Protection of Archaeological Resources. The county shall provide for the protection of both known and potential archaeological resources. All available measures, including purchase, tax relief, purchase of development rights, etc., shall be explored at the time of a development proposal to avoid development on important archaeological sites. Where these measures are not feasible and development will adversely affect identified archaeological or paleontological resources, adequate mitigation shall be required.

LCP 3 Identification of Archaeological Sites. Development within an archaeological sensitive areas shall not occur until a preliminary site survey is conducted for the site, and if necessary, mitigation measures implemented.

LCP 5 Mitigation Techniques for Preliminary Site Survey Before Construction. Where substantial archaeological resources are found as a result of a preliminary site survey before construction, the county shall require a mitigation plan to protect the site. Some examples of specific mitigation techniques include:

a. Project redesign could reduce adverse impacts of the project through relocation of open space, landscaping or parking facilities.

b. Preservation of an archaeological site can sometimes be accomplished by covering the site with a layer of fill sufficiently thick to insulate it from impact. This surface can then be used for building that does not require extensive foundations or removal of all topsoil.

c. When a project impact cannot be avoided, it may be necessary to conduct a salvage operation. This is usually a last resort alternative because excavation, even under the best conditions, is limited by time, costs and technology. Where the chosen mitigation measure necessitates removal of archaeological resources, the county shall require the evaluation and proper deposition of the findings based on consultation with a qualified archaeologist knowledgeable in the Chumash culture.

d. A qualified archaeologist knowledgeable in the Chumash culture may need to be on-site during initial grading and utility trenching for projects within sensitive areas.

Coastal Zone Land Use Ordinance Standards:

CZLUO Chapter 23.04.200 (Protection of Archaeological Resources Not Within the Archaeologically Sensitive Areas Combining Designation). All development applications that propose development that is not located within the Archaeologically Sensitive Areas combining designation and that meets the following location criteria shall be subject to the standards for the Archaeologically Sensitive Areas Combining Designation in Chapter 23.07: development that is either within 100 feet of the bank of a coastal stream (as defined in the Coastal Zone Land Use Ordinance), or development that is within 300 feet of such stream where the slope of the site is less than 10 percent. (NOTE: Project is within 100 feet of stream; therefore subject to Chapter 23.07).

CZLUO Chapter 23.05.140 (Archeological Resources Discovery). In the event archeological resources are unearthed or discovered during any construction activities, the following standards apply:

a. Construction activities shall cease, and the Environmental Coordinator and Planning Department shall be notified so that the extent and location of discovered materials may be recorded by a qualified archeologist, and disposition of artifacts may be accomplished in accordance with state and federal law.

b. In the event archeological resources are found to include human remains, or in any other case when human remains are discovered during construction, the County Coroner is to be notified in addition to the Planning Department and Environmental Coordinator so that proper disposition may be accomplished.

CZLUO Chapter 23.07.104 (Archaeologically Sensitive Areas). To protect and preserve archaeological resources, the following procedures and requirements apply to development within areas of the coastal zone identified as archaeologically sensitive.

a. Archaeologically sensitive areas. The following areas are defined as archaeologically sensitive:

    1. Any parcel within a rural area which is identified on the rural parcel number list prepared by the California Archaeological Site Survey Office on file with the county Planning Department.

    2. Any parcel within an urban or village area which is located within an archaeologically sensitive area as delineated by the official maps (Part III) of the Land Use Element.

    3. Any other parcel containing a known archaeological site recorded by the California Archaeological Site Survey Office.

b. Preliminary site survey required. Before issuance of a land use or construction permit for development within an archaeologically sensitive area, a preliminary site survey shall be required. The survey shall be conducted by a qualified archaeologist knowledgeable in local Native American culture and approved by the Environmental Coordinator. The County will provide pertinent project information to the Native American tribe(s).

c. When a mitigation plan is required. If the preliminary site survey determines that proposed development may have significant effects on existing, known or suspected archaeological resources, a plan for mitigation shall be prepared by a qualified archaeologist. The County will provide pertinent project information to the Native American tribe(s) as appropriate. The purpose of the plan is to protect the resource. The plan may recommend the need for further study, subsurface testing, monitoring during construction activities, project redesign, or other actions to mitigate the impacts on the resource. Highest priority shall be given to avoiding disturbance of sensitive resources. Lower priority mitigation measures may include use of fill to cap the sensitive resources. As a last resort, the review authority may permit excavation and recovery of those resources. The mitigation plan shall be submitted to and approved by the Environmental Coordinator, and considered in the evaluation of the development request by the Review Authority.

d. Archeological resources discovery. In the event archeological resources are unearthed or discovered during any construction activities, the standards of Section 23.05.140 of this title shall apply. Construction activities shall not commence until a mitigation plan, prepared by a qualified professional archaeologist reviewed and approved by the Environmental Coordinator, is completed and implemented. The County will provide pertinent project information to the affected Native American tribe(s) and consider comments prior to approval of the mitigation plan. The mitigation plan shall include measures to avoid the resources to the maximum degree feasible and shall provide mitigation for unavoidable impacts. A report verifying that the approved mitigation plan has been completed shall be submitted to the Environmental Coordinator prior to occupancy or final inspection, whichever occurs first.

MITIGATION MEASURES

CUL-1 Prior to the start of construction, earthmoving personnel shall receive a cultural and paleontological sensitivity training detailing the types of artifacts and fossils that may be encountered and procedures to follow if finds occur.

CUL-2 The Applicant shall retain qualified archaeological monitor and Native American monitor, approved by the County Environmental Coordinator, to be present during all site disturbance activities within the boundaries of previously recorded sites. Monitoring reports shall be retained by the Applicant and shared with the Environmental Coordinator's Office upon request.

4.5.c Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant With Mitigation Incorporated. The Holocene alluvial deposits are not sensitive for fossil resources due to their young age and are given a Potential Fossil Yield Classification (PFYC) sensitivity ranking of two or low. Vertebrate fossils are known to occur intermittently, however, with low predictability in the Franciscan Assemblage and Pleistocene marine terrace deposits resulting in a PFYC ranking of 3a or moderate sensitivity.

Ground disturbance activities for the construction of wells include drilling between 40 and 100 feet in depth. Additionally, installation of the impermeable liner at the evaporation pond would require removal of vegetation. Nominal excavation would be necessary for the proposed AWTP, since it would be within a container. Yard piping would be installed below ground, under the AWTP. Additionally, no excavation would be necessary for the proposed conveyance pipelines, since they would be above ground.

While well excavations could encounter fossil bones or other materials from any of the sensitive sediments identified in the Project site, due to the method of excavation, the specimens would lack context that is critical to scientific significance. These types of unprovenanced fossils would only be significant if they result in identification of new species that are currently not known in the area. If they are identified as already-known species, they would be suitable for educational uses. Excavation for the proposed AWTP is not anticipated to be deep enough to impact paleontologically sensitive sediments.

No paleontological resources are known within the Project or the immediate vicinity. However, the Franciscan Assemblage, which may be encountered at depth, and Pleistocene marine deposits similar to those within the Project site have produced significant paleontological resources within San Luis Obispo County. The Holocene alluvium is not sensitive for fossils, but may be underlain by older, paleontologically sensitive sediments at depth. No fossils meeting significance criteria are anticipated from the deep well excavations due to lack of context of any recovered material. All other excavations are anticipated to be shallow and would not impact paleontologically sensitive sediments. Based on the results of the CRA, the Project is anticipated to have a negligible impact on paleontological resources. Therefore, less than significant impact would occur in this regard. To further minimize potential impacts on paleontological resources, the Project would be subject to compliance with LCP Policy 1, which addresses protection of paleontological resources. Compliance with LCP Policy 1 would be achieved through compliance with recommended Mitigation Measure CUL-1, which addresses sensitivity training. Following compliance with CUL-1, the Project would result in a less than significant impact on paleontological resources.

EXISTING REGULATIONS

Local Coastal Program Policies: See Policy LCP 1 above.

MITIGATION MEASURES

See Mitigation Measure CUL-1 above.

4.5.d Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. The probability that Project construction would impact any human remains appears to be remote, given the degree of past disturbance of the site. Notwithstanding, ground-disturbing activities, such as grading or excavation, could disturb human remains. In the event that human remains are encountered during earth removal or disturbance activities, Health and Safety Code Section 7050.5 requires that all activities cease immediately and a qualified archaeologist and Native American monitor be contacted immediately. The Coroner would also be contacted pursuant to Public Resources Code Sections 5097.98 and 5097.99. Should the Coroner determine the human remains to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC would then be required to contact the most likely descendant of the deceased Native American, who would then serve as consultant on how to proceed with the remains. Further, the Project would be subject to compliance with CZLUO standards and Mitigation Measures CUL-1 and CUL-2. Compliance with the established regulatory framework (i.e., California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98, CZLUO standards) and recommended mitigation would reduce potential impacts to less than significant.

EXISTING REGULATIONS

Local Coastal Program Policies: See Policy LCP 1, 3, and 5 above.

Coastal Zone Land Use Ordinance Standards: See CZLUO Sections 23.04.200, 23.05.140, and 23.07.104 above.

MITIGATION MEASURES

See CUL-1 and CUL-2 above.

This page intentionally left blank.

4.6 GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1) 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.				✓
2) Strong seismic ground shaking?			✓	
3) Seismic-related ground failure, including liquefaction?				✓
4) Landslides?			✓	
b. Result in substantial soil erosion or the loss of topsoil?			✓	
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			✓	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			✓	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				✓

IMPACT ANALYSIS

4.6.a.1 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving 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?

No Impact. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act requires the State Geologist to establish regulatory zones, known as "Earthquake Fault Zones," around the surface traces of active faults and to issue appropriate maps. As indicated in the State of California Special Studies Zones Map - San Simeon Quadrangle (July 1, 1986), the Project site is not affected by a State-designated Earthquake Fault Zone.[1] Therefore, the Project would not expose people or structures to potential substantial adverse effects involving rupture of a known earthquake fault.

[1] State of California, Department of Conservation, California Geological Survey, http://www.quake.ca.gov/gmaps/WH/regulatorymaps.htm, Accessed May 27, 2014.

MITIGATION MEASURES

No mitigation is required.

4.6.a.2 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Less Than Significant Impact. According to the SLO County General Plan Safety Element (page 17), San Luis Obispo County is located in a geologically complex and seismically active region. Strong ground shaking resulting from fault movement is one direct effect from an earthquake. The Safety Element concludes that seismic/earthquake-related hazards have the potential to result in significant public safety risks and property damage.

Earthquakes on regional and/or local causative faults could expose people or the proposed water facilities to strong seismic ground shaking. The intensity of ground shaking on the Project site would depend upon the magnitude of the earthquake, distance to the epicenter, and the geology of the area between the epicenter and the Project site. Numerous controls would be imposed on the Project through the permitting process. These controls include those that pertain to the Project site's Geologic Study Area (GSA) Combining Designation (see Coastal Zone North Coast Planning Area Rural Combining Designation Map[2]), which is assigned to geologic hazard areas with moderate to high landslide risk potential and/or moderate to high liquefaction hazard potential; see Responses 4.6.a.3 and 4.6.a.4 below. In general, the County regulates development (and reduces potential seismic and geologic impacts) under requirements of the LCP, CZLUO, and San Luis Obispo County Code Title 19, known as the San Luis Obispo County Building and Construction Ordinance (BCO). These regulations were established to protect and promote the public health, safety, and welfare. The Project is subject to compliance with the relevant LCP Policies that address geologic stability: LCP 1 requires that the Project be designed to minimize risks to human life and property; LCP 2 requires that the new development ensure structural stability while not creating or contributing to erosion or geological instability; and LCP 3 requires a detailed review of development proposed within the GSA, which provides recommendations and conclusions consistent with the LCP. Compliance with the BCO, which is intended to regulate the design and construction of buildings and structures through basic standards, is required. Compliance with CZLUO Section 23.07.084, *Application Content - Geologic and Soils Report Required*, which specifies that all land use permit applications for projects located within a GSA be accompanied by a report prepared by a certified engineering geologist and/or registered civil engineer (as to soils engineering), is also required. The report would identify criteria for corrective measures when necessary and provide recommendations regarding the effect of geologic conditions on the proposed development. Compliance with LCP Policies 1, 2, and 3 would be achieved through compliance with the BCO and CZLUO. Following compliance with the LCP, BCO, and CZLUO, the Project would result in a less than significant impact regarding the exposure of people or structures to substantial adverse effects involving strong seismic ground shaking.

EXISTING REGULATIONS

Local Coastal Program Policies:

Hazards

LCP 1 New Development. All new development proposed within areas subject to natural hazards from geologic or flood conditions (including beach erosion) shall be located and designed to minimize risks to human life and property….

LCP 2 Erosion and Geologic Stability. New development shall ensure structural stability while not creating or contributing to erosion or geological instability.

[2] State of California, Department of Conservation, California Geological Survey, http://www.quake.ca.gov/gmaps/WH/ regulatorymaps.htm, Accessed May 27, 2014.

LCP 3 Development Review in Hazard Areas. The County shall require a detailed review of development proposed within the geologic study area and flood hazard combining designations as indicated on the Land Use Element maps for the coastal zone. The review shall be performed by a qualified registered and/or certified engineering geologist and shall be adequately detailed to provide recommendations and conclusions consistent with this plan….

San Luis Obispo County Building and Construction Ordinance:

In California, construction regulations consist of the California Building Code (CBC) and any additions or modifications to the CBC implemented by the local government. The San Luis Obispo County Building and Construction Ordinance (Title 19 of the San Luis Obispo County Code) (BCO) was established and adopted to protect and promote the public health, safety, and welfare. This ordinance is intended to regulate the design and construction of buildings and structures through basic standards for site preparation, erosion and sedimentation control, construction activities, quality of materials, occupancy classifications, the location and maintenance of buildings and structures and certain equipment associated with buildings and structures. According to BCO Chapter 19.3, *Building Code*, the 2010 CBC was adopted, as modified, amended, and/or supplemented.

Coastal Zone Land Use Ordinance Standards:

CZLUO Section 23.07.084 (Application Content - Geologic and Soils Report Required). This Section specifies that all land use permit applications for projects located within a Geologic Study Area (except those exempted by Section 23.07.082) shall be accompanied by a report prepared by a certified engineering geologist and/or registered civil engineer (as to soils engineering), as appropriate.

MITIGATION MEASURES

No mitigation is required.

4.6.a.3 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

No Impact. The Seismic Hazards Mapping Act (SHMA) of 1990 directs the Department of Conservation, California Geological Survey to identify and map areas prone to liquefaction (as well as earthquake-induced landslides and amplified ground shaking). Seismic Hazard Zone Maps are produced to illustrate the designated Zones of Required Investigation (ZORI), which are areas prone to liquefaction and earthquake–induced landslides. Site-specific geotechnical investigations are required within the ZORI to identify and evaluate seismic hazards (i.e., liquefaction and earthquake induced landslides) and formulate mitigation measures prior to permitting most developments designed for human occupancy. According to the Seismic Hazards Zones Map, the Project Site is not located within a ZORI for liquefaction hazard.[3] Additionally, General Plan Safety Element Map 3, *Liquefaction Hazards*, illustrates County lands with potential for liquefaction and indicates the Project site has a "Low Potential" for liquefaction.[4] Therefore, the Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.

[3] State of California, Department of Conservation, California Geological Survey, http://www.quake.ca.gov/gmaps/WH/regulatorymaps.htm, Accessed May 27, 2014.

[4] Although the Coastal Zone North Coast Planning Area Rural Combining Designation Map indicates the Project site is designated GSA, this designation recognizes the potential for landslides that exists on portions of the Project site; see Responses 4.6.a.4 and 4.6.c.

MITIGATION MEASURES

No mitigation is required.

4.6.a.4 Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

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

Less Than Significant Impact. The Seismic Hazard Zone Maps, which illustrate the designated ZORI including areas prone to earthquake–induced landslides, indicate that the Project site is not located within a ZORI for earthquake-induced landslide hazard.[5] However, General Plan Safety Element Map 4, *Landslide Hazards*, illustrates County lands with potential for landslides and indicates portions of the Project site have a "High Potential" for landslides. The Project site is designated GSA to recognize this High Potential for landslides; see Coastal Zone North Coast Planning Area Rural Combining Designation Map.

Operating and maintaining the equipment would not require full time staff onsite, since the AWTP would operate automatically. Up to two employees would visit the site daily to visually inspect and maintain the AWTP. Given the Project site's GSA designation, the Project could expose structures to adverse effects involving landslides. However, the proposed AWTP, water wells, and pipelines would not be located on or adjacent to steep slopes. Additionally, although the Project proposes to rehabilitate/modify the existing Van Gordon Reservoir for disposal of the RO brine (by adding impermeable liners, a leachate collection/removal system (LCRS), a vadose zone monitoring system, and mechanical spray evaporators), only nominal earthwork would be required. CDM PD Figure 2-9, *Brine Pond Section*, shows the existing Van Gordon Reservoir, and Exhibit 2-9, *Brine Pond Plan*, shows the proposed evaporation pond. The Project proposes to: demolish/regrade the existing spillway along the pond's southern berm to provide a uniform top of slope elevation around the pond; and grade the bottom of the pond for installation of the proposed liners, LCRS, and monitoring system. Further, as discussed in Response 4.6.a.2, numerous controls would be imposed on the Project through the permitting process, including those specified in the LCP, CZLUO, and BCO. Specifically pursuant to CZLUO Section 23.07.084, projects located within a GSA require preparation of report by a certified engineering geologist and/or registered civil engineer. Compliance with LCP Policies 1, 2, and 3 would be achieved through compliance with the BCO and CZLUO. Following compliance with the LCP, BCO, and CZLUO, the Project would result in a less than significant impact regarding the exposure of people or structures to substantial adverse effects involving landslides.

EXISTING REGULATIONS

Local Coastal Program Policies: See LCP 1, LCP 2, and LCP 3 above.

San Luis Obispo County Building and Construction Ordinance: See BCO above.

Coastal Zone Land Use Ordinance Standards: See CZLUO Section 23.07.084 above.

MITIGATION MEASURES

No mitigation is required.

[5] State of California, Department of Conservation, California Geological Survey, http://www.quake.ca.gov/gmaps/WH/regulatorymaps.htm, Accessed May 27, 2014.

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

Less Than Significant Impact. Erosion is a natural process that occurs over time and can be caused by either wind or water moving over soils. However, soil erosion can become a problem when human activities accelerate the rate at which soils are displaced.

Based on the USDA Soil Survey, the Project site is underlain by the following soil units: Beaches, Capistrano sandy loam (rolling); Concepcion loam (5 to 9 percent slopes); Lodo clay loam (5 to 15 percent slopes); Los Osos loam (5 to 9 percent slopes); Los Osos loam (30 to 50 percent slopes); Los Osos-Diablo complex (15 to 30 percent slopes); Marimel sandy-clay loam (occasionally flooded); Riverwash; and Salinas silty clay loam (0 to 2 percent slopes); see Appendix D Exhibit 4. Additionally, San Simeon Creek and Van Gordon Creek traverse the southeastern and western portions of the property, respectively.

Project implementation would result in ground-disrupting activities, which would temporarily disturb soils. Disturbed soils are susceptible to higher rates of erosion from wind, rain, and runoff. Earth-disturbing activities associated with Project construction could result in substantial soil erosion or the loss of topsoil. As concluded in Response 4.9.a, the Project is subject to compliance with the National Pollutant Discharge Elimination System (NPDES) permitting process, which is administered through the State Water Resources Control Board Construction General Permit (Water Quality Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ) since one or more acres of soil would be disturbed. Additionally, the Project is subject to compliance with the relevant LCP Policies that address erosion: Coastal Streams LCP 20 requires that coastal streams and adjoining riparian vegetation be protected; LCP 21 requires evaluation of erosion and runoff concerns for development adjacent to a coastal stream; LCP 23 requires that the State Water Resources Control Board and the County ensure that the beneficial use of coastal stream waters is protected; LCP 28 requires that a buffer setback zone be established between any new development and the upland edge of riparian habitats; and Hazards LCP 2 requires that new development ensure structural stability while not creating or contributing to erosion. The Project is subject to compliance with CZLUO Chapter 23.05, *Site Development Standards*, which establishes standards for the preparation of sites for development and construction activities to protect against soil erosion. Specifically, CZLUO Sections 23.05.022 through 23.05.039 establish standards for grading and excavation activities to protect against erosion and the sedimentation of water courses. CZLUO Section 23.07.174, *Streams and Riparian Vegetation*, establishes standards intended to preserve and protect the natural hydrological system and ecological functions of coastal streams. Compliance with the relevant LCP Policies would be achieved through compliance with the NPDES, BCO, and CZLUO. Following compliance with the NPDES, LCP, and CZLUO regulatory requirements, the Project would result in a less than significant impact involving soil erosion. Refer also to Section 4.4, *Biological Resources*, and Section 4.9, *Hydrology and Water Quality*.

EXISTING REGULATIONS

Local Coastal Program Policies:

Coastal Streams

LCP 20 Coastal Streams and Riparian Vegetation. Coastal streams and adjoining riparian vegetation are environmentally sensitive habitat areas and the natural hydrological system and ecological function of coastal streams shall be protected and preserved.

LCP 21 Development in or Adjacent to a Coastal Stream. Development adjacent to or within the watershed (that portion within the coastal zone) shall be sited and designed to prevent impacts which would significantly degrade the coastal habitat and shall be compatible with the continuance of such habitat areas. This shall include evaluation of erosion and runoff concerns.

LCP 23 County and State Review of Coastal Stream Projects. The State Water Resources Control Board and the County shall ensure that the beneficial use of coastal stream waters is protected, for projects over which it has jurisdiction. For projects which do not fall under the review of the State Water Resources Control Board, the County (in its review of public works and stream alterations) shall ensure that the quantity and quality surface water discharge from streams and rivers shall be maintained at levels necessary to sustain the functional capacity of streams, wetland, estuaries and lakes.

LCP 28 Buffer Zone for Riparian Habitats. In rural areas (outside the USL) a buffer setback zone of 100 feet shall be established between any new development (including new agricultural development) and the upland edge of riparian habitats. In urban areas this minimum standard shall be 50 feet except where a lesser buffer is specifically permitted. The buffer zone shall be maintained in natural condition along the periphery of all streams. Permitted uses within the buffer strip shall be limited to passive recreational, educational or existing nonstructural agricultural developments in accordance with adopted best management practices. Other uses that may be found appropriate are limited to utility lines, pipelines, drainage and flood control facilities, bridges and road approaches to bridges to cross a stream and roads when it can be demonstrated that: 1) alternative routes are infeasible or more environmentally damaging and 2) adverse environmental effects are mitigated to the maximum extent feasible. Lesser setbacks on existing parcels may be permitted if application of the minimum setback standard would render the parcel physically unusable for the principal permitted use. In allowing a reduction in the minimum setbacks, they shall be reduced only to the point at which a principal permitted use (as modified as much as is practical from a design standpoint) can be accommodated.

Coastal Zone Land Use Ordinance Standards:

CZLUO Chapter 23.05 (Site Development Standards). This Chapter establishes standards for the preparation of sites for development and construction activities, to protect the health, safety and welfare of persons living on or near a project site by protecting against unwarranted or unsafe grading, or soil erosion resulting from grading; by defining appropriate circumstances for tree removal; by providing for adequate drainage and fire protection facilities; and by identifying appropriate standards for other aspects of site development.

CZLUO Section 23.05.020 (Grading). Sections 23.05.022 through 23.05.039 establish standards for grading and excavation activities to minimize hazards to life and property; protect against erosion and the sedimentation of water courses; and protect the safety, use and stability of public rights-of-way and drainage channels. Additional standards for grading within a Sensitive Resource Area are in Sections 23.07.160 *et seq.*

CZLUO Section 23.07.174 (Streams and Riparian Vegetation). Coastal streams and adjacent riparian areas are environmentally sensitive habitats. The provisions of this section are intended to preserve and protect the natural hydrological system and ecological functions of coastal streams.

a. Development adjacent to a coastal stream. Development adjacent to a coastal stream shall be sited and designed to protect the habitat and shall be compatible with the continuance of such habitat.

d. Riparian setbacks: New development shall be setback from the upland edge of riparian vegetation the maximum amount feasible. In the rural areas (outside the URL) this setback shall be a minimum of 100 feet. A larger setback will be preferable in both the urban and rural areas depending on parcel configuration, slope, vegetation types, habitat quality, water quality, and any other environmental consideration.

(1) Permitted uses within the setback: Permitted uses are limited to those specified in Section 23.07.172d(1) (for wetland setbacks), provided that the findings required by that section can be made. Additional permitted uses that are not required to satisfy those findings include pedestrian and

equestrian trails, and non-structural agricultural uses. All permitted development in or adjacent to streams, wetlands, and other aquatic habitats shall be designed and/or conditioned to prevent loss or disruption of the habitat, protect water quality, and maintain or enhance (when feasible) biological productivity.

MITIGATION MEASURES

No mitigation is required.

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

Less Than Significant Impact. Some of the soils identified in Response 4.6.b exhibit a high shrink swell potential, thus, the Project components could be located on expansive soil. As discussed in Response 4.6.a.2, numerous controls would be imposed on the Project through the permitting process, including those specified in the LCP, CZLUO, and BCO. Specifically pursuant to CZLUO Section 23.07.084, projects located within a GSA require preparation of report by a certified engineering geologist and/or registered civil engineer. Following compliance with the LCP, BCO, and CZLUO, the Project would result in a less than significant impact regarding expansive soils.

EXISTING REGULATIONS

Local Coastal Program Policies: See LCP 1, LCP 2, and LCP 3 above.

San Luis Obispo County Building and Construction Ordinance: See BCO above.

Coastal Zone Land Use Ordinance Standards: See CZLUO Section 23.07.084 above.

MITIGATION MEASURES

No mitigation is required.

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

No Impact. The Project involves construction and operation of water facilities that would not generate wastewater or require disposal of wastewater. The microfilter backwash associated with AWTP operations would be returned to the existing percolation ponds adjacent to the AWTP. In addition, the Project proposes to rehabilitate/modify the existing Van Gordon Reservoir for disposal of the RO brine, see Responses 4.6.a.4 and 4.6.c. Therefore, the Project would not require septic tanks or alternative wastewater disposal systems, and no impact would occur in this regard.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

4.7 GREENHOUSE GASES

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?			✓	

INTRODUCTION

California is a substantial contributor of global greenhouse gases (GHGs), emitting over 400 million tons of carbon dioxide (CO_2) per year.[1] Climate studies indicate that California is likely to see an increase of three to four degrees Fahrenheit (ºF) over the next century. Methane is also an important GHG that potentially contributes to global climate change. GHGs are global in their effect, which is to increase the earth's ability to absorb heat in the atmosphere. As primary GHGs have a long lifetime in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere is mostly independent of the point of emission.

The impact of human activities on global climate change is apparent in the observational record. Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of CO_2, methane (CH_4), and nitrous oxide (N_2O) from before the start of industrialization (approximately 1750), to over 650,000 years ago. For that period, it was found that CO_2 concentrations ranged from 180 parts per million (ppm) to 300 ppm. For the period from approximately 1750 to the present, global CO_2 concentrations increased from a pre-industrialization period concentration of 280 ppm to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the pre-industrial period range.

IMPACT ANALYSIS

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

Less Than Significant Impact. Due to the nature of global climate change, it is not anticipated that any single development project would have a substantial effect on global climate change. In actuality, GHG emissions from the Project would combine with emissions emitted across California, the United States, and the world to cumulatively contribute to global climate change.

Regulations and Significance Criteria

State

The Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of GHGs at 400 to 450 ppm carbon dioxide equivalent (CO_2eq)[2] concentration is required to keep global mean warming below 2 degrees Celsius (ºC), which in turn is assumed to be necessary to avoid dangerous climate change.

[1] California Energy Commission, *California Greenhouse Gas Inventory for 2000-2011*, August 2013.

[2] Carbon Dioxide Equivalent (CO_2eq) – A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

Executive Order S-3-05 was issued in June 2005, which established the following GHG emission reduction targets:

- 2010: Reduce GHG emissions to 2000 levels;
- 2020: Reduce GHG emissions to 1990 levels; and
- 2050: Reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill (AB) 32 requires that the California Air Resources Board (CARB) determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. CARB has approved a 2020 emissions limit of 427 million metric tons (MMT) of CO_2eq.

Senate Bill (SB) 97 acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA. OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed project. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible. OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance as described in *CEQA Guidelines* Section 15064.7 that will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State. The Natural Resources Agency adopted the CEQA Guidelines Amendments prepared by OPR, as directed by SB 97. On February 16, 2010, the Office of Administration Law approved the CEQA Guidelines Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The CEQA Guidelines Amendments became effective on March 18, 2010.

County of San Luis Obispo Air Pollution Control District

According to the San Luis Obispo County Air Pollution Control District (SLOAPCD) CEQA Air Quality Handbook (April 2012), SLOAPCD established significance thresholds for GHG emissions from project construction and operations. GHGs from construction projects must be quantified and amortized over the life of the project (i.e., 50 years for residential projects and 25 years for commercial projects). The amortized construction emissions are added to the annual average operational emissions and then compared to the operational thresholds of significance. The thresholds of significance for a project's amortized construction plus operational-related GHG emissions are:

- For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy; or annual emissions less than 1,150 metric tons per year (MT/yr) of CO2eq; or 4.9 MT CO2eq/service population (SP)/yr (residents + employees). Land use development projects include residential, commercial and public land uses and facilities. Lead agencies may use any of the three options above to determine the significance of a project's GHG emission impact to a level of certainty.

- For stationary-source projects, the threshold is 10,000 metric tons per year (MT/yr) of CO2eq. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an SLOAPCD permit to operate.

Project-Related Sources of Greenhouse Gases

The proposed water facilities are described in Section 2.4, *Project Characteristics*. Project construction would result in direct emissions of CO_2, CH_4, and N_2O from the operation of construction equipment. Transport of materials and construction workers to and from the Project site would also result in GHG emissions. Construction activities would be short-term in duration and would cease upon Project completion. Project operations would not result in any new

sources of operational GHG emissions, as the proposed facilities would be electronically operated. Vehicle trips would be nominal and only associated with maintenance and inspection activities. Consequently, Project-related GHG emissions would only be from construction activities and energy consumption for equipment operations. The analysis of GHG emissions has been prepared utilizing the California Emissions Estimator Model (CalEEMod) computer model. Table 4.7-1, *Estimated Greenhouse Gas Emissions*, presents the estimated CO_2, N_2O, and CH_4 emissions of the Project. The CalEEMod outputs are contained within the Appendix A, *Air Quality/Greenhouse Gas Data*.

Table 4.7-1
Estimated Greenhouse Gas Emissions

Source	CO_2	CH_4		N_2O		Total $MTCO_2eq/yr$
	MT/yr[1]	MT/yr[1]	$MTCO_2eq/yr$[2]	MT/yr[1]	$MTCO_2eq/yr$[2]	
Direct Emissions[3]						
• Construction (amortized over 25 years)	11.11	0.00	0.05	0.00	0.00	11.16
Total Unmitigated Direct Emissions[4]	***11.11***	***0.00***	***0.05***	***0.00***	***0.00***	***11.16***
Indirect Emissions[5]						
• Energy	114.05	0.01	0.11	0.00	0.33	114.49
Total Unmitigated Indirect Emissions[4]	***114.05***	***0.01***	***0.11***	***0.00***	***0.33***	***114.49***
Total Unmitigated Project-Related Emissions[4]	***125.65 $MTCO_2eq/yr$***					

Notes:
1. Emissions calculated using California Emissions Estimator Model (CalEEMod).
2. Carbon dioxide equivalent values calculated using the United States Environmental Protection Agency Website, *Greenhouse Gas Equivalencies Calculator*, http://www.epa.gov/cleanenergy/energy-resources/calculator.html, accessed June 9, 2014.
3. The Project involves water facilities and would not include other direct emissions including area source or mobile source emissions.
4. Totals may be slightly off due to rounding.
5. Project-related indirect emissions would occur from energy consumption. Refer to Section 2.0, *Project Description*, for a detailed description of the electric load from the proposed equipment. The Project would not include other indirect emissions.

Refer to Appendix A, *Air Quality/Greenhouse Gas Data*, for detailed model input/output data.

Construction Emissions. Per the SLOAPCD *CEQA Air Quality Handbook*, construction GHG emissions are summed and amortized over 25 years. As seen in Table 7-1, the Project would result in 11.16 $MTCO_2eq$ when amortized over 25 years.

Energy Consumption. Energy Consumption emissions were calculated using CalEEMod and Project-specific energy consumption data for all of the proposed equipment. Electricity would be provided to the Project site via Pacific Gas & Electric. The Project would indirectly result in 114.49 $MTCO_2eq$/year due to energy consumption; refer to Table 7-1.

Conclusion

As seen in Table 4.7-1, the Project would result in a total of 125.65 $MTCO_2eq/yr$, which is well below the 10,000 $MTCO_2eq$/year screening threshold. As GHG emissions from construction of the Project would be minimal and less than the GHG emissions threshold adopted by the SLOAPCD, a less than significant impact would occur in this regard.

MITIGATION MEASURES

No mitigation is required.

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

Less Than Significant Impact. On November 22, 2011, the County adopted *Energy Wise Plan Designing Energy and Climate Solutions for the Future,* a Climate Action Plan that addresses the challenges of climate change by reducing local GHG emissions and preparing the County to adapt to a changing climate. The Plan outlines the County's approach to reducing GHG emissions through a number of goals, measures, and actions that provide a road map to achieving the County's GHG reduction target of 15 percent below baseline levels by 2020. The Project would not conflict with the CAP, as the Project does not change the County's land use. Furthermore, the Project does not involve generating new vehicle trips or proposing new land uses. Therefore, the Project would not conflict with an adopted plan, policy, or regulation pertaining to GHGs. Also, the Project would result in Project-related GHG emissions that are below the CEQA threshold of 10,000 $MTCO_2eq/yr$. Thus, a less than significant impact would occur in this regard.

MITIGATION MEASURES

No mitigation is required.

4.8 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 for people residing or working in the project area?				✓
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			✓	

IMPACT ANALYSIS

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

Less Than Significant Impact. The Project proposes an AWTP that would treat brackish water to produce potable water. As described in detail in CDM PD Section 2.2, the AWTP would consist of multiple unit processes including microfiltration (MF) or ultrafiltration (UF), reverse osmosis (RO), advance oxidation process (AOP) utilizing ultraviolet (UV) light, and hydrogen peroxide (H_2O_2), and pre- and post-treatment chemical additions to the treated water before it is conveyed to RIW for recharge. The pre-treatment involves addition of ammonium hydroxide and sodium hypochlorite. The RO facility includes pre-treatment chemical addition (antiscalant and sulfuric acid for scale control). The UV disinfection process would include addition of hydrogen peroxide. The post-treatment strategy would include addition of calcium chloride and caustic soda. All solutions would be stored within the AWTP. All solutions would be delivered to the AWTP in closed containers and would be handled within the AWTP. Any potential spill would be entirely contained within the AWTP area, in compliance with the regulations discussed below.

The brine waste would be evaporated via natural evaporation as well as mechanical spray evaporators. Over time, the dissolved salt concentration in the pond would increase until it begins to precipitate from solution. The brine generated by the AWTP is not a hazardous material. Notwithstanding, the super-concentrated waste, whether liquid or solid, would be removed from the site for disposal. In concentrated slurry form, the waste would be pumped to trucks and hauled away for disposal at a licensed disposal site. In dried solids form, the solids accumulated on pond bottoms would be removed manually using shovels and barrels and disposed offsite at a licensed disposal site. See also Section 4.4, *Biological Resources*, for recommended mitigation.

The San Luis Obispo County Environmental Health Department (SLO EHD) is the Certified Unified Program Agency (CUPA) for the County. Monitoring of the AWTP with respect to the use of hazardous materials would be the primary responsibility of the SLO EHD, as well as the Central Coast Regional Water Quality Control Board (CCRWQCB). All hazardous materials or chemicals used at the AWTP would have to be filed on record with the SLO EHD (the designated CUPA) and California Department of Forestry (CDF), and would be routinely inspected to ensure that the materials are being stored, handled, and used in accordance with all applicable Federal, State, and local standards and regulations to reduce the potential for a hazardous materials incident. Transportation of all hazardous materials to/from the site would also be subject to compliance with all applicable Caltrans protocols. Additionally, facilities containing hazardous materials for transport, storage, or use would comply with all County, OSHA, Cal EPA, and U.S. EPA requirements.

The AWTP would incorporate leak and spill containment measures to minimize the risk of upset to both onsite employees and surrounding areas, as required by existing CUPA regulations. A typical design measure to minimize potential upset conditions involves storage of hazardous materials in containment structures with a 110 percent spill containment capability. These containment structures would be separated or divided from other chemicals to prevent mixing in case of accidental spillage. All storage tanks would be constructed of appropriate, non-reactive materials, compatible with the hazardous material supplier recommendations.

The AWTP operator would be required to develop hazardous waste management and safety plans in accordance with County, OSHA, and U.S. EPA requirements. In accordance with OSHA regulation 29 CFR 1910.119, the AWTP would require preparation of a Process Safety Management Program (PSM), which is designed to prevent/minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. This PSM would provide the following preventative components:

- Employee participation plan;
- Process safety information;
- Process hazard analysis;
- Written operating procedures;
- Employee training requirements and written training programs;
- Inspection and maintenance program to document mechanical integrity;
- Preventative maintenance program;
- Contractor training requirements;
- Hot work cutting and welding permit procedures;
- Pre-startup safety review and management of change procedures;
- Compliance audit procedures;
- External emergency/non-emergency notification;
- Facilities training requirements; and
- Reportable quantities of onsite chemicals.

Because the AWTP would store hazardous materials onsite, it must also be in compliance with EPA Risk Management Planning (RMP) Rule 40 CFR 68, which would require the AWTP operator to register the facility with the EPA before onsite storage of hazardous chemicals.

The AWTP would require the transport of hazardous materials via truck. The transport of hazardous materials by truck is strictly controlled by State and Federal regulations. Hazardous materials transport would comply with all Caltrans (for truck transport) requirements to minimize potential spills and/or mishandling of hazardous materials.
The potential exists for hazardous materials to be accidentally released during operations. However, as previously noted, facilities that store, handle, or transport hazardous materials would be required to procure business plans and adhere to strict procedures enforced by agencies with jurisdiction over businesses or areas that routinely use or handle hazardous materials. During operations, all standards required by the SLO EHD, EPA, DTSC, and CDF would be implemented.

Compliance with the regulatory requirements described above would ensure that the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

MITIGATION MEASURES

No mitigation is required.

4.8.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?

Less Than Significant Impact. Due to the use of chemicals in the processes described above, the potential exists for accidental release of these materials into the environment. However, compliance with the regulatory framework would ensure that the Project would not create a significant hazard to the public or the environment through the accidental release of hazardous materials. Refer to Response 4.8.a.

MITIGATION MEASURES

No mitigation is required.

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

No Impact. As concluded in Response 4.8.a, the Project would involve the routine transport and use of hazardous materials. However, the Project would not emit hazardous emissions and there are no existing or proposed schools within 0.25 miles of the Project site.

MITIGATION MEASURES

No mitigation is required.

4.8.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?

No Impact. The Project site is not included on a list of hazardous materials sites. Therefore, the Project would not be located on such a site.

MITIGATION MEASURES

No mitigation is required.

4.8.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 for people residing or working in the project area?

No Impact. The Project site is located approximately 37 miles northwest of the San Luis Obispo County Regional Airport and is not located within the *Airport Land Use Plan for the San Luis Obispo County Regional Airport*. Therefore, the Project would not expose people working on the Project site to safety hazards associated with aircraft.

MITIGATION MEASURES

No mitigation is required.

4.8.f For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The Rancho San Simeon Airport is located approximately one mile northwest of the Project site. Operating and maintaining the equipment would not require full time staff onsite, since the AWTP would operate automatically with no operators onsite. Up to two employees would visit the site daily to visually inspect and maintain the AWTP. Therefore, the Project would not expose people working on the Project site to safety hazards associated with aircraft.

MITIGATION MEASURES

No mitigation is required.

4.8.g Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. San Simeon - Monterey Creek Road and Van Gordon Creek Road, which form the Project site's northern and western boundaries, are remote rural roads that do not form part of an emergency evacuation plan. Additionally, the proposed water facilities would be located entirely within the existing water facilities site. Therefore, the Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

MITIGATION MEASURES

No mitigation is required.

4.8.h Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact. According to FRAP's Fire Hazard Severity Zones in SRA (State Responsibility Area) Map, the Project site is located in a "Moderate" fire hazard zone. Additionally, according to the County's Natural Hazard Disclosure (Fire) Map, the Project site is within a "wildland area[s] that may contain substantial forest fire risks and hazards."

Operating and maintaining the equipment would not require full time staff onsite, since the AWTP would operate automatically with no operators onsite. Up to two employees would visit the site daily to visually inspect and maintain the AWTP. The Project could expose structures to a significant risk involving wildland fires. The California Department of Forestry (CDF) and Fire Protection provides fire protection for State Responsibility Areas and, as the

County Fire Department, protects most unincorporated areas within the County. The Project would be subject to review by CDF/County Fire, which has an inspection process in place to ensure compliance with Fire and Safety Codes. Therefore, given the nature and scope of the proposed water facilities, and since they would be subject to review by CDF/County Fire, the Project would result in a less than significant impact involving the exposure of people or structures to a significant risk involving wildland fires.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

4.9 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?			✓	
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			✓	
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			✓	
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			✓	
f. Otherwise substantially degrade water quality?			✓	
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			✓	
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				✓
j. Inundation by seiche, tsunami, or mudflow?				✓

REGULATORY FRAMEWORK

As part of Clean Water Act § 402, the U.S. Environmental Protection Agency (EPA) promulgated regulations under the National Pollution Discharge Elimination System (NPDES) program to control direct storm water discharges for construction activities disturbing one acre or more of land. In California, the State Water Resources Control Board (SWRCB) administers the NPDES permitting program and is responsible for developing NPDES permitting requirements. The NPDES program regulates industrial pollutant discharges, which include construction activities. The SWRCB works in coordination with the Regional Water Quality Control Boards (RWQCB) to preserve, protect, enhance, and restore water quality. The Project site is within jurisdiction of the Central Coast RWQCB (CCRWQCB).

Construction Activities

Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ, as administered through the SWRCB and associated RWQCBs. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. To obtain coverage for discharges under the General Construction Permit, dischargers are required to electronically file the Permit Registration Documents (PRDs), which include a Notice of Intent (NOI), Storm Water Pollution Prevention Plan (SWPPP), and other compliance related documents required by the General Permit and mail the appropriate permit fee to the State Water Board.

The Construction General Permit requires the development and implementation of a SWPPP. The SWPPP is required to include a site map(s), which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP is required to list Best Management Practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment, and other requirements. Section XIV of the Construction General Permit describes the elements a SWPPP must contain.

Project Operations

Pursuant to California Water Code Section 13260, a person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system, is required to file with the appropriate RWQCB a report of the [waste] discharge (ROWD), containing the information that may be required by the RWQCB. Thus, any activities that involve discharges such as those to land, groundwater, or from diffused sources, are required to file a ROWD. The primary objective of a ROWD is to provide the technical information required by California Code of Regulations (CCR), Title 27, Division 2, *Solid Waste*, in support of a Waste Discharge Requirements (WDRs) Permit to protect California's surface, coastal, or ground waters (Water of the State). The WDR Permit is federally required under the Clean Water Act (CWA) and in California, the SWRCB and nine RWQCBs are responsible for implementation of WDR permits.

IMPACT ANALYSIS

4.9.a Violate any water quality standards or waste discharge requirements?

4.9.e 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?

4.9.f Otherwise substantially degrade water quality?

Less Than Significant Impact. San Simeon Creek and Van Gordon Creek traverse the southeastern and western portions of the Project site, respectively. Engineering TM Figure 2-9, *Brine Pond Section*, shows the existing evaporation pond.

The proposed emergency water Project is described in detail in Section 2.4, *Project Characteristics*. The Project's source water is the San Simeon Creek aquifer from existing Well 9P7. The extracted groundwater would be transferred to the proposed AWTP that would treat brackish water to produce potable water. To meet California

Department of Public Health (DPH) and Regional Water Quality Control Board (RWQCB) regulations, the treated AWTP product water would be re-introduced/pumped for injection into the groundwater basin so that it could then be pumped by the existing San Simeon well field. To inject the product water into the basin, a new potable water recharge injection well (RIW) is proposed at the existing potable water well-field. A stream of the AWTP product water would be pumped for discharge into the San Simeon creek via three injection wells (LIWs), in order to avoid potential impacts to the creek and downstream lagoon area. As an option to the three LIWs, the existing Well 9P7 discharge pipeline and discharge structure may be used to discharge directly into Van Gordon Creek or San Simeon Creek adjacent to the AWTP. The AWTP generated waste stream (brine) would be discharged through a pipeline from the AWTP to the existing Van Gordon pond, which would be lined with a primary and secondary impermeable liner and leak detection system. Mechanical spray evaporators are proposed to aid with brine evaporation in the lined pond. The Project would be capable of generating 400 gallons per minute (gpm) of new water, out of which 300 gpm would be used for emergency water supply to Cambria and 100 gpm would be used for habitat enhancement in the San Simeon Creek fresh water lagoons.

Short-Term Construction Impacts

Activities during the Project's construction phase include clearing, grading, and disturbances to the ground, such as stockpiling and excavation, which would result in short-term impacts to water quality. Dischargers whose projects disturb one or more acres of soil are required to obtain coverage under the General Construction Permit. The Project would disturb more than one acre, thus, is subject to compliance with the General Construction Permit requirements, as described above. Given the limited amount of ground disturbance associated with the Project, of less than 5.0 acres in total, and the timing of construction anticipated to occur during a period of low rainfall, the Project may qualify for a U.S. Environmental Protection Agency Small Construction Erosivity Waiver. Notwithstanding, the Project is subject to compliance with the relevant LCP Policies that address erosion and siltation: Coastal Streams LCP 20 requires that coastal streams and adjoining riparian vegetation be protected; LCP 21 requires evaluation of erosion and runoff concerns for development adjacent to a coastal stream; LCP 23 requires that the RWQCB and the County ensure that the beneficial use of coastal stream waters is protected; LCP 28 requires that a buffer setback zone be established between any new development and the upland edge of riparian habitats; and Hazards LCP 2 requires that new development ensure structural stability while not creating or contributing to erosion. The Project is subject to compliance with CZLUO Chapter 23.05, which establishes standards for the preparation of sites for development and construction activities to protect against soil erosion. Specifically, CZLUO Sections 23.05.022 through 23.05.039 establish standards for grading and excavation activities to protect against erosion and the sedimentation of water courses. CZLUO Section 23.07.174 establishes standards intended to preserve and protect the natural hydrological system and ecological functions of coastal streams. Compliance with the relevant LCP Policies would be achieved through compliance with the NPDES, BCO, and CZLUO. Following compliance with the NPDES, LCP, and CZLUO regulatory requirements, the Project's construction-related impacts to water quality would be less than significant.

Long-Term Operations – LIW Option

A stream of the AWTP product water would be pumped southwest of the AWTP for discharge into the San Simeon Creek via three LIWs. The AWTP generated waste stream (brine) would be evaporated in the existing Van Gordon Reservoir, which would be lined with an impermeable liner system to serve as the evaporation pond for this Project. The primary and secondary liners with leak detection would provide containment of brine to protect soil and groundwater beneath. The brine evaporation would be aided with mechanical spray evaporators.

Pursuant to California Water Code Section 13260, because the Project proposes activities that involve discharges to land and groundwater (e.g., the LIWs and the Van Gordon evaporation pond), the Project is required to file a ROWD with the CCRWQCB. The ROWD would provide the technical information in support of a WDRs Permit, in order to protect nearby surface, coastal, and ground waters. The CCRWQCB would issue the WDR Permit for the LIWs and the Van Gordon evaporation pond. The liquid waste (brine) that would be stored at the Van Gordon Reservoir is classified by the RWQCB as a Special Waste, which prohibits any discharge of this waste material to Waters of the

State in excess of background levels. The ROWD would, at a minimum, identify the Project's expected discharge volumes into the evaporation pond, the expected chemical constituents of the discharge, and the concentrations of those constituents. The constituents identified would consider both the source water from Well 9P7 and from Project operations (e.g., AWTP operations). The ROWD would identify all measures to be implemented to construct a zero discharge facility as required by Title 27. This zero discharge facility would prevent mobilization of any constituents in the brine into nearby creeks during storm events and would include the installation of an impermeable liner, a leachate collection and removal system (LCRS), and a vadose zone monitoring system. The primary liner and textured drain liner materials would be impermeable. The LCRS would include a perforated conductor pipe and trench along the pond bottom terminating into a collection sump. The LCRS would be designed to maintain less than 1.0 foot of head on the secondary liner. The LCRS sump would have a surface entry pipe for monitoring and removal of any accumulated leach.

Long-Term Operations – Direct Discharge Existing Pipeline/Structure Option

As an option to utilizing LIWs, the existing discharge piping and structure of Well 9P7 may be utilized to discharge AWTP product water directly into Van Gordon Creek or San Simeon Creek adjacent to the AWTP. The MF treated side stream water would be conveyed using an existing on-grade laid pipeline to the shallow LIWs.

Currently, the existing 8-inch PVC discharge pipeline and surface discharge structure are used to discharge pumped groundwater from existing Well 9P7 to Van Gordon Creek. The existing pipeline is used intermittently when water table at the potable water supply well area drops to 1.0 foot above a monitoring well, which is located between the existing ponds and potable water well field. The pump capacity is approximately 700 gpm. This current discharge is permitted through Waste Discharge Requirements for Cambria Community Services District Wastewater Treatment Plant Order No. 01-100 issued by the CCRWQCB in December 2012. This current Order regulates the discharge of treated wastewater to land. Specifically, effluent from CCSD's WWTP is pumped to the onsite pond system for evaporation. The Order includes Discharge Specifications pertaining to effluent limitations, groundwater limitations, and wastewater quality, among other limitations. Revisions to this existing Order would be required, in order for the proposed Project to use the existing discharge piping and structure to discharge directly into Van Gordon Creek.

In addition to the RWQCB requirements specified above, the Project is subject to compliance with the relevant LCP Policies that address long-term water quality: LCP 1 addresses the preservation of groundwater basins; LCP 2 addresses water extractions, impoundments, and other water resource developments; LCP 16 addresses development adjacent to coastal wetlands; LCP 20 requires that coastal streams and adjoining riparian vegetation be protected; LCP 21 requires evaluation of erosion and runoff concerns for development adjacent to a coastal stream; and LCP 23 requires that the RWQCB and the County ensure that the beneficial use of coastal stream waters is protected. Review of the Project through the established regulatory framework would ensure the ROWD contains the necessary technical information in support of a WDR Permit to protect the nearby surface, coastal, and ground waters (Waters of the State). Compliance with the LCP Policies outlined above would be achieved through compliance with CZLUO and CCRWQCB requirements. Compliance with the established regulatory framework would ensure the Project would result in a less than significant impact involving long-term water quality.

EXISTING REGULATIONS

Local Coastal Program Policies:

Coastal Watersheds

LCP 1 Preservation of Groundwater Basins. The long-term integrity of groundwater basins within the coastal zone shall be protected. The safe yield of the groundwater basin, including return and retained water, shall not be exceeded except as part of a conjunctive use or resource management program which assures that the biological productivity of aquatic habitats are not significantly adversely impacted.

LCP 2 Water Extractions. Extractions, impoundments, and other water resource developments shall obtain all necessary county and/or state permits. All pertinent information on these uses (including water conservation opportunities and impacts on in-stream beneficial uses) will be incorporated into the data base for the Resource Management System and shall be supplemented by all available private and public water resources studies available. Groundwater levels and surface flows shall be maintained to ensure that the quality of coastal waters, wetlands, and streams is sufficient to provide for optimum populations of marine organisms, and for the protection of human health.

Wetlands

LCP 16 Adjacent Development. Development adjacent to coastal wetlands shall be sited and designed to prevent significant impacts to wetlands through noise, sediment or other disturbances. Development shall be located as far away from the wetland as feasible, consistent with other habitat values on the site.

Coastal Streams

LCP 20 Coastal Streams and Riparian Vegetation. Coastal streams and adjoining riparian vegetation are environmentally sensitive habitat areas and the natural hydrological system and ecological function of coastal streams shall be protected and preserved.

LCP 21 Development in or Adjacent to a Coastal Stream. Development adjacent to or within the watershed (that portion within the coastal zone) shall be sited and designed to prevent impacts which would significantly degrade the coastal habitat and shall be compatible with the continuance of such habitat areas. This shall include evaluation of erosion and runoff concerns.

LCP 23 County and State Review of Coastal Stream Projects. The State Water Resources Control Board and the County shall ensure that the beneficial use of coastal stream waters is protected, for projects over which it has jurisdiction. For projects which do not fall under the review of the State Water Resources Control Board, the county (in its review of public works and stream alterations) shall ensure that the quantity and quality surface water discharge from streams and rivers shall be maintained at levels necessary to sustain the functional capacity of streams, wetland, estuaries and lakes.

Hazards

LCP 2 Erosion and Geologic Stability. New development shall ensure structural stability while not creating or contributing to erosion or geological instability.

San Luis Obispo County Building and Construction Ordinance:

In California, construction regulations consist of the California Building Code (CBC) and any additions or modifications to the CBC implemented by the local government. The San Luis Obispo County Building and Construction Ordinance (Title 19 of the San Luis Obispo County Code) (BCO) was established and adopted to protect and promote the public health, safety, and welfare. This ordinance is intended to regulate the design and construction of buildings and structures through basic standards for site preparation, erosion and sedimentation control, construction activities, quality of materials, occupancy classifications, the location and maintenance of buildings and structures and certain equipment associated with buildings and structures.

Coastal Zone Land Use Ordinance Standards:

Chapter 23.05 (Site Development Standards). This Chapter establishes standards for the preparation of sites for development and construction activities, to protect the health, safety and welfare of persons living on or near a project site by protecting against unwarranted or unsafe grading, or soil erosion resulting from grading; by defining appropriate circumstances for tree removal; by providing for adequate drainage and fire protection facilities; and by identifying appropriate standards for other aspects of site development.

Sections 23.05.022 through 23.05.039. Establish standards for grading and excavation activities to minimize hazards to life and property; protect against erosion and the sedimentation of water courses; and protect the safety, use and stability of public rights-of-way and drainage channels. Additional standards for grading within a Sensitive Resource Area are in Sections 23.07.160 et seq.[1]

Section 23.07.174 (Streams and Riparian Vegetation). Coastal streams and adjacent riparian areas are environmentally sensitive habitats. The provisions of this section are intended to preserve and protect the natural hydrological system and ecological functions of coastal streams.

a. Development adjacent to a coastal stream. Development adjacent to a coastal stream shall be sited and designed to protect the habitat and shall be compatible with the continuance of such habitat.

MITIGATION MEASURES

No mitigation is required.

4.9.b Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. All of Cambria's potable water is supplied from groundwater wells in the San Simeon and Santa Rosa Creek aquifers. The San Simeon and Santa Rosa aquifers are relatively shallow and porous, with the groundwater levels typically recharged every year during the rainy season. With pumping, groundwater levels generally exhibit a consistent pattern of high levels during the wet season, steady decline during the dry season, and rapid rise when the wet season resumes.

To minimize potable groundwater losses at the aquifer and ocean interface, treated wastewater effluent from CCSD's WWTP is percolated into the San Simeon Creek aquifer downstream from its production wells. This practice also helps prevent saltwater intrusion into the freshwater water aquifer. If the groundwater level drops too far, treated effluent and seawater could migrate toward the water supply wells, deteriorating the water quality and potentially rendering the freshwater non-potable. The CCSD operations maintain a positive differential between the up-gradient groundwater levels at its potable well field and the down-gradient wastewater effluent percolation ponds. During later parts of the summer dry season, and depending upon the prior year's precipitation, the CCSD may occasionally operate with a negative gradient, and will periodically pump groundwater from its percolation pond area, in order to control this differential.

As detailed in Section 2.0, *Project Description*, the Project proposes to withdraw 400 gpm of water through existing Well 9P7, from which 300 gpm would be used for emergency water supply to the Cambria community and 100 gpm would be reinjected to avoid potential impacts to the San Simeon Creek and down gradient fresh water lagoon.

[1] SRAs are addressed in CZLUO Section 23.07.170- not 23.07.160; see Section 4.4, *Biological Resources*.

The Cambria Emergency Water Supply Project San Simeon Creek Basin Groundwater Modeling Report (GMR) (CDM Smith, May 14, 2014) was prepared to support evaluation of the basin water management alternatives to develop additional water supplies for CCSD to meet the emergency conditions; see Appendix D, *Groundwater Modeling Report*. The analysis of alternatives presented in the report compared modeled residence times for recharged water with regulatory requirements for indirect potable reuse. In addition, the potential impacts of the emergency water supply alternatives on San Simeon Creek and the fresh water lagoon areas were evaluated to allow for the development of avoidance and mitigation measures.

GMR Section 6.4, *Emergency Alternative 4 (Indirect Potable Reuse)*, addresses an alternative that is designed to maximize recovery of the percolated secondary treated wastewater while maintaining a mound to avoid movement of percolated waste water toward the existing well field; see GMR Figure 6-5. In the absence of this alternative, pumping of the gradient control well 9P7, with discharge of fresh water to the lagoon would be required in order to avoid inducing flow of secondary treated effluent from the percolation pond area back toward the existing well field. This would result in a significant loss of fresh water resource in the groundwater basin, since losses to the ocean would increase. Emergency Alternative 4 operations are generally consistent with the proposed Project's operations; see GMR page 6-2. The GSR provides a conservative assessment that assumes the emergency operations would continue for over one year, assuming that no significant runoff occurs in San Simeon Creek. Since this alternative met the selection criteria, detailed simulation results are presented in the GMR.

GMR Figure 6-13 shows the simulated water level after one year of operations during which time no runoff was assumed, illustrating the mounding at the recharge well with radial flow along the aquifer extent both toward the CCSD supply wells and toward the percolation ponds. A cone of depression develops around well 9P7 that extends to the downgradient area beneath the fresh water lagoon. The decrease in groundwater levels adjacent to the fresh water lagoon will increase seepage from the lagoon to groundwater in the eastern portion of the lagoon. During typical climatic conditions, water levels in the groundwater basin remain high enough that groundwater discharges to the lagoon, however, during simulated emergency operations, this groundwater discharge to the lagoon will no longer occur.

In order to maintain water in the fresh water lagoon, the Project proposes to reinject 100 gpm of extracted water into the aquifer adjacent to the eastern extent of the lagoon. This Project design feature was simulated and assessed in the model. GMR Figure 6-15 shows the simulated shallow water table adjacent to the fresh water lagoon and indicates that for an extended drought condition, the injection wells may not be able to maintain a water level that would sustain groundwater discharge to the lagoon. The area of the lagoon under typical conditions is approximately 4.0 acres, based on aerial photographs. Direct discharge of 100 gpm to the lagoon would correspond to adding a depth of 0.11 feet per day (ft/day) over the entire area of the lagoon. Recent monitoring of tidal fluctuations in water levels in the lagoon indicate that a diurnal amplitude of approximately 1.5 inches is observed, which indicates that the sediments in the lagoon limit connectivity with groundwater, so seepage losses are expected to be less than the 0.11 ft/day that would be added.

GMR Figure 6-16 shows the simulated basin storage depletion and ocean inflows and outflows on a monthly basis. The simulation indicates that the majority of the production from the CCSD well field, Well 9P7, and existing irrigation wells comes from reductions in storage in the aquifer, resulting in water level declines. In the absence of recharge, water will drain from the upper portion of the basin toward pumping wells and the ocean. During ten months of simulated emergency operations, a net outflow of fresh water to the ocean would continue to occur, with a reversal of flow indicating movement of ocean water back into the aquifer after this time. This salt water wedge would advance in the deeper portion of the aquifer due to the density difference between fresh water and saline ocean water. Simulations indicate that during the one year operation period that the salt water wedge would not advance to the Well 9P7 location. GMR Figure 6-17 shows total dissolved solids (TDS) profile from well samples, showing the increase in TDS that occurs toward the ocean. This profile indicates that only limited salt water intrusion in the lower portion of the aquifer occurs, since there is a net outflow of fresh water due to current operations of the treated wastewater percolation ponds. GMR Figure 6-18 shows the simulated TDS at Well 9P7, which indicates that TDS will

not increase due to the pumping at this location during the duration that was simulated. This is due to continued flow of groundwater from the upper basin and recirculation of very low TDS water that is injected between the percolation ponds and the CCSD well field.

As previously mentioned, emergency water supply Alternative 4 is generally consistent with the proposed Project operations. Based on the modeling simulations, the GMR concludes that emergency water supply Alternative 4 would be feasible, although there would be significant recirculation of the highly treated water. A key element of this feasibility is the use of an injection well between the CCSD well field and the percolation ponds. Use of this approach would allow maintenance of a gradient that would protect the well field from impacts from the percolated effluent and brackish water present in the lower basin. Emergency water supply Alternative 4 increases sustainability of the water supply under the current drought conditions, since the previously lost percolated effluent is captured, highly treated, and produced for water supply after appropriate residence time in the aquifer. Pumping from Well 9P7 would also be beneficially used after treatment to protect the CCSD well field from treated wastewater and brackish water in the lower part of the basin through maintenance of a mound. Without implementation of this alternative, gradient control pumping at Well 9P7 and its discharge would result in significant losses of fresh water in the basin and greatly reduced production rates from the CCSD well field. The brackish water that would be pumped from the basin for treatment would be diluted with percolated secondary effluent and a portion of highly treated water that is injected would maintain a protective gradient between the percolation ponds and the potable water well field. Use of the injection well to create a mound near the freshwater lagoon would have limited benefits later in the season, as basin water levels are drawn down below the channel invert, precluding discharge of the mounded groundwater to the lagoon. Mitigation would be more effective by discharging the treated water directly in the open channel, as proposed by the Project's option to using the three LIWs, which is to use the existing Well 9P7 discharge pipeline and discharge structure to discharge directly into Van Gordon Creek adjacent to the AWTP. Overall, the GMR's modeling analysis indicates that enhancing water supplies for both emergency and long-term conditions is feasible in the San Simeon Creek Basin.

The Project is subject to compliance with the relevant LCP Policies that address groundwater resources: LCP 1 addresses the preservation of groundwater basins; LCP 2 addresses water extractions, impoundments, and other water resource developments; and LCP 20 requires that coastal streams and adjoining riparian vegetation be protected. Review of the Project through the established regulatory framework would ensure the ROWD contains the necessary technical information in support of a WDR Permit to protect the nearby surface, coastal, and ground waters (Waters of the State). As shown through the GSR's findings, the Project would comply with the LCP Policies outlined above. The Project would enhance recharge to the groundwater basin, since fresh water that is currently lost to the ocean from operation of the treated waste water percolation ponds would be captured, highly treated, and recharged to the basin to maintain CCSD well production and protective hydraulic gradients. The Project would also result in a lesser decline in groundwater basin water levels than continuing current operations, since water from well 9P7 would be beneficially used for recharge, rather than lost as discharge to the ocean.

Overall, the Project includes provisions for the replenishment of extracted groundwater to avoid a substantial drop in production of pre-existing nearby wells; hence, the Project would result in a less than significant impact involving groundwater supplies and no mitigation is required.[2]

The Project proposes to withdraw 400 gpm of water through existing Well 9P7 (plus sufficient volume to make up for brines generated in the treatment process). Reinjection of 300 gpm of highly treated water for indirect potable reuse after appropriate residence time in the aquifer and gradient control would occur at the proposed recharge well, while 100 gpm would be discharged to San Simeon Creek to support the fresh water lagoon. The Project would result in a less than significant impact regarding depletion of existing groundwater supplies, given the current severe drought

[2] As addressed in Section 4.4, Mitigation Measure BIO-6 proposes an Adaptive Management Program (AMP) to address potential impacts to biological resources (riparian habitat/species) in the San Simeon Creek Lagoon, San Simeon Creek, and Van Gordon Creek. Mitigation Measure BIO-6 provides for an increase in the proposed rate of groundwater replenishment (i.e., increase from 100 gpm to 150 gpm), if/as necessary to avoid significant impacts to those biological resources.

condition. The CCSD is proposing the Cambria Emergency Water Supply Project in response to the current severe drought condition that has placed the water supply for Cambria community in immediate jeopardy. As a result of this condition, the CCSD Board of Directors declared on January 30, 2014 a Stage 3 Water Shortage Emergency for Cambria, the most stringent of three water shortage levels. Reflecting the severity of the severe drought conditions experienced in Cambria community as well as the rest of the state of California, on January 17, 2014, Governor Jerry Brown declared a drought emergency for the State of California, and on March 11, 2014, the San Luis Obispo (SLO) County Board of Supervisors proclaimed a local emergency due to the County's drought conditions. The Governor issued a subsequent drought declaration on April 24, 2014. CCSD anticipates continued water shortages and drought conditions over the course of the next 20 years, as a result of climate change impacts, and anticipates the likely need for use of the emergency water supply facilities in 8 to 10 of the next 20 years. Moreover, the Project does not involve construction of new homes or land uses that would create a demand for water. Therefore, the Project would not substantially deplete groundwater supplies.

EXISTING REGULATIONS

Local Coastal Program Policies: See LCP 1, LCP 2, and LCP 20 above.

MITIGATION MEASURES

No mitigation is required.

4.9.c Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

4.9.d Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact. San Simeon Creek and Van Gordon Creek traverse the southeastern and western portions of the property, respectively. Engineering TM Figure 2-9, *Brine Pond Section*, shows the existing Van Gordon Reservoir.

The Project does not involve development of vast impervious surface areas (such as roadways, rooftops, or parking lots) that would increase runoff or substantially alter the existing drainage patterns. A nominal increase in onsite impervious surface areas would occur due to the proposed AWTP. As shown on Exhibit 2-6, *Project Overview*, the water facilities are proposed outside of the creek corridors. Additionally, although the Project proposes to rehabilitate/modify the existing Van Gordon Reservoir for disposal of the RO brine (by adding impermeable liners, a leachate collection/removal system (LCRS), a vadose zone monitoring system, and mechanical spray evaporators), only nominal earthwork would be required. Exhibit 9, *Brine Pond Plan*, shows the proposed Van Gordon percolation pond. The Project proposes to: demolish/regrade the existing spillway along the pond's southern berm to provide a uniform top of slope elevation around the pond; and grade the bottom of the pond for installation of the proposed liners, LCRS, and monitoring system. These proposed improvements would not substantially alter the Project site's drainage patterns or alter the course of San Simeon or Van Gordon Creeks. Further, since the Project is designated Flood Hazard (FH) Combining Designation, the Project is subject to compliance with LCP Policy 3, which requires that the County conduct a detailed review of development; see also Response 4.9.h below. The Project would also be subject to compliance with CZLUO Chapter 23.05, which establishes standards for the preparation of sites, in order to provide adequate drainage, among other objectives. Compliance with CZLUO Section 23.07.064, which requires preparation and approval of a Drainage Plan where any portion of a site is located within an FH Combining Designation, would also be required. Following compliance with the LCP and CZLUO, the Project would result in a less than significant impact regarding alterations to the Project site's existing drainage pattern.

EXISTING REGULATIONS

Local Coastal Program Policies:

LCP 3 Development Review in Hazard Areas. The County shall require a detailed review of development proposed within the geologic study area and flood hazard combining designations as indicated on the Land Use Element maps for the coastal zone. The review shall be performed by a qualified registered and/or certified engineering geologist and shall be adequately detailed to provide recommendations and conclusions consistent with this plan. Residential, commercial and industrial development shall be prohibited within the l00 year floodplain (one percent (1%) chance of inundation in any year) as delineated in the Flood Hazard combining designation except for those areas within an urban reserve line.

Coastal Zone Land Use Ordinance Standards:

Chapter 23.05 (Site Development Standards). This Chapter establishes standards for the preparation of sites for development and construction activities, to protect the health, safety and welfare of persons living on or near a project site by protecting against unwarranted or unsafe grading, or soil erosion resulting from grading; by defining appropriate circumstances for tree removal; by providing for adequate drainage and fire protection facilities; and by identifying appropriate standards for other aspects of site development.

Section 23.07.064 - Flood Hazard Area Permit and Processing Requirements. Drainage Plan approval is required where any portion of the proposed site is located within a Flood Hazard combining designation, in addition to all other permits required by this title, state, and federal law.

MITIGATION MEASURES

No mitigation is required.

4.9.g Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

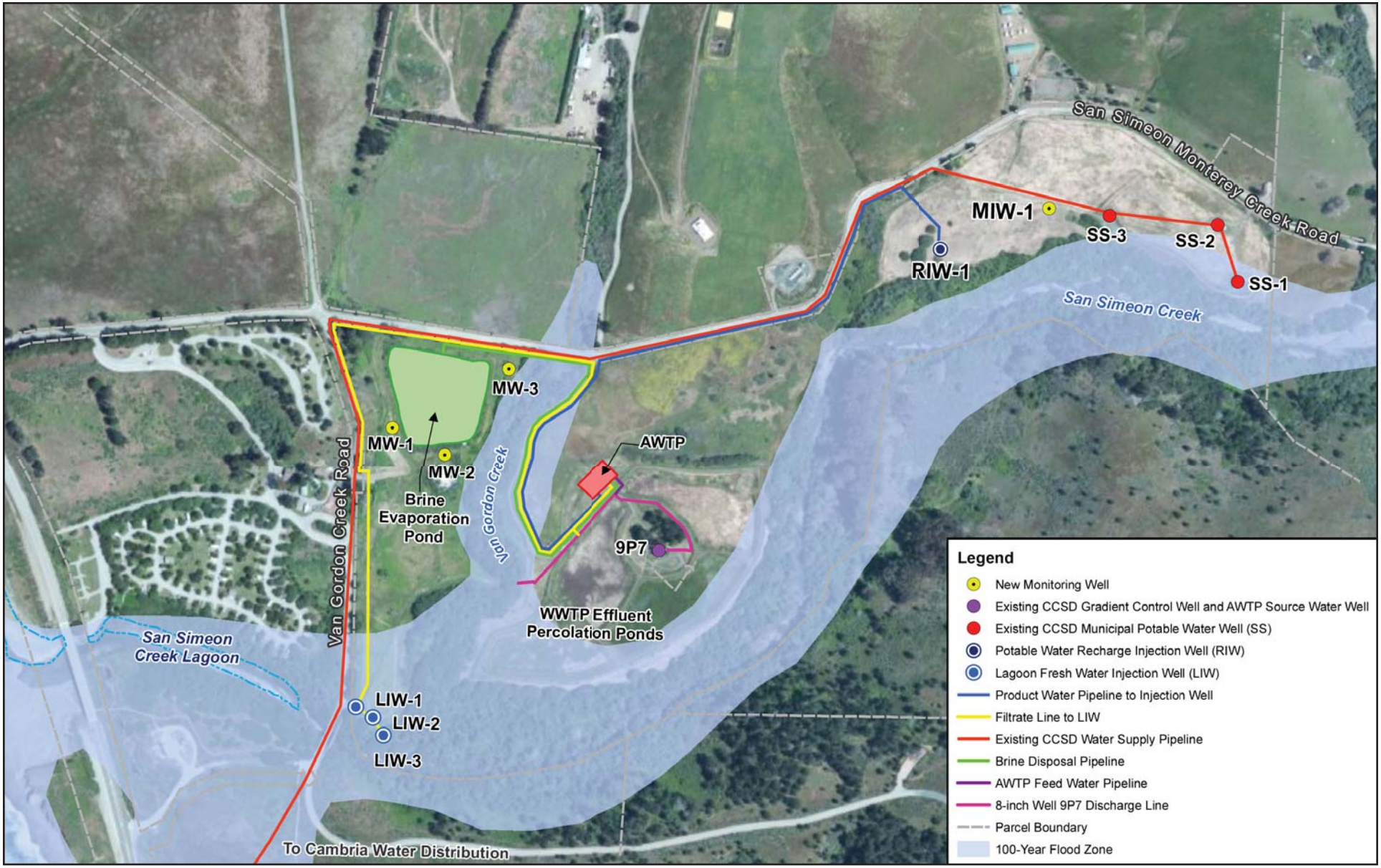
No Impact. The Project involves construction and operation of emergency water facilities- no housing is proposed. Therefore, the Project would not place housing within a 100-year flood hazard area.

MITIGATION MEASURES

No mitigation is required.

4.9.h Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less Than Significant Impact. General Plan Safety Element Map 5, *FEMA-FIRM Flood Hazard Map*, which depicts the unincorporated County areas subject to inundation from a 100-year storm event, indicates portions of the Project site are located within a flood hazard area. The Project site is designated Flood Hazard (FH) Combining Designation; see the Coastal Zone North Coast Planning Area Rural Combining Designation Map. Exhibit 4.9-1, *FEMA 100-year Flood Zones*, shows the onsite flood hazards zones and indicates proposed Well LIW and segments of the brine disposal pipeline and product water pipeline to injection wells are within a flood hazard zone. Given their scope and nature, it is not anticipated the proposed water facilities would impede or redirect flood flows. The Project would be subject to compliance with the relevant LCP Policies that address flood hazards: LCP 1 requires that new development be designed to minimize risks to property subject to flood conditions; and LCP 3 requires that the



Source: CDM Smith, June 2014.

NOT TO SCALE

RBF CONSULTING A Baker Company

06/14 • JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

FEMA 100-Year Flood Zones

Exhibit 4.9-1

County conduct a detailed review of development proposed within FH areas. Further, pursuant to CZLUO Section 23.07.062, all uses proposed within a FH Combining Designation are subject to standards specified in CZLUO Sections 23.07.064 through 23.07.066. Namely, CZLUO Section 23.07.064 requires Drainage Plan approval where any portion of the site is within a FH Combining Designation, and CZLUO Section requires that the development be constructed consistent with the standards set forth in CZLUO Section 23.07.066, which specifically address both general and storage/processing construction standards and certification of compliance with elevation requirements.

Therefore, following compliance with CZLUO requirements, which include preparation of a Drainage Plan, the Project would result in a less than significant impact involving the placement of structures within a flood hazard area.

EXISTING REGULATIONS

Local Coastal Program Policies:

Hazards

LCP 1 New Development. All new development proposed within areas subject to natural hazards from geologic or flood conditions (including beach erosion) shall be located and designed to minimize risks to human life and property……

LCP 3 Development Review in Hazard Areas. The County shall require a detailed review of development proposed within the geologic study area and flood hazard combining designations as indicated on the Land Use Element maps for the coastal zone. The review shall be performed by a qualified registered and/or certified engineering geologist and shall be adequately detailed to provide recommendations and conclusions consistent with this plan. Residential, commercial and industrial development shall be prohibited within the l00 year floodplain (one percent (1%) chance of inundation in any year) as delineated in the Flood Hazard combining designation except for those areas within an urban reserve line.

CZLUO Standards:

Section 23.07.060 - Flood Hazard Area (FH). The Flood Hazard combining designation is applied to areas where terrain characteristics would present new developments and their users with potential hazards to life and property from potential inundation by a 100-year frequency flood or within coastal high hazard areas. These standards are also intended to minimize the effects of development on drainage ways and watercourses.

Section 23.07.062 - Applicability of Flood Hazard Standards. All uses proposed within a Flood Hazard combining designation are subject to the standards of Sections 23.07.064 through 23.07.066, except:

a. Temporary uses: With the approval of the Director of Public Works, the of Planning and Building Director may authorize construction or placement of a temporary structure or use within a Flood Hazard area pursuant to the required land use permit without meeting these standards, provided that the structure or use will not be in place from October 15, to April 15.

b. Emergency work: Emergency work may be undertaken where necessary to preserve life or property. Within 48 hours after commencement of such work, the Director of Public Works is to be notified and an application filed with the Department of Planning and Building in compliance with the provisions of Section 23.07.064.

Section 23.07.064 - Flood Hazard Area Permit and Processing Requirements. Drainage Plan approval is required where any portion of the proposed site is located within a Flood Hazard combining designation, in addition to all other permits required by this title, state, and federal law.

Section 23.07.065 - General Hazard Avoidance:

a. New Development in Flood Hazard Areas. New structural development, including expansions, additions and improvements to existing development, shall be located outside of the flood hazard areas to the maximum extent feasible. All new structural development located in a flood hazard areas, including expansions, additions, improvements, and repairs to existing development, shall be constructed consistent with the standards set forth in Section 23.07.066.

Section 23.07.066 - Construction Standards:

a. Construction, general: See Standards 1 – 12.

b. Storage and Processing: The storage or processing of materials that in time of flooding are buoyant, flammable, or explosive; that could be injurious to human, animal, or plant life; or that may unduly affect the capacity of the floodway or unduly increase flood heights is not permitted. Storage of other material or equipment may be allowed if not subject to major damage by floods and if firmly anchored to prevent flotation, or if readily removable from the area within the time available after flood warning.

d. Certification of Compliance. The following certifications shall be filed with the Building Official prior to final building inspection:

(1) Upon completion of any structure within a flood hazard combining designation, compliance with elevation requirements shall be certified by a registered civil engineer or licensed land surveyor. Such certification shall include as a minimum the elevation of the lowest floor. If the structure has been flood-proofed in conformance with Section 23.07.066a(11) above, the certification shall include the elevation to which the structure has been flood-proofed. Elevations shall be based on the National Geodetic Vertical Datum of 1929.

(2) Where flood-proofing is used, a registered civil engineer or architect shall certify that the flood-proofing methods are adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the 100-year flood.

MITIGATION MEASURES

No mitigation is required.

4.9.i Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. Operating and maintaining the equipment would not require full time staff onsite, since the AWTP would operate automatically. Additionally, there are no levees or dams located in the Project's vicinity. Therefore, the Project would not expose people or structures to a significant risk involving flooding as a result of the failure of a levee or dam.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

4.10 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. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			✓	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓

IMPACT ANALYSIS

4.10.a Physically divide an established community?

No Impact. The Project involves construction and operation of water facilities entirely within an existing CCSD public utility site. Also, the Project site is located in a rural area; there are no established communities located in the Project vicinity. Therefore, the Project would not physically divide an established community.

MITIGATION MEASURES

No mitigation is required.

4.10.b Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The Project is located within jurisdiction of the County of San Luis Obispo (County) and it's Coastal Zone. Therefore, the Project is subject to County Land Use Element and Coastal Act conditions. In the Coastal Zone, the County's Land Use Element is made up of four parts: Official Maps; Framework for Planning; Area Plan; and Coastal Plan Policies. The County's Local Coastal Program (LCP) is part of the County General Plan and Zoning Ordinance, and applies to those areas lying within the Coastal Zone. The County's LCP also functions as the mandatory General Plan Circulation and Land Use Elements. The Coastal Zone Land Use Ordinance (CZLUO) supplements the Coastal Zone Land Use Element (LCP) and provides provisions typically found in zoning ordinances (i.e., permit and appeal requirements, site design, development and operational standards, and enforcement provisions).

OFFICIAL MAPS

The Project site is located in the North Coast (NC) Planning Area. The *Coastal Zone North Coast Planning Area Rural Land Use Category Map*[1] separates the NC Planning Area into land use categories, which determine the

[1] County of San Luis Obispo Website, http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download_Center/Land_Use_Maps.htm, Accessed May 15, 2014.

allowable uses for every piece of property, including the maximum density and intensity of potential development. As shown on the Land Use Category Map, the Project site is designated Agriculture.

The *Coastal Zone North Coast Planning Area Rural Combining Designation Map*[2] assigns Combining Designations to NC areas containing hazards, sensitive resource areas, environmentally sensitive habitat areas, historic and archaeologically sensitive areas, and public facilities. As shown on the Combining Designation Map, portions of the Project site are assigned the following Combining Designations:

- Geologic Study Area (GSA);
- San Simeon Creek Flood Hazard (FH);
- Sensitive Resource Area (SRA);
- Environmentally Sensitive Habitat, Terrestrial Habitat (ESH-TH); and
- Environmentally Sensitive Habitat, Coastal Creek (ESH-CC).

Additionally, the Project site (and all of the NC Planning Area) is assigned Local Coastal Program (LCP) Combining Designation.

FRAMEWORK FOR PLANNING

Framework for Planning serves as an organizational document, linking land use, resource management, and circulation. Additionally, the Framework for Planning contains definitions of the land use categories and the land uses for the County's Coastal Zone.

Framework for Planning Chapter 6, *Land Use Categories & Allowable Uses*, addresses land use categories. The land use categories identify areas for similar and compatible land uses, and provide a basic order for development, while allowing a range of uses. As noted above, the Land Use Category Map indicates the Project site is designated Agriculture (AG). The following is noted regarding the AG category:

> *In many instances, coastal agricultural lands, such as areas for cattle grazing and row crops, display a rural and open character, and therefore have open space values. As used in this discussion, 'open space' is meant in the context of the Williamson Act.*[3]

The Project site contains CCSD water facilities, thus, is consistent with the "Public Utility Facilities [J5]" land use definition, as follows:

> *Public Utility Facilities [J5]: Fixed-base structures and facilities serving as junction points for transferring utility services from one transmission voltage to another or to local distribution and service voltages. These uses include any of the following facilities: electrical substations and switching stations; telephone switching facilities; natural gas regulating and distribution facilities; public water system wells, treatment plants and storage; and community wastewater treatment plants, settling ponds and disposal fields.*

Per Table O of the *Coastal Zone Framework for Planning*, Public Utility Facilities on sites designated AG category are "S-13" status. The S-13 status indicates the land use is a special use, allowable subject to special standards and/or processing requirements, unless otherwise limited by a specific planning area standard. The special standards that apply to Public Utility Facilities are outlined CZLUO Section 23.08.280, *Transportation, Utilities, and Communication*; refer to the *CZLUO Chapter 23.08, Special (S) Uses*, Section below. Additionally, CZLUO Section 23.04.050, *Non-Agricultural Uses in the Agriculture Land Use Category*, establishes permit requirements and standards for non-agricultural uses in the Agriculture category; refer to the *CZLUO Section 23.04.050, Non-Agricultural Uses in the Agriculture Land Use Category*, Section below.

[2] Ibid.
[3] As concluded in Response 4.2.b, the Project site is not under a Williamson Act contract.

NORTH COAST AREA PLAN

Key provisions found in Area Plans are land use maps, programs, and standards guiding development. The County's Coastal Zone is divided into four planning areas- the Project site is located in the NC Planning Area, within the Rural North Coast (RNC) community. The NC Planning Area is addressed in the North Coast Area Plan (NCAP).

Combining Designations

NCAP Chapter 6 addresses Combining Designations, which are special overlay land use categories applied in areas of the County with potentially hazardous conditions or significant natural resources. In these areas more detailed project review is needed, in order to avoid or minimize adverse environmental impacts, or effects of hazardous conditions on proposed projects. The Combining Designations assigned to the Project site are as follows:

- *Geologic Study Area (GSA)*: The Geologic Study (GSA) designation includes moderate to high landslide risk areas and moderate to high liquefaction hazard areas, as identified in the Seismic Safety Element. Seismic Safety Element Map 4, *Landslide Hazards*, indicates that the Project site contains portions with "High Potential" for landslides. Given this High Potential for landslides, the Project site is designated GSA. Areas of steep slopes require evaluations for engineering problems associated with building. Refer to Section 4.6, *Geology and Soils*.

- *Flood Hazard (FH):* The FH Combining designation is applied to areas where terrain characteristics would present new developments and their users with potential hazards to life and property from potential inundation by a 100-year frequency flood or within coastal high hazard areas. San Simeon Creek is one of seven creeks identified by the NCAP as areas of potential flood hazards where development and fill should be avoided. Maintenance of the creek habitats is essential to protect many coastal resources. These creeks support a number of declining species. Refer to Section 4.9, *Hydrology and Water Quality*.

- *Sensitive Resource Area (SRA):* The SRA Combining Designation is applied to identify areas with special environmental qualities, or areas containing unique or endangered vegetation or habitat resources. According to the NCAP, the entire shoreline is a valuable scenic and natural resource that must be protected from excessive and unsightly development. The entire NC Planning Area also sustains important marine habitats and provides for a variety of passive recreation uses. The SRA Combining Designation applied to the Project site to recognize the onsite scenic resources (creek corridors) and adjacent Monterey pine forest and State Park foot trail (the forest and trail do not extend onto the site's southwestern corner, where the SRA Combining Designation is applied). Refer to Section 4.1, *Aesthetics*, and Section 4.4, *Biological Resources*.

- *Environmentally Sensitive Habitat, Terrestrial Habitat (ESH-TH):* The Monterey Pine Forests SRA-TH Combining Designation involves the Monterey pine forests that cover most of the Cambria Urban Area, and which are present south of the Project site (the forest does not extend onto the site's southwestern corner, where the ESH-TH Combining Designation is applied). Refer to Section 4.4, *Biological Resources*.

- Environmentally Sensitive Habitat, Coastal Creeks (ESH-CC): According to the NCAP, portions of San Simeon Creek (among other creeks) are anadromous fish streams, which should be protected from impediments to steelhead migration and spawning. Adjacent riparian and wetland areas provide important wildlife habitat. Ground and surface waters are linked, and maintenance of the creek habitats is essential to protect many coastal resources. These creeks support a number of declining species. Refer to Section 4.4, *Biological Resources*, and Section 4.9, *Hydrology and Water Quality*.

- *Local Coastal Program (LCP):* The Coastal Zone encompasses all lands within the NC Planning Area. The LCP Combining Designation identifies specific programs to ensure that access to the shoreline is provided and that coastal resources are protected in accordance with the LCP Policies; refer to the *Local Coastal Program Policy Document* Section below.

Planning Area Standards

NCAP Chapter 7 contains Planning Area Standards for the NC Planning Area that are mandatory requirements for development. Planning Area Standards apply to the planning and development of new land uses, and must be satisfied before a new land use permit is approved. The land use-related Areawide, Combining Designation, Land Use Standards relative to the Project are discussed below.

Areawide (AW) Standards

AW standards apply to all RNC lands. The following land-use related AW standards apply to the Project:

Site Design and Building Construction

AW-6 Site Selection. Primary site selection for new development shall be locations not visible from Highway 1 as follows:

a. Sites shall be selected where hills and slopes would shield development unless no alternative location exists or the new development provides visitor-serving facilities.

b. New development shall be located so that no portion of a structure extends above the highest horizon line of ridgelines as seen from Highway 1.

Combining Designation (CD) Standards

CD Standards apply to all RNC lands with LCP and SRA Combining Designations. There are no land use-related CD Standards that apply to the Project.

Land Use (LU) Standards

LU Standards apply to specific land use categories. As previously noted, the Project site is designated Agriculture (AG). There are no land use-related LU Standards that apply to the Project.

Cambria Urban Area Community-Wide Standard 4D

The County issued May 15, 2014 Emergency CDP authorized construction and operation of the emergency water supply project, subject to certain conditions. Specifically, Emergency CDP Condition 6 specifies that the "regular permit will be subject to all applicable provisions of the California Coastal Act and the Local Coastal Program, including the specific requirements for desalination facilities in the North Coast Area Plan Community Wide Policy 4D....." It is assumed Condition 6 is referring to Cambria Urban Area (Community Wide) Standard 4D (NCAP page 7-30). However, CW Standard 4D is found in NCAP Chapter 7 Section B, *Cambria Urban Area Standards*. NCAP Chapter 7 Section B contains "standards that apply only to land within the unincorporated urban area of Cambria" (NCAP page 7-2). However, the Project site is located within the NCAP's rural area, which "includes all those lands outside the Cambria urban reserve line and the San Simeon Acres village reserve line" (NCAP page 4-4). The Planning Area Standards relevant to NCAP's rural area, and thus the Project site, are found in NCAP Chapter 7 Section A, *Rural Area Standards*. NCAP Chapter 7 Section A contains "standards that apply only to land within the unincorporated urban area of Cambria" (NCAP page 7-2). The requirements for compliance with CW Standard 4D

would be verified by the County through the Project's development review process; refer also to the *Coastal Zone Land Use Ordinance* Section below.

LOCAL COASTAL PROGRAM POLICY DOCUMENT

The LCP Policy Document is part of the Local Coastal Program and Land Use Element. The LCP provides a more detailed level of policies, programs, and standards to address Coastal Act issues. The following land use-related LCP policies are relevant to the Project:

Environmentally Sensitive Habitats

Environmentally Sensitive Habitat (ESH) areas are settings in which plant or animal life (or their habitats) are rare or especially valuable due to their special role in an ecosystem. The Coastal Act provides protection for these areas and permits only resource-dependent uses within the habitat area. Development adjacent must be sited to avoid impacts. Refer to the *Combining Designations* Section above for a description of the ESH that are present on the Project site.

LCP 1 *Land Uses Within or Adjacent to Environmentally Sensitive Habitats*. New development within or adjacent to locations of environmentally sensitive habitats (within 100 feet unless sites further removed would significantly disrupt the habitat) shall not significantly disrupt the resource. Within an existing resource, only those uses dependent on such resources shall be allowed within the area.

LCP 2 *Permit Requirement*. As a condition of permit approval, the applicant is required to demonstrate that there will be no significant impact on sensitive habitats and that proposed development or activities will be consistent with the biological continuance of the habitat. This shall include an evaluation of the site prepared by a qualified professional which provides: a) the maximum feasible mitigation measures (where appropriate), and b) a program for monitoring and evaluating the effectiveness of mitigation measures where appropriate.

Wetlands

Wetlands help improve the quality and quantity of water, as well as providing important wildlife habitats. Several rare and/or endangered species are found within local coastal wetlands. There are no wetlands located on or immediately adjacent to the Project site. However, the Project proposes to pump a stream of the AWTP product water southwest of the AWTP for discharge into the San Simeon Creek via LIWs, which are proposed just upstream of the fresh water lagoon, approximately 2,500 feet southwest of existing Well 9P7. As an option to the LIWs, the existing Well 9P7 discharge pipeline and discharge structure may be used to discharge directly into Van Gordon Creek adjacent to the AWTP. Refer to Section 4.4, *Biological Resources*.

LCP 16 *Adjacent Development*. Development adjacent to coastal wetlands shall be sited and designed to prevent significant impacts to wetlands through noise, sediment or other disturbances. Development shall be located as far away from the wetland as feasible, consistent with other habitat values on the site.

Coastal Streams

Coastal streams directly affect the coastal environment. They significantly influence flooding, natural ecosystems, sediment transport, agricultural water supply and groundwater recharge within the coastal zone. The San Simeon Creek and Van Gordon Creek traverse the southeastern and western portions of the Project site.

LCP 21 *Development in or Adjacent to a Coastal Stream*. Development adjacent to or within the watershed (that portion within the coastal zone) shall be sited and designed to prevent impacts which would significantly degrade the coastal habitat and shall be compatible with the continuance of such habitat areas. This shall include evaluation of erosion and runoff concerns.

LCP 28 *Buffer Zone for Riparian Habitats*. In rural areas (outside the USL) a buffer setback zone of 100 feet shall be established between any new development (including new agricultural development) and the upland edge of riparian habitats. In urban areas this minimum standard shall be 50 feet except where a lesser buffer is specifically permitted. The buffer zone shall be maintained in natural condition along the periphery of all streams. Permitted uses within the buffer strip shall be limited to passive recreational, educational, or existing nonstructural agricultural developments in accordance with adopted best management practices. Other uses that may be found appropriate are limited to utility lines, pipelines, drainage and flood control facilities, bridges and road approaches to bridges to cross a stream and roads when it can be demonstrated that: 1) alternative routes are infeasible or more environmentally damaging and 2) adverse environmental effects are mitigated to the maximum extent feasible. Lesser setbacks on existing parcels may be permitted if application of the minimum setback standard would render the parcel physically unusable for the principal permitted use. In allowing a reduction in the minimum setbacks, they shall be reduced only to the point at which a principal permitted use (as modified as much as is practical from a design standpoint) can be accommodated.

Terrestrial Environments

Terrestrial environments within the County's coastal zone include unique plant habitats and rare and endangered animal habitats. Refer to the *Combining Designations* Section above for a description of the TH that are present on or adjacent to the Project site.

LCP 29 *Protection of Terrestrial Habitats*. Designated plant and wildlife habitats are environmentally sensitive habitat areas and emphasis for protection should be placed on the entire ecological community. Only uses dependent on the resource shall be permitted within the identified sensitive habitat portion of the site.

Development adjacent to environmentally sensitive habitat areas and holdings of the State Department of Parks and Recreation shall be sited and designed to prevent impacts that would significantly degrade such areas and shall be compatible with the continuance of such habitat areas.

Visual and Scenic Resources

The identification and protection of visual resources within the coastal zone is a critical aspect of planning for long-term change and development within highly scenic coastal regions. The Project site's features that are considered visual resources involve the San Simeon Creek and Van Gordon Creek corridors that traverse the southeastern and western portions of the Project site, respectively. Additional visual resources in the Project's vicinity involve the Monterey pine forest and State Park foot trail situated south of the Project site, between the San Simeon Creek corridor and State Park Washburn Primitive Campground. A minimal portion of the Project site's southwestern corner is designated SRA and ESH-TH to recognize these visual resources, although, the forest and trail do not extend onto the site's southwestern corner.

LCP 2 *Site Selection for New Development*. Permitted development shall be sited so as to protect views to and along the ocean and scenic coastal areas. Wherever possible, site selection for new development is to emphasize locations not visible from major public view corridors. In particular, new development should utilize slope created "pockets" to shield development and minimize visual intrusion.

LCP 4 *New Development in Rural Areas*. New development shall be sited to minimize its visibility from public view corridors. Structures shall be designed (height, bulk, style) to be subordinate to, and blend with, the rural character of the area. New development which cannot be sited outside of public view corridors is to be screened utilizing native vegetation; however, such vegetation, when mature, must also be selected and sited in such a manner as to not obstruct major public views. New land divisions whose only building site would be on a highly visible slope or ridgetop shall be prohibited.

LCP 7 *Preservation of Trees and Native Vegetation*. The location and design of new development shall minimize the need for tree removal.

The Project would be subject to compliance with these aforementioned land use-related LCP Policies, as well as the LCP Policies identified throughout Section 4 of this Initial Study. Compliance with these LCP Policies would be achieved through compliance with the CZLUO; see below.

COASTAL ZONE LAND USE ORDINANCE (CZLUO)

As previously noted, the Project site is located in the County's Coastal Zone. Therefore, the provisions of Title 23 of the San Luis Obispo County Code, *Coastal Zone Land Use Ordinance*, apply to all land use and development activities associated with the Project.

CZLUO Section 23.01.031 (Land Use and Coastal Development Permits Required). Pursuant to this Section, no person shall establish, construct, alter, or replace any use of land, structure, or building without first obtaining all permits required by CZLUO Chapter 23.03 or other applicable section of Title 23, except as otherwise provided by Section 23.01.031. Approval of a land use permit pursuant to Title 23 also constitutes approval of a Coastal Development Permit in compliance with the County's LCP and California Coastal Act. As discussed in Section 2.2, *Background and History*, the County issued an Emergency CDP on May 15, 2014, authorizing construction and operation of the proposed emergency Project, subject to certain conditions. Specifically, Emergency CDP Condition 6 specifies the following:

> *Within 30 days of the date of issuance of this emergency permit, the permittee shall apply for a regular Coastal Development Permit to authorize the emergency project…..*

In compliance with Emergency CDP Condition 6, an application for a regular CDP was submitted to the County on June 13, 2014. This Initial Study was provided as supporting documentation to the CDP application.

CZLUO Section 23.01.033 (Consistency With the Land Use Element and Local Coastal Plan Required). This Section specifies that no new use of land, buildings, division of land, or other development shall be established, and no application for such use, land division, or other permit required pursuant to Title 23 shall be approved, unless the proposed use is determined to be allowable in the land use category where the proposed site is located. When an application is accepted for processing, such application shall not be approved unless:

a. The proposed use is identified as an "A", "S" or "P" use by Table O, Part I of the Land Use Element in the land use category where the site for the proposed use is located;

b. The proposed use or division satisfies the standards of the Land Use Element (Part II) applicable to the specific planning area in which the site is located, including any standards may limit the type of land uses or parcel sizes normally allowable in a given land use category;

c. The proposed use or division satisfies any combining designation planning area standards applied to the site by the Land Use Element (Part II), including any such standards that may limit the type of land uses or parcel sizes normally allowable in a given land use category;

d. The proposed use or division satisfies any policies, programs, and standards contained in the Local Coastal Plan Policy Document; and

e. The proposed use or division satisfies the terms, conditions and other requirements of all implementing regulations adopted as part of the Local Coastal Program including but not limited to any categorical exclusion.

CZLUO Section 23.01.034 (Compliance With Standards Required). This Section specifies that no use of land, buildings, or division of land shall be established and no application for a use of land, buildings, or land division pursuant to County Code Title 21 shall be approved unless the proposed land use, building, or parcels satisfy all applicable requirements of this Code.

CZLUO Chapter 23.04 (Site Design Standards). This Chapter establishes standards for the design and layout of sites for land uses, new developments, and divisions of land, where allowed by the Land Use Element. The purpose of these standards is to support, through site evaluation and design, the establishment of land uses in a manner that is compatible with existing land uses and neighborhoods; the natural environment; and the health and safety of County residents. Standards are provided for various site development features (parcel size; minimum site area; setbacks; heights; fencing and screening; and outdoor lights, among others).

CZLUO Section 23.04.050 (Non-Agricultural Uses in the Agriculture Land Use Category). The Project site is designated AG Land Use Category. This section establishes permit requirements and standards for non-agricultural uses in the AG category.

b. Supplemental Non-Agricultural Uses.

(1) Supplemental non-agricultural uses defined: Uses allowed by Coastal Table "O" in the Agriculture category that are not directly related to the principal agricultural use on the site.

(3) Permit requirement: Minor use permit approval, unless Development Plan approval is otherwise required by another provision of this title or planning area standard of the Land Use Element.

(4) Required findings: Supplemental non-agricultural uses may be established only if the following findings are made by the applicable approval body:

(i) For prime soils, it has been demonstrated that no alternative project site exists except on prime soils; and
(ii) The least amount of prime soils possible will be converted; and
(iii) The proposed use will not conflict with surrounding agricultural lands and uses.

The Project would be subject to compliance with the relevant site design standards specified in CZLUO Chapter 23.04.

CZLUO Chapter 23.05 (Site Development Standards). This Chapter establishes standards for the preparation of sites for development and construction activities, in order to protect against unwarranted or unsafe grading, or soil erosion resulting from grading; by defining appropriate circumstances for tree removal; by providing for adequate drainage and fire protection facilities; and by identifying appropriate standards for other aspects of site development. The Project would be subject to compliance with the relevant site development standards specified in CZLUO Chapter 23.05.

CZLUO Chapter 23.06 (Operational Standards). This Chapter establishes standards to be applied to the operation and conduct of land uses after their establishment, and on a continuing basis. These standards are established to protect from the adverse effects of excessive or objectionable emissions of noise or air contaminants that may be generated by land uses, activities, processes, or equipment. The Project would be subject to compliance with the relevant operational standards specified in CZLUO Chapter 23.06.

CZLUO Chapter 23.07 (Combining Designation Standards). The purpose of Combining Designation standards is to require project design that will give careful consideration to the land features, structures, and activities identified by the Combining Designations. The Project would be subject to compliance with the relevant Combining Designation standards specified in CZLUO Chapter 23.07. The Project site is designated with various Combining Designations, as outlined in the Official Maps Section above. Accordingly, the Project would be subject to compliance with the following CZLUO sections:

- San Simeon Creek Flood Hazard (FH): Sections 23.07.060 through 23.07.066;
- Geologic Study Area (GSA): Sections 23.07.080 through 23.07.086;
- Sensitive Resource Area (SRA): Sections 23.07.160 through 23.07.166;
- Environmentally Sensitive Habitat, Terrestrial Habitat (ESH-TH): Section 23.07.176;
- Environmentally Sensitive Habitat, Coastal Creek (ESH-CC): Sections 23.07.170 and 23.07.174;
- Local Coastal Program (LCP): Section 23.07.120.

CZLUO Chapter 23.08 (Special (S) Uses). The purpose of this Chapter is to establish special additional standards for certain land uses that may affect adjacent properties, the neighborhood, or the community even if the uniform standards of Chapter 23.04 and all other standards of Title 23 are met. Such uses are defined as "S" and "S-P" uses by Coastal Table O, Chapter 7, Part I of the Land Use Element. This Chapter establishes appropriate standards for permit processing, and the location, design, and operation of special uses, to avoid unanticipated problems or hazards, and to assure they will be consistent with the County General Plan. As noted above, the Project site is consistent with the "Public Utility Facilities [J5]" land use definition. Per Table O of the *Coastal Zone Framework for Planning*, Public Utility Facilities on sites designated RSF category are "S-13" status. The S-13 status indicates the land use is a special use, allowable subject to special standards and/or processing requirements, unless otherwise limited by a specific planning area standard.

CZLUO Section 23.08.280 (Transportation, Utilities, and Communication (S-13)). Transportation and Public Utility Facilities identified as allowable, S-13 uses by the Land Use Element (see Coastal Table 0, Part I of the Land Use Element) are subject to CZLUO Section 23.08.288, *Public Utility Facilities*.

CZLUO Section 23.08.288 (Public Utility Facilities): The requirements of this section apply to Public Utility Facilities where designated as S-13 uses by Coastal Table "O." Public Utility Facilities (other than electric and communications transmission and natural gas regulation and distribution) require Development Plan approval pursuant to Section 23.02.034, *Development Plan*.

(a) Permit Requirements. In addition to the emergency repair and the general permit requirements of Section 23.08.286 (a) and (b), development plan approval is required for any new facility or modification of any existing facility in the agriculture, rural lands, residential, office and professional, and commercial land use categories. Development plan approval is required for any new facility or modification to any existing facility which would increase the structure heights above those specified in Section 23.04.124 or modify any operational standards causing an increase in any of the categories specified in Chapter 23.06 of this title.

(b) Application Contents. In addition to the application materials required by Chapter 23.02, permit applications shall also include descriptions of:

(1) *The proposed design capacity of the facility; the operating schedule; and how the proposed facility interacts with incoming and outgoing utility services.*
(2) *Plans for any overhead or underground transmission lines, transformers, inverters, switchyards or any required new or upgraded off-site transmission facilities.*
(3) *Proposed erosion control measures, revegetation, screening and landscaping during construction and operation.*
(4) *An oil and hazardous material spill contingency plan, including a demonstration that all materials can be contained on-site.*
(5) *For electric and telephone centers, estimates of the non-ionizing radiation generated and/or received by the facility. These will include estimates of the maximum electric and magnetic field strengths at the edge of the facility site, the extent that measurable fields extend in all directions from the facility.*
(6) *The number and identification by trades of estimated construction and operation forces. If construction is estimated to take over six months, the construction workforce shall be estimated for each six-month period. The estimates shall include numbers of locally hired employees and employees who will move into the area, and a discussion of the estimated impact that employees moving into the area will have on housing, schools and traffic.*

(c) *Development Standards. The following standards apply in addition to any that may be established as conditions of approval:*

(1) *Environmental Quality Assurance. An environmental quality assurance program covering all aspects of construction and operation shall be submitted prior to construction of any project component. This program will include a schedule and plan for monitoring and demonstrating compliance with all conditions required by the development plan. Specific requirements of this environmental quality assurance program will be determined during the environmental review process and development plan review and approval process.*
(2) *Clearing and Revegetation. The land area exposed and the vegetation removed during construction shall be the minimum necessary to install and operate the facility. Topsoil will be stripped and stored separately. Disturbed areas no longer required for operation will be regraded, covered with topsoil and replanted during the next appropriate season.*
(3) *Fencing and Screening. Public utility facilities shall be screened on all sides. An effective visual barrier will be established through the use of a solid wall, fencing and/or landscaping. The adequacy of the proposed screening will be determined during the land use permitting process.*

(d) *Limitation on Use, Sensitive Environmental Areas. Uses shall not be allowed in sensitive areas such as on prime agricultural soils, sensitive resource areas, environmentally sensitive habitats, or hazard areas, unless a finding is made by the applicable approval body that there is no other feasible location on or off-site the property. Applications for public utility facilities in the above sensitive areas shall include a feasibility study, prepared by a qualified professional approved by the environmental coordinator. The feasibility study shall include a constraints analysis, and analyze alternative locations.*

The Project would be subject to compliance with the land use-related CZLUO standards specified above, as well as the standards identified throughout Section 4 of this Initial Study.

Overall, as concluded above, the Project proposed at the existing San Simeon well field and percolation pond system site (designated AG Category) is an allowable special use, subject to special standards and/or processing requirements, as outlined above. Coastal Development Plan (CDP) approval is required. The County issued an Emergency CDP on May 15, 2014, authorizing construction and operation of the proposed emergency Project, subject to certain conditions. General Emergency CDP Condition 6 specifies that the permittee (CCSD) is required to apply for a regular CDP Permit within 30 days of the date of issuance of the Emergency CDP. In compliance with

Emergency CDP Condition 6, an application for a regular CDP was submitted to the County on June 13, 2014. This Initial Study was provided as supporting documentation to the CDP application.

The Project would be evaluated through the County's discretionary review process, in order to confirm it satisfies the relevant NCAP Planning Area standards, LCP Policies, and CZLUO standards, as outlined above and throughout this Initial Study. Issuance of the regular CDP constitutes compliance with the requirements of the Coastal Zone Land Use Element (i.e., Framework for Planning, NCAP, and LCP Policies Document), CZLUO, and any other relevant County and State regulatory policies and regulations. CDP approval also constitutes approval of a Development Plan in compliance with the County's LCP and California Coastal Act. Therefore, the Project would be in compliance with the land use plan, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect, upon issuance of the regular CDP. A less than significant impact would occur in this regard.

EXISTING REGULATIONS

Refer to the North Coast Area Plan, Local Coastal Program Policies, Coastal Zone Land Use Ordinance Standards identified above.

MITIGATION MEASURES

No mitigation is required.

4.10.c Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. As stated in Response 4.4.f, the Project site is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved habitat conservation plan.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

4.11 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?				✓

IMPACT ANALYSIS

4.11.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?

No Impact. The County's EX (Energy or Extractive Resource Area) and EX1 (Extractive Resource Area) Combining Designations include areas that have been identified as containing or likely to contain significant mineral resources; see Conservation Element Figure MN-2, *Energy and Extractive Resource Area Locations (EX and EX1)*. As shown, the Project site does not contain known mineral resources. Therefore; the Project would not result in the loss of availability of a known mineral resource.

MITIGATION MEASURES

No mitigation is required.

4.11.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?

No Impact. Conservation Element Figure MN-1, *Mining (SMARA) Locations*, shows the locations of the County's existing mines and indicates none are located on the Project site. Therefore, Project implementation would not result in the loss of a locally important mineral resource recovery site.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

4.12 NOISE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		✓		
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			✓	
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?		✓		
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		✓		
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 expose people residing or working in the project area to excessive noise levels?				✓
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓

INTRODUCTION

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air, and is characterized by both its amplitude and frequency (or pitch). The human ear does not hear all frequencies equally. In particular, the ear de-emphasizes low and very high frequencies. To better approximate the sensitivity of human hearing, the A-weighted decibel scale (dBA) has been developed. On this scale, the human range of hearing extends from approximately three dBA to around 140 dBA.

Noise is generally defined as unwanted or excessive sound, which can vary in intensity by over one million times within the range of human hearing; therefore, a logarithmic scale, known as the decibel scale (dB), is used to quantify sound intensity. Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates (is reduced) at a rate between three dBA and 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of three dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate between 6 dBA and about 7.5 dBA per doubling of distance.

There are a number of metrics used to characterize community noise exposure, which fluctuate constantly over time. One such metric, the equivalent sound level (Leq), represents a constant sound that, over the specified period, has the same sound energy as the time-varying sound. Noise exposure over a longer period of time is often evaluated based on the Day-Night Sound Level (Ldn). This is a measure of 24-hour noise levels that incorporates a 10-dBA penalty for sounds occurring between 10:00 p.m. and 7:00 a.m. The penalty is intended to reflect the increased human sensitivity to noises occurring during nighttime hours, particularly at times when people are sleeping and there

are lower ambient noise conditions. Typical Ldn noise levels for light and medium density residential areas range from 55 dBA to 65 dBA.

NOISE SENSITIVE RECEPTORS

On May 15, 2014, the County issued an Emergency CDP authorizing construction and operation of the proposed emergency Project, subject to various conditions. CDP General Condition 6F specifies the following regarding the effects of Project-related noise on nearby biological resources and public recreation:

> *The permittee shall identify expected noise and light levels from project construction and operation at nearby sensitive receptors, including riparian areas, known and potential bird nesting sites, and the nearest public recreation sites, including the State Park campground. The permittee shall identify all measures proposed to be implemented to reduce noise and light effects on those nearby receptors.*

Accordingly, the following discussion of noise sensitive receptors considers riparian areas and the State Park campground, including the residential dwellings therein (campground host housing).

The noise sensitive receptors located on or near the Project site include the following (note these distances are from the Project boundary and not the actual areas of disturbance/construction activities):

- The onsite environmentally sensitive habitats (the San Simeon Creek and Van Gordon Creek corridors that traverse the southeastern and western portions of the Project site, respectively);
- The nearby public recreation sites (the State Park Washburn Primitive Campground located approximately 2,625 feet to the southeast and San Simeon Creek Campground located approximately 75 feet to the west, just south of San Simeon – Monterey Creek Road); and
- Two single-family dwellings (State Park personnel and/or camp hosts) located approximately 450 feet to the west (of the proposed AWTP), approximately 750 feet south of San Simeon - Monterey Creek Road.

IMPACT ANALYSIS

4.12.a Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant With Mitigation Incorporated.

Short-Term Noise Impacts

The proposed water facilities are described in Section 2.0, *Project Description*. Project construction would include grading, trenching, excavation, construction, as well as installation of equipment on structural footings and concrete pads. It is anticipated that only a minimal amount of earthmoving activities would occur due to the proposed water supply facilities. Construction would occur over a four month period.

Ground-borne noise and other types of construction-related noise impacts would typically occur during the initial construction phases. These phases of construction have the potential to create the highest levels of noise. Typical noise levels generated by construction equipment are shown in Table 4.12-1, *Maximum Noise Levels Generated by Construction Equipment*. Operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be due to random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

Table 4.12-1
Maximum Noise Levels Generated by Construction Equipment

Type of Equipment	Acoustical Use Factor[1]	Maximum Noise Level at 50 Feet (A-weighted decibels)
Concrete Saw	20	90
Crane	16	81
Concrete Mixer Truck	40	79
Backhoe	40	78
Dozer	40	82
Excavator	40	81
Forklift	40	78
Paver	50	77
Roller	20	80
Tractor	40	84
Water Truck	40	80
Grader	40	85
General Industrial Equipment	50	85

Note:
1 – Acoustical Use Factor (percent): Estimates the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source: Federal Highway Administration, *Roadway Construction Noise Model (Federal Highway Administration-HEP-05-054),* January 2006.

Construction activities would also cause increased noise along access routes to and from the site due to movement of equipment and workers. As the Project involves construction of emergency water facilities, substantial soil hauling is not anticipated to occur along local roadways due to the minimal amount of earthmoving and grading activities.

The Project is subject to compliance with Coastal Zone Land Use Ordinance (CZLUO) Sections 23.06.042 through 23.06.050, which establish standards for acceptable exterior and interior noise levels. Construction noise would be acoustically dispersed throughout the Project site and not concentrated in one area near adjacent sensitive uses. Nearby noise sensitive receptors could be exposed to short-term construction-related noise levels in excess of the standards specified in the CZLUO. However, according to CZLUO Section 23.06.042 (Exceptions to Noise Standards), the standards of CZLUO Sections 23.06.044 through 23.06.050 are not applicable to noise from various exempt sources, including: the use of any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work to protect life or property; and noise sources associated with construction, provided such activities do not take place before 7:00 a.m. or after 9:00 p.m. any day except Saturday or Sunday, or before 8:00 a.m. or after 5:00 p.m. on Saturday or Sunday. These permitted hours of construction are included in CZLUO Section 23.06.042 in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant disruption. Given the sporadic nature of noise levels generated during Project construction and implementation of time limits specified in the CZLUO, construction noise impacts would be less than significant. Further, as noted in Section 4.4, *Biological Resources*, should the pre-construction clearance survey determine that an active avian nest is present in the sensitive habitat areas; a no-work buffer may be established. The size of the buffer shall be determined by the biologist in consultation with the California Department of Fish and Wildlife and would be based on the nesting species, its sensitivity to disturbance, and expected types of disturbance. Typically these buffers range from 250 to 500 feet from the nest location. To further reduce the potential for noise impacts, Mitigation Measure NOI-1 would be implemented to incorporate best management practices during construction. Implementation of Mitigation Measure NOI-1 would further minimize

impacts from construction noise, as it requires construction equipment to be equipped with properly operating and maintained mufflers and other state required noise attenuation devices. Thus, with mitigation, a less than significant noise impact would result from construction activities.

Operational Noise Impacts

Implementation of the proposed water facilities could increase noise levels in noise-sensitive areas. Noise-producing equipment typically associated with these types of facilities includes electrical pump motors, pump filtration systems, and transformers. The wellhead facilities would not include pumps or noise generating equipment and therefore noise associated with the wells would have no impact. Key AWTP processes would be pre-packaged and mounted in shipping containers. As the equipment would be fully enclosed in AWTP containers, it would attenuate operational noise levels pursuant to CZLUO noise standards.

The spray evaporators proposed along the west berm would include soundwall enclosures, which would be either a Sound Fighter System or a treated wood product; see Exhibit 2-10, *Spray Evaporators*. With these soundwall enclosures, the noise produced by the spray evaporators would be 42 dBA at 200 feet (property line of the campground to the west) and 40 dBA at 250 feet (closest occupied area within campground to the west) and would fall below the CZLUO's noise level limits. Further, as the spray evaporators would be located approximately 400 feet from the habitat areas within the creek corridor, noise levels produced by the spray evaporators would not be perceptible above the ambient noise levels in the area. Therefore, stationary noise impacts from the proposed facilities would be less than significant.

EXISTING REGULATIONS

Coastal Zone Land Use Ordinance Standards:

CZLUO Chapter 23.06 (Operational Standards). This Chapter establishes standards to be applied to the operation and conduct of land uses after their establishment, and on a continuing basis. These standards are established to protect residents from the adverse effects of excessive or objectionable emissions of noise that may be generated by land uses, activities, processes or equipment. The purpose of this chapter is also to identify acceptable levels of noise and other emissions in various land use categories, and to set forth procedures for coordinating the review of development projects with the APCD.

CZLUO Section 23.06.040 (Noise Standards). CZLUO Sections 23.06.044 through 23.06.050 establish standards for acceptable exterior and interior noise levels and describe how noise is to be measured. These standards are intended to protect persons from excessive noise levels, which are detrimental to the public health, welfare, and safety and contrary to the public interest. It is the intent of this chapter to protect persons from excessive levels of noise within or near various residential development and other specified noise-sensitive land uses.

CZLUO Section 23.06.042 (Exceptions to Noise Standards). The standards of CZLUO Sections 23.06.044 through 23.06.050 are not applicable to noise from the following sources:

(2) The use of any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work to protect life or property;

(4) Noise sources associated with construction, provided such activities do not take place before 7:00 a.m. or after 9:00 p.m. any day except Saturday or Sunday, or before 8:00 a.m. or after 5:00 p.m. on Saturday or Sunday; and

(8) Noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities.

CZLUO Section 23.06.044 (Exterior Noise Level Standards). The exterior noise level standards of this section are applicable when a land use affected by noise is one of the following noise-sensitive uses which are defined in the land use element and local coastal plan: residential uses listed in Table O, framework for planning, except for residential accessory uses and temporary dwellings; health care services (hospitals and similar establishments only); hotels and motels; bed and breakfast facilities; schools (preschool to secondary, college and university, specialized education and training); churches; libraries and museums; public assembly and entertainment; offices, and outdoor sports and recreation.

(1) No person shall create any noise or allow the creation of any noise at any location within the unincorporated areas of the county on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any of the preceding noise-sensitive land uses situated in either the incorporated or unincorporated areas to exceed the noise level standards in the following table. When the receiving noise-sensitive land use is outdoor sports and recreation, the following noise level standards shall be increased by ten dB.

Table 4.12-2
Exterior Noise Level Standards

Noise Standard	Daytime (7 a.m. to 10 p.m.)	Nighttime[1] (10 p.m. to 7 a.m.)
Hourly equivalent sound level (Leq, dB) 50 45	50	45
Maximum level, dB 70 65	70	65

Notes:
1. Applies only to uses that operate or are occupied during nighttime hours.

(2) In the event the measured ambient noise level exceeds the applicable exterior noise level standard in subsection (1), the applicable standard shall be adjusted so as to equal the ambient noise level plus one dB.
(3) Each of the exterior noise level standards specified in subsection (1) shall be reduced by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

(4) If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the exterior noise level standards.

MITIGATION MEASURES

NOI-1 Prior to Grading Permit issuance, the Project applicant shall demonstrate, to the satisfaction of the County of San Luis Obispo Planning and Building Manager that the Project complies with the following:

- Construction contracts specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices.

- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.

- Construction equipment staging areas shall be located away from adjacent sensitive receptors.

- Construction activities shall not take place outside of the allowable hours specified by the County's Municipal Code Section 23.06.042, (7:00 a.m. to 9:00 p.m. any day except Saturday or Sunday, or 8:00 a.m. to 5:00 p.m. on Saturday or Sunday).

4.12.b Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact.

Short-Term Construction

Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

The types of construction vibration impact include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. For example, for a building that is constructed with reinforced concrete with no plaster, the Federal Transit Administration (FTA) guidelines show that a vibration level of up to 0.50 inch per second (in/sec) (102 velocity decibels [VdB]) is considered safe and would not result in any construction vibration damage. The vibration produced by construction equipment is presented in Table 4.12-3, *Typical Vibration Levels for Construction Equipment*.

Table 4.12-3
Typical Vibration Levels for Construction Equipment

Equipment	Approximate peak particle velocity at 75 feet (inches/second)
Large bulldozer	0.0017
Loaded trucks	0.0015
Small bulldozer	0.0001
Jackhammer	0.0015
Caisson drilling	0.0017

Notes:
1. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006. Table 12-2.
2. Calculated using the following formula:
   $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$
   where: PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance
   PPV (ref) = the reference vibration level in in/sec from Table 12-2 of the FTA *Transit Noise and Vibration Impact Assessment Guidelines*
D = the distance from the equipment to the receiver

The Project site is not located within one-half mile of an urban or village reserve line, thus, is exempt from CZLUO Section 23.06.060 (*Vibration Standards*). Moreover, *CZLUO Section 23.06.062 (Exceptions to Standards)* specifies that vibration standards of this Chapter are not applicable to: vibrations from construction, the demolition of structures, surface mining activities or geological exploration between 7:00 a.m. and 9:00 p.m.; or vibrations from moving sources such as trucks and railroads.

Groundborne vibration decreases rapidly with distance. The nearest sensitive receptors are public recreation uses (the campground) located approximately 75 feet to the west, just south of San Simeon – Monterey Creek Road). The nearest construction activities that would take place would be associated with construction vehicles traveling along Van Gordon Creek Road. As indicated in Table 4.12-3, based on the Federal Transit Administration (FTA) data, vibration velocities associated with a loaded truck are 0.0015 inch-per-second peak particle velocity (PPV) at 75 feet from the source of activity. With regard to the Project, groundborne vibration would be generated primarily during site clearing and grading activities on-site and by off-site haul-truck travel. Therefore, as the vibration levels would be below the 0.20 inch-per-second PPV significance threshold, a less than significant impact would occur in this regard.

Long-Term Operations

The Project proposes emergency water supply facilities, which would not generate ground-borne vibration that could be felt at surrounding sensitive receptors. No impact would occur in this regard.

EXISTING REGULATIONS

Coastal Zone Land Use Ordinance Standards:

CZLUO Section 23.06.060 (Vibration Standards). Any land use conducted in or within one-half mile of an urban or village reserve line is to be operated to not produce detrimental earth-borne vibrations perceptible at the points of determination identified in the following table:

Table 4.12-4
CZLUO Vibration Standards

Land Use Category in Which Vibration Source is Located	Point of Determination
Residential, office and professional, recreation, commercial	At or beyond any lot line of the lot containing the use
Industrial	At or beyond the boundary of the industrial category

CZLUO Section 23.06.062 (Exceptions to Standards). The vibration standards of this chapter are not applicable to:

(1) Vibrations from construction, the demolition of structures, surface mining activities or geological exploration between 7:00 a.m. and 9:00 p.m.;

(2) Vibrations from moving sources such as trucks and railroads.

MITIGATION MEASURES

No mitigation measure is required.

4.12.c A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant With Mitigation Incorporated. The Project involves the construction and operation of emergency water supply facilities. Project construction would only generate noise during allowable construction hours, as specified in the CZLUO; refer to Response 4.12.a. Mitigation Measure NOI-1 has also been included to ensure that noise impacts from construction would be below the CZLUO's threshold of significance.

Facility operations associated with the Project have the potential to increase ambient noise levels on-site. However, the spray evaporators, AWTP, and associated equipment would be enclosed or shielded within noise-attenuating enclosures. Therefore, impacts in this regard are anticipated to be less than significant.

MITIGATION MEASURES

Refer to Mitigation Measure NOI-1. No additional mitigation is required.

4.12.d Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above the levels existing without the project?

Less Than Significant With Mitigation Incorporated. Refer to Responses 4.12.a and 4.12.b.

MITIGATION MEASURES

Refer to Mitigation Measure NOI-1. No additional mitigation is required.

4.12.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 expose people residing or working in the project area to excessive noise levels?

No Impact. The Project site is located approximately 37 miles northwest of the San Luis Obispo County Regional Airport and is not located within the *Airport Land Use Plan for the San Luis Obispo County Regional Airport*. Therefore, the Project would not expose people residing or working in the Project area to excessive noise levels associated with aircraft.

MITIGATION MEASURES

No mitigation measure is required.

4.12.f For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Rancho San Simeon Airport is located approximately one mile northwest of the Project site. However, the Project would not expose people residing or working in the Project area to excessive noise levels associated with aircraft. Therefore, no impacts would occur in this regard.

MITIGATION MEASURES

No mitigation measure is required.

4.13 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial 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 housing, necessitating the construction of replacement housing elsewhere?				✓
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

IMPACT ANALYSIS

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

No Impact. The CCSD is a limited purpose special district that provides water and wastewater services. It has no authority over land use or development permitting. The entity that has authority over land use and development permitting in Cambria is the County of San Luis Obispo, which has adopted a Growth Management Ordinance (GMO). Under the GMO the "allocation" of new units (i.e. "growth") in Cambria is currently set by ordinance at zero (0 percent). Any changes to the allocation limit percentage for Cambria based upon the existence of the Project would require adoption of an amendment to the GMO by the County Board of Supervisors, however, no such changes have been proposed in relation to the Project. Rather, the CCSD is pursuing the Project out of significant concerns that it will not have sufficient water to meet the needs of its current customers. If and when any changes to the allocation limit percentage for Cambria in the GMO are ever proposed and considered by the County, any growth inducing impacts would necessarily have to be addressed in an appropriate environmental document at that time. At this time, however, since the CCSD does not have any authority over growth and land use and is pursuing the Project to meet the needs of the existing community, there are no growth inducing impacts from the Project.

MITIGATION MEASURES

No mitigation is required.

4.13.b Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

4.13.c Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. There is no housing or other development on the Project site. Therefore, the Project would not displace existing housing or persons, or necessitate the construction of replacement housing elsewhere.

MITIGATION MEASURES

No mitigation is required.

4.14 PUBLIC SERVICES

Would the project:	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:				
1) Fire protection?			✓	
2) Police protection?			✓	
3) Schools?				✓
4) Parks?				✓
5) Other public facilities?				✓

IMPACT ANALYSIS

4.14.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:

4.14.a.1 Fire protection?

4.14.a.2 Police protection?

Less Than Significant Impact. Due to the nature and scope of the proposed water facilities, Project implementation would result in a nominal increase in the demand for fire and police protection services. The Project would not affect existing service ratios or response times, and new governmental facilities would not be required. The proposed facilities would not increase the demand for fire or police protection.

MITIGATION MEASURES

No mitigation is required.

4.14.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:

4.14.a.3 Schools?

4.14.a.4 Parks?

4.14.a.5 Other public facilities?

No Impact. The Project involves construction of water facilities to address an existing water supply shortage. The Project does not involve the construction of school, park, or other government facilities. Housing and employment-generating land uses are not proposed, thus, the Project does not create a demand for new schools, parks, or other government facilities.

MITIGATION MEASURES

No mitigation is required.

4.15 RECREATION

Would the project:	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?				✓

IMPACT ANALYSIS

4.15.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?

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

No Impact. The Project involves construction of water facilities to address an existing water supply shortage. Housing and employment-generating land uses are not proposed, thus, the Project would not increase the use of existing recreational facilities. The Project does not include recreational facilities.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

4.16 TRANSPORTATION/TRAFFIC

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			✓	
b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			✓	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✓
e. Result in inadequate emergency access?				✓
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				✓

IMPACT ANALYSIS

4.16.a Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

4.16.b Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. The Project involves construction and operation of emergency water facilities at CCSD's existing San Simeon well field and percolation pond system property. Construction access to the Project site would be provided along the northern site boundary via San Simeon - Monterey Creek Road, and along the western site boundary Van Gordon Creek Road. The "window" of construction-related activities at the Project site would be approximately 180 days.

During Project construction, movement of equipment and workers to and from the site would temporarily increase traffic volumes along access routes. The primary heavy construction equipment and vehicles are expected to be moved on-site during the initial construction phase and removed during the final construction phase; thus, daily truck trips would not be generated. Additionally, daily transportation of construction workers would not represent a substantial percentage of current daily traffic volumes along access routes.

Operating and maintaining the proposed water facilities would not require onsite full time staff, since the AWTP would operate automatically with no operators onsite. Up to two employees would visit the site daily to visually inspect and maintain the AWTP.

Therefore, given the short duration of construction activities, the nature and scope of the proposed water facilities, and since traffic volumes associated with the proposed facilities would be nominal, Project implementation would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. The Project would not significantly impact intersections, streets, highways, freeways, mass transit, or Congestion Management Program (CMP) facilities. Additionally, the Project would not impact pedestrian or bicycle paths, since none are located on or immediately adjacent to the Project site.

MITIGATION MEASURES

No mitigation is required.

4.16.c Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. Given the nature and scope of the proposed water facilities, the Project would not result in any change in air traffic patterns or traffic levels.

MITIGATION MEASURES

No mitigation is required.

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

No Impact. The Project does not involve construction of transportation-related or other improvements that would increase hazards.

The Project site is designated Agriculture (AG) and the proposed water facilities (Public Utility Facilities)[1] are allowable uses in AG-designated sites, according to Coastal Table O. Additionally, the proposed water facilities would be constructed within an existing public utility site that already contains the San Simeon well field, percolation pond system, and Van Gordon Reservoir. Therefore, the Project would not substantially increase hazards due to incompatible uses.

MITIGATION MEASURES

No mitigation is required.

[1] Public Utility Facilities [J5] include public water system wells, treatment plants, and storage, and community wastewater treatment plants, settling ponds, and disposal fields, among other (see Coastal Zone Framework for Planning Excerpts Land Use Definitions).

4.16.e Result in inadequate emergency access?

No Impact. Access to the Project site would continue to be provided along the northern site boundary, via San Simeon - Monterey Creek Road. The Project would not result in inadequate emergency access.

MITIGATION MEASURES

No mitigation is required.

4.16.f Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. The Project does not involve the construction of public transit, bicycle, or pedestrian facilities. Housing and employment-generating land uses are not proposed, thus, the Project does not create a demand for new public transit, bicycle, or pedestrian facilities. Additionally, there are no public transit, bicycle, or pedestrian facilities located on or immediately adjacent to the Project site. Therefore, the Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

MITIGATION MEASURES

No mitigation is required.

This page intentionally left blank.

4.17 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			✓	
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		✓		
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			✓	
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				✓
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				✓
g. Comply with federal, state, and local statutes and regulations related to solid waste?				✓

IMPACT ANALYSIS

4.17.a Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less Than Significant Impact. A stream of the AWTP product water would be pumped southwest of the AWTP for discharge into San Simeon Creek via LIWs, which are proposed just upstream of the fresh water lagoon, approximately 2,500 feet southwest of existing Well 9P7.

The Project proposes to extract 400 gallons per minute (gpm) of groundwater from the San Simeon Creek aquifer (via Well 9P7) upstream of San Simeon Creek Lagoon. The extracted water would be treated at the proposed AWTP and 300 gpm would be reinjected (via RIW) for subsequent distribution to Cambria. To mitigate the extraction of groundwater, the Project proposes to return 100 gpm to the San Simeon Creek aquifer adjacent to the Lagoon (via LIWs or via existing Well 9P7 discharge pipeline directly into Van Gordon Creek adjacent to the AWTP). The AWTP generated waste stream (brine) would be disposed of via evaporation within the existing Van Gordon Reservoir, after it is modified to meet Title 27 requirements, which include an impermeable liner system and monitoring system to protect soil and groundwater. Evaporation of the brine waste stream would be aided with mechanical spray evaporators.

As concluded in Response 4.9.a, review of the Project through the established regulatory framework would ensure the ROWD contains the necessary technical information in support of a WDR Permit to protect the nearby surface, coastal, and ground waters (Waters of the State). Compliance with LCP Policies 16, 20, 21, and 23 would be

achieved through compliance with CZLUO and CCRWQCB requirements. Compliance with the established regulatory framework would ensure the Project would result in a less than significant impact involving potential exceedances of wastewater treatment requirements.

EXISTING REGULATIONS

Refer to Response 4.9.a and the following.

Local Coastal Program Policies:

Wetlands

LCP 16 Adjacent Development. Development adjacent to coastal wetlands shall be sited and designed to prevent significant impacts to wetlands through noise, sediment or other disturbances. Development shall be located as far away from the wetland as feasible, consistent with other habitat values on the site.

Coastal Streams

LCP 20 Coastal Streams and Riparian Vegetation. Coastal streams and adjoining riparian vegetation are environmentally sensitive habitat areas and the natural hydrological system and ecological function of coastal streams shall be protected and preserved.

LCP 21 Development in or Adjacent to a Coastal Stream. Development adjacent to or within the watershed (that portion within the coastal zone) shall be sited and designed to prevent impacts which would significantly degrade the coastal habitat and shall be compatible with the continuance of such habitat areas. This shall include evaluation of erosion and runoff concerns.

LCP 23 County and State Review of Coastal Stream Projects. The State Water Resources Control Board and the County shall ensure that the beneficial use of coastal stream waters is protected, for projects over which it has jurisdiction… .

MITIGATION MEASURES

Refer to Response 4.9.a.

4.17.b Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant With Mitigation Incorporated.

Water Infrastructure and Water Treatment Facilities

The CCSD is proposing the Cambria Emergency Water Supply Project, as described in Section 2.4, Project Characteristics. The emergency Project is needed to: fully recharge one of the two coastal stream aquifers, in order to: avoid projected water supply shortages by the end of summer 2014; prevent seawater intrusion into the groundwater aquifer and possible subsidence; and protect well pumps from losing suction. The emergency Project is the subject of this Initial Study. Therefore, the Project would result in construction of new water and water treatment facilities, the construction and operation of which could cause environmental effects. As concluded in Sections 4.1 through 4.18, the Project would result in less than significant impacts with mitigation incorporated.

Wastewater Infrastructure and Wastewater Treatment Facilities

The Project does not involve development of land uses that would generate wastewater; therefore, the Project would not require or result in the construction of new wastewater or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. Refer also to Response 4.17.a above.

EXISTING REGULATIONS

Local Coastal Program Policies: Refer to LCP Policies specified in Sections 4.1 through 4.18.

North Coast Area Plan Standards: Refer to NCAP standards specified in Sections 4.1 through 4.18.

Coastal Zone Land Use Ordinance Standards: Refer to CZLUO standards specified in Sections 4.1 through 4.18.

MITIGATION MEASURES

Refer to Mitigation Measures specified in Sections 4.1 through 4.18.

4.17.c Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. Due to the Project's nature and scope, construction of new storm water drainage facilities or the expansion of existing facilities would not be required. Refer also to Responses 4.9.c and 4.9.d.

MITIGATION MEASURES

No mitigation is required.

4.17.d Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. The Project does not involve development of land uses that would create a demand for water. Rather, the CCSD is proposing the Cambria Emergency Water Supply Project in response to the CCSD Board of Directors' January 30, 2014 declaration of a Stage 3 Water Shortage Emergency in Cambria. Thus, the Project involves construction and operation of water facilities that are needed to address an emergency condition resulting from the current drought emergency and avoid future water shortage emergencies; also see Response 4.13.a. Because the Project does not involve development of land uses that would create a demand for water, new or expanded entitlements are not needed.

MITIGATION MEASURES

No mitigation is required.

4.17.e Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected generation in addition to the provider's existing commitments?

No Impact. The Project does not involve development of land uses that would generate wastewater; therefore, the Project would not impact the capacity of CCSD's wastewater treatment facility. Refer also to Responses 4.17.a and 4.17.b above.

MITIGATION MEASURES

No mitigation is required.

4.17.f Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

4.17.g Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The Project does not involve development of land uses that would generate solid waste; therefore, the Project would not impact a landfill's capacity or conflict with solid waste regulations. Refer to Response 4.8.a regarding the Project's brine disposal requirements.

MITIGATION MEASURES

No mitigation is required.

4.18 MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to 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, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		✓		
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			✓	
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			✓	

IMPACT ANALYSIS

4.18.a Does the project have the potential to 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, 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?

Less Than Significant With Mitigation Incorporated. As concluded in Section 4.4, *Biological Resources*, the Project has the potential to 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, reduce the number or restrict the range of a rare or endangered plant or animal. Impacts in this regard would be less than significant with mitigation incorporated.

As concluded in Section 4.5, *Cultural Resources*, the Project does not have the potential to eliminate important examples of the major periods of California history or prehistory. Impacts to cultural resources would be less than significant impact with mitigation incorporated.

MITIGATION MEASURES

No mitigation is required.

4.18.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)?

Less Than Significant Impact. Based on the analysis contained in this Initial Study, the Project, with implementation of the mitigation measures identified in Sections 4.1 through 4.17, would not have cumulatively considerable impacts. As such, implementation of mitigation measures at the Project-level would reduce the potential for the Project's incremental effects to be considerable when viewed in connection with the effects of past projects, current projects, or probable future projects.

MITIGATION MEASURES

No mitigation is required.

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

Less Than Significant Impact. Previous sections of this Initial Study analyzed the Project's potential impacts related to aesthetics, air quality, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, and public services and utilities. As concluded in these previous discussions, the Project would result in less than significant environmental impacts with implementation of the recommended mitigation. Therefore, the Project would not result in environmental impacts that would cause substantial adverse effects on human beings.

MITIGATION MEASURES

No mitigation is required.

5.0 REFERENCES

The following references were utilized during preparation of this Initial Study. These documents are available for review at the Cambria Community Services District (CCSD) located at 1316 Tamson Drive, Suite 201, Cambria, California 9342.

1. Boyle Engineering Corporation, *Preliminary Draft EIR for Proposed Van Gordon Creek Effluent Reservoir for Cambria Community Services District*, June 1979.

2. California Department of Forestry and Fire Protection, *Fire Resource and Assessment Program State Responsibility Area Maps,* http://frap.fire.ca.gov/data/frapgismaps/sra_map_download.html.

3. California Energy Commission, *California Greenhouse Gas Inventory for 2000-2011*, August 2013.

4. California Environmental Quality Act, 1970, as amended, Public Resources Code Sections 21000-21178.

5. California Health and Safety Code Section 7050.5.

6. California Public Resources Code Section 5097.98 – 5097.99.

7. CDM Smith, *Cambria Emergency Water Supply Project San Simeon Creek Basin Groundwater Modeling Report*, May 14, 2014.

8. CDM Smith, *Cambria Emergency Water Supply Project Description*, June 2014.

9. CDM Smith, *Cambria Water Supply Alternatives Engineering Technical Memorandum*, November 27, 2013.

10. Coastal Valley Engineering, Inc., *Draft EIR for Cambria County Water District Water System Improvements*, May 1976.

11. Cogstone, Cultural Resources Assessment for the Cambria Emergency Water Project, June 2014.

12. County of San Luis Obispo, *Building and Construction Ordinance*, Revised January 2013.

13. County of San Luis Obispo, *Coastal Plan Policies, Local Coastal Program Policy Document, A Portion of the San Luis Obispo County Land Use Element of the General Plan*, Revised April 2007.

14. County of San Luis Obispo, *Coastal Zone Land Use Ordinance*, Revised November 2013.

15. County of San Luis Obispo, *General Plan*, 1992-2010.

16. County of San Luis Obispo, *Energy Wise Plan Designing Energy and Climate Solutions for the Future,* November 2011.

17. County of San Luis Obispo, *Framework for Planning Coastal Zone,* Revised November 2011.

18. County of San Luis Obispo, *Municipal Code,* Codified through Ordinance No. 3235, Passed November 20, 2012.

19. County of San Luis Obispo, *Natural Hazard Maps*.

20. County of San Luis Obispo, *Noise Element, Part I Policy Document,* Adopted May 5, 1992.

21. County of San Luis Obispo, *North Coast Area Plan*, Revised August 24, 2008.

22. County of San Luis Obispo Website, http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download_ Center/Land_Use_ Maps.htm, Accessed May 15, 2014.

23. County of San Luis Obispo Website, http://www.slocounty.ca.gov/planning/zoning/Map_Image_Download _Center/Natural_Resources_Maps.htm, Accessed May 16, 2014.

24. Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report,* August 2000.

25. Federal Highway Administration, *Roadway Construction Noise Model (Federal Highway Administration-HEP-05-054),* January 2006.

26. Google Earth, 2014.

27. Harris, Cyril, Handbook of Noise Control, 1979.

28. RBF Consulting, Cambria Emergency Water Supply Project Habitat Assessment, June 11, 2014.

29. Robert Bein, William Frost & Associates, *Draft Environmental Impact Report and Appendices Effluent Disposal Field and Stream Restoration Improvements Project*, August 1993.

30. Robert Bein, William Frost & Associates, *Groundwater Recharge Project Environmental Impact Report*, December 1991.

31. San Luis Obispo County Air Pollution Control District, *CEQA Air Quality Handbook,* April 2012.

32. San Luis Obispo County Air Pollution Control District Website, http://www.slocleanair.org/index, Accessed June 5, 2014.

33. State of California, Department of Conservation, California Geological Survey, http://www.quake.ca.gov /gmaps/WH/ regulatorymaps.htm, Accessed May 27, 2014.

34. The Airport Land Use Commission of San Luis Obispo County, *Airport Land Use Plan for the San Luis Obispo County Regional Airport,* Amended May 18, 2005.

35. United States Environmental Protection Agency, Risk Management Planning Rule 40 CFR 68.

36. United States Environmental Protection Agency Website, *Greenhouse Gas Equivalencies Calculator*, http://www.epa.gov/cleanenergy/energy-resources/calculator.html, Accessed June 9, 2014.

37. Written Communication: Robert C. Gresens, P.E., District Engineer, Cambria Community Services District, June 5, 2014.

6.0 REPORT PREPARATION PERSONNEL

Cambria Community Services District (Lead Agency)
1316 Tamson Drive, Suite 201
Cambria, California 9342

Mr. Robert C. Gresens, P.E., District Engineer
Mr. Jerry Gruber

CDM Smith (Consulting Engineer)
111 Academy Way, Suite 150
Irvine, California 92617

Mr. Sava S. Nedic, P.E., PMP, BCEE, Principal
Mr. Chris Park, AICP, LEED AP BD+C, Planner
Ms. Evelyn You, P.E., Environmental Engineer

RBF Consulting, a Company of Michael Baker International (Lead Consultant)
14725 Alton Parkway
Irvine, California 92618

Mr. Glenn Lajoie, AICP, Project Director
Ms. Rita Garcia, Project Manager
Mr. Eddie Torres, INCE, Director of Technical Studies
Mr. Thomas McGill, Biologist
Mr. Ryan Winkleman, Biologist
Mr. Travis McGill, Biologist
Mr. Achilles Malisos, Air Quality, Greenhouse Gas, and Noise Analyst
Ms. Alesia Hsiao, Air Quality, Greenhouse Gas, and Noise Analyst
Ms. Linda Bo, Document Preparation/Graphic Artist

Cogstone (Cultural Assessment)
1518 West Taft Avenue
Orange, California 92865

Ms. Sherri Gust, Principal

This page intentionally left blank.

7.0 INVENTORY EXISTING REGULATIONS AND PROJECT MITIGATION MEASURES

7.1 LOCAL COASTAL PROGRAM POLICIES

AESTHETICS

Visual and Scenic Resources

LCP 1 Protection of Visual and Scenic Resources. Unique and attractive features of the landscape, including but not limited to unusual landforms, scenic vistas and sensitive habitats are to be preserved protected, and in visually degraded areas restored where feasible.

LCP 2 Site Selection for New Development. Permitted development shall be sited so as to protect views to and along the ocean and scenic coastal areas. Wherever possible, site selection for new development is to emphasize locations not visible from major public view corridors….

LCP 4 New Development in Rural Areas. New development shall be sited to minimize its visibility from public view corridors. Structures shall be designed (height, bulk, style) to be subordinate to, and blend with, the rural character of the area. New development which cannot be sited outside of public view corridors is to be screened utilizing native vegetation; however, such vegetation, when mature, must also be selected and sited in such a manner as to not obstruct major public views. New land divisions whose only building site would be on a highly visible slope or ridgetop shall be prohibited.

LCP 7 Preservation of Trees and Native Vegetation. The location and design of new development shall minimize the need for tree removal. When trees must be removed to accommodate new development or because they are determined to be a safety hazard, the site is to be replanted with similar species or other species which are reflective of the community character.

BIOLOGICAL RESOURCES

Environmentally Sensitive Habitats

LCP 1 Land Uses Within or Adjacent to Environmentally Sensitive Habitats. New development within or adjacent to locations of environmentally sensitive habitats (within 100 feet unless sites further removed would significantly disrupt the habitat) shall not significantly disrupt the resource. Within an existing resource, only those uses dependent on such resources shall be allowed within the area.

LCP 2 Permit Requirement. As a condition of permit approval, the applicant is required to demonstrate that there will be no significant impact on sensitive habitats and that proposed development or activities will be consistent with the biological continuance of the habitat. This shall include an evaluation of the site prepared by a qualified professional which provides: a) the maximum feasible mitigation measures (where appropriate), and b) a program for monitoring and evaluating the effectiveness of mitigation measures where appropriate.

Wetlands

LCP 7 Protection of Environmentally Sensitive Habitats. Coastal wetlands are recognized as environmentally sensitive habitat areas. The natural ecological functioning and productivity of wetlands and estuaries shall be protected, preserved and where feasible, restored.

LCP 16 Adjacent Development. Development adjacent to coastal wetlands shall be sited and designed to prevent significant impacts to wetlands through noise, sediment or other disturbances. Development shall be located as far away from the wetland as feasible, consistent with other habitat values on the site.

LCP 17 Wetland Buffer. In new development, a buffer strip shall be required and maintained in natural condition along the periphery of all wetlands. This shall be a minimum of 100 feet in width measured from the upland extent of the wetland unless a more detailed requirement for a greater or lesser amount is included in the LUE or the LUO would allow for adjustment to recognize the constraints which the minimum buffer would impose upon existing subdivided lots. If a project involves substantial improvements or increased human impacts, necessitating a wide buffer area, it shall be limited to utility lines, pipelines, drainage and flood control facilities, bridges and road approaches to bridges, and roads when it can be demonstrated that: a) alternative routes are infeasible or more environmentally damaging, and b) the adverse environmental effects are mitigated to the maximum extent feasible. Access paths and/or fences necessary to protect habitats may also be permitted.

The minimum buffer strip may be adjusted by the county if the minimum setback standard would render the parcel physically unusable for the principal permitted use. To allow a reduction in the minimum standard set-back, it must be found that the development cannot be designed to provide for the standard. When such reductions are permitted, the minimum standard shall be reduced to only the point at which the principal permitted use (development), modified as much as is practical from a design standpoint, can be accommodated. At no point shall this buffer be less than 25 feet.

LCP 18 Wetland Buffers Less than 100 Feet. For buffers less than 100 feet as established consistent with Policy 15 (above) mitigation measures to ensure wetland protection shall be required, and shall include (where applicable) vegetative screening, landscaping with native vegetation, drainage controls and other such measures.

When the minimum buffer strip is adjusted by the county, it shall be done on a case-by-case basis only after the investigation of the following factors:

a. Soil type and stability of development site, including susceptibility to erosion.
b. Slope of land adjacent to the wetland and the ability to use natural topographic features to locate development.
c. Types and amount of vegetation and its value as wildlife habitat including: 1) the biological significance of the adjacent lands in maintaining the functional capacity of the wetland, and 2) the sensitivity of the species to disturbance.
d. Type and intensity of proposed uses.
e. Lot size and configuration, and the location of existing development.

Coastal Stream

LCP 20 Coastal Streams and Riparian Vegetation. Coastal streams and adjoining riparian vegetation are environmentally sensitive habitat areas and the natural hydrological system and ecological function of coastal streams shall be protected and preserved.

LCP 21 Development in or Adjacent to a Coastal Stream. Development adjacent to or within the watershed (that portion within the coastal zone) shall be sited and designed to prevent impacts which would significantly degrade the coastal habitat and shall be compatible with the continuance of such habitat areas. This shall include evaluation of erosion and runoff concerns.

LCP 28 Buffer Zone for Riparian Habitats. In rural areas (outside the USL) a buffer setback zone of 100 feet shall be established between any new development (including new agricultural development) and the upland edge of riparian habitats. In urban areas this minimum standard shall be 50 feet except where a lesser buffer is specifically permitted. The buffer zone shall be maintained in natural condition along the periphery of all streams. Permitted uses within the buffer strip shall be limited to passive recreational, educational or existing nonstructural agricultural developments in accordance with adopted best management practices. Other uses that may be found appropriate are limited to utility lines, pipelines, drainage and flood control facilities, bridges and road approaches to bridges to cross a stream and roads when it can be demonstrated that: 1) alternative routes are infeasible or more environmentally damaging and 2) adverse environmental effects are mitigated to the maximum extent feasible. Lesser setbacks on existing parcels may be permitted if application of the minimum setback standard would render the parcel physically unusable for the principal permitted use. In allowing a reduction in the minimum setbacks, they shall be reduced only to the point at which a principal permitted use (as modified as much as is practical from a design standpoint) can be accommodated.

Terrestrial Environments

LCP 29 Protection of Terrestrial Habitats. Designated plant and wildlife habitats are environmentally sensitive habitat areas and emphasis for protection should be placed on the entire ecological community. Only uses dependent on the resource shall be permitted within the identified sensitive habitat portion of the site.

Development adjacent to environmentally sensitive habitat areas and holdings of the State Department of Parks and Recreation shall be sited and designed to prevent impacts that would significantly degrade such areas and shall be compatible with the continuance of such habitat areas.

LCP 30 Protection of Native Vegetation. Native trees and plant cover shall be protected wherever possible. Native plants shall be used where vegetation is removed.

LCP 35 Protection of Vegetation. Vegetation which is rare or endangered or serves as cover for endangered wildlife shall be protected against any significant disruption of habitat value. All development shall be designed to disturb the minimum amount possible of wildlife or plant habitat.

CULTURAL RESOURCES

LCP 1 Protection of Archaeological Resources. The county shall provide for the protection of both known and potential archaeological resources. All available measures, including purchase, tax relief, purchase of development rights, etc., shall be explored at the time of a development proposal to avoid development on important archaeological sites. Where these measures are not feasible and development will adversely affect identified archaeological or paleontological resources, adequate mitigation shall be required.

LCP 3 Identification of Archaeological Sites. ….. Development within an archaeological sensitive areas shall not occur until a preliminary site survey is conducted for the site, and if necessary, mitigation measures implemented.

LCP 5 Mitigation Techniques for Preliminary Site Survey Before Construction. Where substantial archaeological resources are found as a result of a preliminary site survey before construction, the county shall require a mitigation plan to protect the site. Some examples of specific mitigation techniques include:

a. Project redesign could reduce adverse impacts of the project through relocation of open space, landscaping or parking facilities.

b. Preservation of an archaeological site can sometimes be accomplished by covering the site with a layer of fill sufficiently thick to insulate it from impact. This surface can then be used for building that does not require extensive foundations or removal of all topsoil.

c. When a project impact cannot be avoided, it may be necessary to conduct a salvage operation. This is usually a last resort alternative because excavation, even under the best conditions, is limited by time, costs and technology. Where the chosen mitigation measure necessitates removal of archaeological resources, the county shall require the evaluation and proper deposition of the findings based on consultation with a qualified archaeologist knowledgeable in the Chumash culture.

d. A qualified archaeologist knowledgeable in the Chumash culture may need to be on-site during initial grading and utility trenching for projects within sensitive areas.

GEOLOGY AND SOILS

Hazards

LCP 1 New Development. All new development proposed within areas subject to natural hazards from geologic or flood conditions (including beach erosion) shall be located and designed to minimize risks to human life and property….

LCP 2 Erosion and Geologic Stability. New development shall ensure structural stability while not creating or contributing to erosion or geological instability.

LCP 3 Development Review in Hazard Areas. The County shall require a detailed review of development proposed within the geologic study area and flood hazard combining designations as indicated on the Land Use Element maps for the coastal zone. The review shall be performed by a qualified registered and/or certified engineering geologist and shall be adequately detailed to provide recommendations and conclusions consistent with this plan….

Coastal Streams

LCP 20 Coastal Streams and Riparian Vegetation. Coastal streams and adjoining riparian vegetation are environmentally sensitive habitat areas and the natural hydrological system and ecological function of coastal streams shall be protected and preserved.

LCP 21 Development in or Adjacent to a Coastal Stream. Development adjacent to or within the watershed (that portion within the coastal zone) shall be sited and designed to prevent impacts which would significantly degrade the coastal habitat and shall be compatible with the continuance of such habitat areas. This shall include evaluation of erosion and runoff concerns.

LCP 23 County and State Review of Coastal Stream Projects. The State Water Resources Control Board and the County shall ensure that the beneficial use of coastal stream waters is protected, for projects over which it has jurisdiction. For projects which do not fall under the review of the State Water Resources Control Board, the County (in its review of public works and stream alterations) shall ensure that the quantity and quality surface water discharge from streams and rivers shall be maintained at levels necessary to sustain the functional capacity of streams, wetland, estuaries and lakes.

LCP 28 Buffer Zone for Riparian Habitats. In rural areas (outside the USL) a buffer setback zone of 100 feet shall be established between any new development (including new agricultural development) and the upland edge of riparian habitats. In urban areas this minimum standard shall be 50 feet except where a lesser buffer is specifically permitted. The buffer zone shall be maintained in natural condition along the periphery of all streams. Permitted uses within the buffer strip shall be limited to passive recreational, educational or existing nonstructural agricultural developments in accordance with adopted best management practices. Other uses that may be found appropriate are limited to utility lines, pipelines, drainage and flood control facilities, bridges and road approaches to bridges to cross a stream and roads when it can be demonstrated that: 1) alternative routes are infeasible or more environmentally damaging and 2) adverse environmental effects are mitigated to the maximum extent feasible. Lesser setbacks on existing parcels may be permitted if application of the minimum setback standard would render the parcel physically unusable for the principal permitted use. In allowing a reduction in the minimum setbacks, they shall be reduced only to the point at which a principal permitted use (as modified as much as is practical from a design standpoint) can be accommodated.

HYDROLOGY AND WATER QUALITY

Coastal Watersheds

LCP 1 Preservation of Groundwater Basins. The long-term integrity of groundwater basins within the coastal zone shall be protected. The safe yield of the groundwater basin, including return and retained water, shall not be exceeded except as part of a conjunctive use or resource management program which assures that the biological productivity of aquatic habitats are not significantly adversely impacted.

LCP 2 Water Extractions. Extractions, impoundments, and other water resource developments shall obtain all necessary county and/or state permits. All pertinent information on these uses (including water conservation opportunities and impacts on in-stream beneficial uses) will be incorporated into the data base for the Resource Management System and shall be supplemented by all available private and public water resources studies available. Groundwater levels and surface flows shall be maintained to ensure that the quality of coastal waters, wetlands, and streams is sufficient to provide for optimum populations of marine organisms, and for the protection of human health.

Wetlands

LCP 16 Adjacent Development. Development adjacent to coastal wetlands shall be sited and designed to prevent significant impacts to wetlands through noise, sediment or other disturbances. Development shall be located as far away from the wetland as feasible, consistent with other habitat values on the site.

Coastal Streams

LCP 20 Coastal Streams and Riparian Vegetation. Coastal streams and adjoining riparian vegetation are environmentally sensitive habitat areas and the natural hydrological system and ecological function of coastal streams shall be protected and preserved.

LCP 21 Development in or Adjacent to a Coastal Stream. Development adjacent to or within the watershed (that portion within the coastal zone) shall be sited and designed to prevent impacts which would significantly degrade the coastal habitat and shall be compatible with the continuance of such habitat areas. This shall include evaluation of erosion and runoff concerns.

LCP 23 County and State Review of Coastal Stream Projects. The State Water Resources Control Board and the County shall ensure that the beneficial use of coastal stream waters is protected, for projects over which it has jurisdiction. For projects which do not fall under the review of the State Water Resources Control Board, the county (in its review of public works and stream alterations) shall ensure that the quantity and quality surface water discharge from streams and rivers shall be maintained at levels necessary to sustain the functional capacity of streams, wetland, estuaries and lakes.

Hazards

LCP 1 New Development. All new development proposed within areas subject to natural hazards from geologic or flood conditions (including beach erosion) shall be located and designed to minimize risks to human life and property……

LCP 2 Erosion and Geologic Stability. New development shall ensure structural stability while not creating or contributing to erosion or geological instability.

LCP 3 Development Review in Hazard Areas. The County shall require a detailed review of development proposed within the geologic study area and flood hazard combining designations as indicated on the Land Use Element maps for the coastal zone. The review shall be performed by a qualified registered and/or certified engineering geologist and shall be adequately detailed to provide recommendations and conclusions consistent with this plan. Residential, commercial and industrial development shall be prohibited within the l00 year floodplain (one percent (1%) chance of inundation in any year) as delineated in the Flood Hazard combining designation except for those areas within an urban reserve line.

LAND USE AND PLANNING

Environmentally Sensitive Habitats

LCP 1 Land Uses Within or Adjacent to Environmentally Sensitive Habitats. New development within or adjacent to locations of environmentally sensitive habitats (within 100 feet unless sites further removed would significantly disrupt the habitat) shall not significantly disrupt the resource. Within an existing resource, only those uses dependent on such resources shall be allowed within the area.

LCP 2 Permit Requirement. As a condition of permit approval, the applicant is required to demonstrate that there will be no significant impact on sensitive habitats and that proposed development or activities will be consistent with the biological continuance of the habitat. This shall include an evaluation of the site prepared by a qualified professional which provides: a) the maximum feasible mitigation measures (where appropriate), and b) a program for monitoring and evaluating the effectiveness of mitigation measures where appropriate.

Wetlands

LCP 16 *Adjacent Development*. Development adjacent to coastal wetlands shall be sited and designed to prevent significant impacts to wetlands through noise, sediment or other disturbances. Development shall be located as far away from the wetland as feasible, consistent with other habitat values on the site.

Coastal Streams

LCP 21 Development in or Adjacent to a Coastal Stream. Development adjacent to or within the watershed (that portion within the coastal zone) shall be sited and designed to prevent impacts which would significantly degrade the coastal habitat and shall be compatible with the continuance of such habitat areas. This shall include evaluation of erosion and runoff concerns.

LCP 28 Buffer Zone for Riparian Habitats. In rural areas (outside the USL) a buffer setback zone of 100 feet shall be established between any new development (including new agricultural development) and the upland edge of riparian habitats. In urban areas this minimum standard shall be 50 feet except where a lesser buffer is specifically permitted. The buffer zone shall be maintained in natural condition along the periphery of all streams. Permitted uses within the buffer strip shall be limited to passive recreational, educational, or existing nonstructural agricultural developments in accordance with adopted best management practices. Other uses that may be found appropriate are limited to utility lines, pipelines, drainage and flood control facilities, bridges and road approaches to bridges to cross a stream and roads when it can be demonstrated that: 1) alternative routes are infeasible or more environmentally damaging and 2) adverse environmental effects are mitigated to the maximum extent feasible. Lesser setbacks on existing parcels may be permitted if application of the minimum setback standard would render the parcel physically unusable for the principal permitted use. In allowing a reduction in the minimum setbacks, they shall be reduced only to the point at which a principal permitted use (as modified as much as is practical from a design standpoint) can be accommodated.

Terrestrial Environments

LCP 29 Protection of Terrestrial Habitats. Designated plant and wildlife habitats are environmentally sensitive habitat areas and emphasis for protection should be placed on the entire ecological community. Only uses dependent on the resource shall be permitted within the identified sensitive habitat portion of the site.

Development adjacent to environmentally sensitive habitat areas and holdings of the State Department of Parks and Recreation shall be sited and designed to prevent impacts that would significantly degrade such areas and shall be compatible with the continuance of such habitat areas.

Visual and Scenic Resources

LCP 2 Site Selection for New Development. Permitted development shall be sited so as to protect views to and along the ocean and scenic coastal areas. Wherever possible, site selection for new development is to emphasize locations not visible from major public view corridors. In particular, new development should utilize slope created "pockets" to shield development and minimize visual intrusion.

LCP 4 New Development in Rural Areas. New development shall be sited to minimize its visibility from public view corridors. Structures shall be designed (height, bulk, style) to be subordinate to, and blend with, the rural character of the area. New development which cannot be sited outside of public view corridors is to be screened utilizing native vegetation; however, such vegetation, when mature, must also be selected and sited in such a manner as to not obstruct major public views. New land divisions whose only building site would be on a highly visible slope or ridgetop shall be prohibited.

LCP 7 Preservation of Trees and Native Vegetation. The location and design of new development shall minimize the need for tree removal.

UTILITIES AND SERVICE SYSTEMS

Wetlands

LCP 16 Adjacent Development. Development adjacent to coastal wetlands shall be sited and designed to prevent significant impacts to wetlands through noise, sediment or other disturbances. Development shall be located as far away from the wetland as feasible, consistent with other habitat values on the site.

Coastal Streams

LCP 20 Coastal Streams and Riparian Vegetation. Coastal streams and adjoining riparian vegetation are environmentally sensitive habitat areas and the natural hydrological system and ecological function of coastal streams shall be protected and preserved.

LCP 21 Development in or Adjacent to a Coastal Stream. Development adjacent to or within the watershed (that portion within the coastal zone) shall be sited and designed to prevent impacts which would significantly degrade the coastal habitat and shall be compatible with the continuance of such habitat areas. This shall include evaluation of erosion and runoff concerns.

LCP 23 County and State Review of Coastal Stream Projects. The State Water Resources Control Board and the County shall ensure that the beneficial use of coastal stream waters is protected, for projects over which it has jurisdiction… .

7.2 NORTH COAST AREA PLAN STANDARDS

AESTHETICS

Site Design and Building Construction

AW-6 Site Selection. Primary site selection for new development shall be locations not visible from Highway 1 as follows:

a. Sites shall be selected where hills and slopes would shield development unless no alternative location exists or the new development provides visitor-serving facilities.

b. New development shall be located so that no portion of a structure extends above the highest horizon line of ridgelines as seen from Highway 1.

LAND USE AND PLANNING

Site Design and Building Construction

AW-6 Site Selection. Primary site selection for new development shall be locations not visible from Highway 1 as follows:

a. Sites shall be selected where hills and slopes would shield development unless no alternative location exists or the new development provides visitor-serving facilities.

b. New development shall be located so that no portion of a structure extends above the highest horizon line of ridgelines as seen from Highway 1.

7.3 COASTAL ZONE LAND USE ORDINANCE STANDARDS

AESTHETICS

Chapter 23.04 (Site Design Standards). This Chapter establishes standards for the design and layout of sites for land uses. The purpose of these standards is to support, through careful site evaluation and design, the establishment of land uses in a manner that is compatible with existing land uses and neighborhoods, and the natural environment. Standards are provided for the following site development features that are relevant to visual resources:

- Parcel size;
- Minimum site area;
- Setbacks;
- Heights; and
- Fencing and screening.

Section 23.04.320 (Outdoor Lights). This Section establishes standards relative to the following lighting features that are applicable to all outdoor night-lighting sources:

- Illumination;
- Light directed onto lot;
- Minimization of light intensity;
- Light sources to be shielded;
- Ground illuminating lights;
- Elevated feature illumination;
- Height of light fixtures; and
- Street lighting.

BIOLOGICAL RESOURCES

Section 23.07.160 (Sensitive Resource Area (SRA)). The Sensitive Resource Area combining designation is applied to identify areas with special environmental qualities, or areas containing unique or endangered vegetation or habitat resources. The purpose of these combining designation standards is to require that proposed uses be designed with consideration of the identified sensitive resources, and the need for their protection, and, where applicable, to satisfy the requirements of the California Coastal Act.

Section 23.07.166 (Minimum Site Design and Development Standards). All uses within a Sensitive Resource Area shall conform to the following standards:

c. Construction and landscaping activities shall be conducted to not degrade lakes, ponds, wetlands, or perennial watercourses within an SRA through filling, sedimentation, erosion, increased turbidity, or other contamination.

e. Where an SRA is applied because of specified species of trees, plants or other vegetation, such species shall not be disturbed by construction activities or subsequent operation of the use, except where authorized by Development Plan approval.

Section 23.07.170 (Environmentally Sensitive Habitats). The provisions of this section apply to development proposed within or adjacent to (within 100 feet of the boundary of) an Environmentally Sensitive Habitat as defined by Chapter 23.11 of this title.

a. Application content. A land use permit application for a project on a site located within or adjacent to an Environmentally Sensitive Habitat shall also include a report by a biologist approved by the Environmental Coordinator.

b. Required findings: Approval of a land use permit for a project within or adjacent to an Environmentally Sensitive Habitat shall not occur unless the applicable review body first finds that:

(1) There will be no significant negative impact on the identified sensitive habitat and the proposed use will be consistent with the biological continuance of the habitat.

(2) The proposed use will not significantly disrupt the habitat.

Section 23.07.174 (Streams and Riparian Vegetation). Coastal streams and adjacent riparian areas are environmentally sensitive habitats. The provisions of this section are intended to preserve and protect the natural hydrological system and ecological functions of coastal streams.

a. Development adjacent to a coastal stream. Development adjacent to a coastal stream shall be sited and designed to protect the habitat and shall be compatible with the continuance of such habitat.

d. Riparian setbacks: New development shall be setback from the upland edge of riparian vegetation the maximum amount feasible. In the rural areas (outside the URL) this setback shall be a minimum of 100 feet. A larger setback will be preferable in both the urban and rural areas depending on parcel configuration, slope, vegetation types, habitat quality, water quality, and any other environmental consideration.

(1) Permitted uses within the setback: Permitted uses are limited to those specified in Section 23.07.172d(1)[1] (for wetland setbacks), provided that the findings required by that section can be made. Additional permitted uses that are not required to satisfy those findings include pedestrian and equestrian trails, and non-structural agricultural uses.

All permitted development in or adjacent to streams, wetlands, and other aquatic habitats shall be designed and/or conditioned to prevent loss or disruption of the habitat, protect water quality, and maintain or enhance (when feasible) biological productivity.

Section 23.07.176 (Terrestrial Habitat Protection). The provisions of this section are intended to preserve and protect rare and endangered species of terrestrial plants and animals by preserving their habitats. Emphasis for protection is on the entire ecological community rather than only the identified plant or animal.

a. Protection of vegetation. Vegetation that is rare or endangered, or that serves as habitat for rare or endangered species shall be protected. Development shall be sited to minimize disruption of habitat.

b. Terrestrial habitat development standards:

(1) Revegetation. Native plants shall be used where vegetation is removed.

(2) Area of disturbance. The area to be disturbed by development shall be shown on a site plan. The area in which grading is to occur shall be defined on site by readily-identifiable barriers that will protect the surrounding native habitat areas.

[1] d(1) Permitted uses within wetland setbacks: Within the required setback buffer, permitted uses are limited to passive recreation, educational, existing non-structural agricultural development in accordance with best management practices, utility lines, pipelines, drainage and flood control of facilities, bridges and road approaches to bridges to cross a stream and roads, with certain provisions.

CULTURAL RESOURCES

Chapter 23.04.200 (Protection of Archaeological Resources Not Within the Archaeologically Sensitive Areas Combining Designation). All development applications that propose development that is not located within the Archaeologically Sensitive Areas combining designation and that meets the following location criteria shall be subject to the standards for the Archaeologically Sensitive Areas Combining Designation in Chapter 23.07: development that is either within 100 feet of the bank of a coastal stream (as defined in the CZLUO), or development that is within 300 feet of such stream where the slope of the site is less than 10 percent. [NOTE: Project is within 100 feet of stream; therefore subject to Chapter 23.07).

Chapter 23.05.140 (Archeological Resources Discovery). In the event archeological resources are unearthed or discovered during any construction activities, the following standards apply:

a. Construction activities shall cease, and the Environmental Coordinator and Planning Department shall be notified so that the extent and location of discovered materials may be recorded by a qualified archeologist, and disposition of artifacts may be accomplished in accordance with state and federal law.

b. In the event archeological resources are found to include human remains, or in any other case when human remains are discovered during construction, the County Coroner is to be notified in addition to the Planning Department and Environmental Coordinator so that proper disposition may be accomplished.

Chapter 23.07.104 (Archaeologically Sensitive Areas). To protect and preserve archaeological resources, the following procedures and requirements apply to development within areas of the coastal zone identified as archaeologically sensitive.

a. Archaeologically sensitive areas. The following areas are defined as archaeologically sensitive:

    1. Any parcel within a rural area which is identified on the rural parcel number list prepared by the California Archaeological Site Survey Office on file with the county Planning Department.

    2. Any parcel within an urban or village area which is located within an archaeologically sensitive area as delineated by the official maps (Part III) of the Land Use Element.

    3. Any other parcel containing a known archaeological site recorded by the California Archaeological Site Survey Office.

b. Preliminary site survey required. Before issuance of a land use or construction permit for development within an archaeologically sensitive area, a preliminary site survey shall be required. The survey shall be conducted by a qualified archaeologist knowledgeable in local Native American culture and approved by the Environmental Coordinator. The County will provide pertinent project information to the Native American tribe(s).

c. When a mitigation plan is required. If the preliminary site survey determines that proposed development may have significant effects on existing, known or suspected archaeological resources, a plan for mitigation shall be prepared by a qualified archaeologist. The County will provide pertinent project information to the Native American tribe(s) as appropriate. The purpose of the plan is to protect the resource. The plan may recommend the need for further study, subsurface testing, monitoring during construction activities, project redesign, or other actions to mitigate the impacts on the resource. Highest priority shall be given to avoiding disturbance of sensitive resources. Lower priority mitigation measures may include use of fill to cap the sensitive resources. As a last resort, the review authority may permit excavation and recovery of those resources. The mitigation

plan shall be submitted to and approved by the Environmental Coordinator, and considered in the evaluation of the development request by the Review Authority.

d. Archeological resources discovery. In the event archeological resources are unearthed or discovered during any construction activities, the standards of Section 23.05.140 of this title shall apply. Construction activities shall not commence until a mitigation plan, prepared by a qualified professional archaeologist reviewed and approved by the Environmental Coordinator, is completed and implemented. The County will provide pertinent project information to the affected Native American tribe(s) and consider comments prior to approval of the mitigation plan. The mitigation plan shall include measures to avoid the resources to the maximum degree feasible and shall provide mitigation for unavoidable impacts. A report verifying that the approved mitigation plan has been completed shall be submitted to the Environmental Coordinator prior to occupancy or final inspection, whichever occurs first.

HYDROLOGY AND WATER QUALITY

Chapter 23.05 (Site Development Standards). This Chapter establishes standards for the preparation of sites for development and construction activities, to protect the health, safety and welfare of persons living on or near a project site by protecting against unwarranted or unsafe grading, or soil erosion resulting from grading; by defining appropriate circumstances for tree removal; by providing for adequate drainage and fire protection facilities; and by identifying appropriate standards for other aspects of site development.

Sections 23.05.022 through 23.05.039. Establish standards for grading and excavation activities to minimize hazards to life and property; protect against erosion and the sedimentation of water courses; and protect the safety, use and stability of public rights-of-way and drainage channels. Additional standards for grading within a Sensitive Resource Area are in Sections 23.07.160 et seq.[2]

Section 23.07.060 - Flood Hazard Area (FH). The Flood Hazard combining designation is applied to areas where terrain characteristics would present new developments and their users with potential hazards to life and property from potential inundation by a 100-year frequency flood or within coastal high hazard areas. These standards are also intended to minimize the effects of development on drainage ways and watercourses.

Section 23.07.062 - Applicability of Flood Hazard Standards. All uses proposed within a Flood Hazard combining designation are subject to the standards of Sections 23.07.064 through 23.07.066, except:

a. Temporary uses: With the approval of the Director of Public Works, the of Planning and Building Director may authorize construction or placement of a temporary structure or use within a Flood Hazard area pursuant to the required land use permit without meeting these standards, provided that the structure or use will not be in place from October 15, to April 15.

b. Emergency work: Emergency work may be undertaken where necessary to preserve life or property. Within 48 hours after commencement of such work, the Director of Public Works is to be notified and an application filed with the Department of Planning and Building in compliance with the provisions of Section 23.07.064.

Section 23.07.064 - Flood Hazard Area Permit and Processing Requirements. Drainage Plan approval is required where any portion of the proposed site is located within a Flood Hazard combining designation, in addition to all other permits required by this title, state, and federal law.

[2] SRAs are addressed in CZLUO Section 23.07.170- not 23.07.160; see Section 4.4, *Biological Resources*.

Section 23.07.065 - General Hazard Avoidance:

a. New Development in Flood Hazard Areas. New structural development, including expansions, additions and improvements to existing development, shall be located outside of the flood hazard areas to the maximum extent feasible. All new structural development located in a flood hazard areas, including expansions, additions, improvements, and repairs to existing development, shall be constructed consistent with the standards set forth in Section 23.07.066.

Section 23.07.066 - Construction Standards:

a. Construction, general: See Standards 1 – 12.

b. Storage and Processing: The storage or processing of materials that in time of flooding are buoyant, flammable, or explosive; that could be injurious to human, animal, or plant life; or that may unduly affect the capacity of the floodway or unduly increase flood heights is not permitted. Storage of other material or equipment may be allowed if not subject to major damage by floods and if firmly anchored to prevent flotation, or if readily removable from the area within the time available after flood warning.

d. Certification of Compliance. The following certifications shall be filed with the Building Official prior to final building inspection:

(1) Upon completion of any structure within a flood hazard combining designation, compliance with elevation requirements shall be certified by a registered civil engineer or licensed land surveyor. Such certification shall include as a minimum the elevation of the lowest floor. If the structure has been flood-proofed in conformance with Section 23.07.066.a(11) above, the certification shall include the elevation to which the structure has been flood-proofed. Elevations shall be based on the National Geodetic Vertical Datum of 1929.

(2) Where flood-proofing is used, a registered civil engineer or architect shall certify that the flood-proofing methods are adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the 100-year flood.

Section 23.07.174 (Streams and Riparian Vegetation). Coastal streams and adjacent riparian areas are environmentally sensitive habitats. The provisions of this section are intended to preserve and protect the natural hydrological system and ecological functions of coastal streams.

a. Development adjacent to a coastal stream. Development adjacent to a coastal stream shall be sited and designed to protect the habitat and shall be compatible with the continuance of such habitat.

GEOLOGY AND SOILS

Section 23.07.084 (Application Content - Geologic and Soils Report Required). This Section specifies that all land use permit applications for projects located within a Geologic Study Area (except those exempted by Section 23.07.082) shall be accompanied by a report prepared by a certified engineering geologist and/or registered civil engineer (as to soils engineering), as appropriate.

Chapter 23.05 (Site Development Standards). This Chapter establishes standards for the preparation of sites for development and construction activities, to protect the health, safety and welfare of persons living on or near a project site by protecting against unwarranted or unsafe grading, or soil erosion resulting from grading; by defining appropriate circumstances for tree removal; by providing for adequate drainage and fire protection facilities; and by identifying appropriate standards for other aspects of site development.

Section 23.05.020 (Grading). Sections 23.05.022 through 23.05.039 establish standards for grading and excavation activities to minimize hazards to life and property; protect against erosion and the sedimentation of water courses; and protect the safety, use and stability of public rights-of-way and drainage channels. Additional standards for grading within a Sensitive Resource Area are in Sections 23.07.160 et seq.

Section 23.07.174 (Streams and Riparian Vegetation). Coastal streams and adjacent riparian areas are environmentally sensitive habitats. The provisions of this section are intended to preserve and protect the natural hydrological system and ecological functions of coastal streams.

a. Development adjacent to a coastal stream. Development adjacent to a coastal stream shall be sited and designed to protect the habitat and shall be compatible with the continuance of such habitat.

d. Riparian setbacks: New development shall be setback from the upland edge of riparian vegetation the maximum amount feasible. In the rural areas (outside the URL) this setback shall be a minimum of 100 feet. A larger setback will be preferable in both the urban and rural areas depending on parcel configuration, slope, vegetation types, habitat quality, water quality, and any other environmental consideration.

   (1) Permitted uses within the setback: Permitted uses are limited to those specified in Section 23.07.172d(1) (for wetland setbacks), provided that the findings required by that section can be made. Additional permitted uses that are not required to satisfy those findings include pedestrian and equestrian trails, and non-structural agricultural uses. All permitted development in or adjacent to streams, wetlands, and other aquatic habitats shall be designed and/or conditioned to prevent loss or disruption of the habitat, protect water quality, and maintain or enhance (when feasible) biological productivity.

LAND USE AND PLANNING

Section 23.01.031 (Land Use and Coastal Development Permits Required). Pursuant to this Section, no person shall establish, construct, alter, or replace any use of land, structure, or building without first obtaining all permits required by CZLUO Chapter 23.03 or other applicable section of Title 23, except as otherwise provided by Section 23.01.031. Approval of a land use permit pursuant to Title 23 also constitutes approval of a Coastal Development Permit in compliance with the County's LCP and California Coastal Act.

Section 23.01.033 (Consistency With the Land Use Element and Local Coastal Plan Required). This Section specifies that no new use of land, buildings, division of land, or other development shall be established, and no application for such use, land division, or other permit required pursuant to Title 23 shall be approved, unless the proposed use is determined to be allowable in the land use category where the proposed site is located. When an application is accepted for processing, such application shall not be approved unless:

a. The proposed use is identified as an "A", "S" or "P" use by Table O, Part I of the Land Use Element in the land use category where the site for the proposed use is located;

b. The proposed use or division satisfies the standards of the Land Use Element (Part II) applicable to the specific planning area in which the site is located, including any standards may limit the type of land uses or parcel sizes normally allowable in a given land use category;

c. The proposed use or division satisfies any combining designation planning area standards applied to the site by the Land Use Element (Part II), including any such standards that may limit the type of land uses or parcel sizes normally allowable in a given land use category;

d. The proposed use or division satisfies any policies, programs, and standards contained in the Local Coastal Plan Policy Document; and

e. The proposed use or division satisfies the terms, conditions and other requirements of all implementing regulations adopted as part of the Local Coastal Program including but not limited to any categorical exclusion.

Section 23.01.034 (Compliance With Standards Required). This Section specifies that no use of land, buildings, or division of land shall be established and no application for a use of land, buildings, or land division pursuant to County Code Title 21 shall be approved unless the proposed land use, building, or parcels satisfy all applicable requirements of this Code.

Chapter 23.04 (Site Design Standards). This Chapter establishes standards for the design and layout of sites for land uses, new developments, and divisions of land, where allowed by the Land Use Element. The purpose of these standards is to support, through site evaluation and design, the establishment of land uses in a manner that is compatible with existing land uses and neighborhoods; the natural environment; and the health and safety of County residents. Standards are provided for various site development features (parcel size; minimum site area; setbacks; heights; fencing and screening; and outdoor lights, among others).

Section 23.04.050 (Non-Agricultural Uses in the Agriculture Land Use Category). This section establishes permit requirements and standards for non-agricultural uses in the AG category.

b. Supplemental Non-Agricultural Uses.

(1) Supplemental non-agricultural uses defined: Uses allowed by Coastal Table "O" in the Agriculture category that are not directly related to the principal agricultural use on the site.

(3) Permit requirement: Minor use permit approval, unless Development Plan approval is otherwise required by another provision of this title or planning area standard of the Land Use Element.

(4) Required findings: Supplemental non-agricultural uses may be established only if the following findings are made by the applicable approval body:

(i) For prime soils, it has been demonstrated that no alternative project site exists except on prime soils; and
(ii) The least amount of prime soils possible will be converted; and
(iii) The proposed use will not conflict with surrounding agricultural lands and uses.

Chapter 23.05 (Site Development Standards). This Chapter establishes standards for the preparation of sites for development and construction activities, in order to protect against unwarranted or unsafe grading, or soil erosion resulting from grading; by defining appropriate circumstances for tree removal; by providing for adequate drainage and fire protection facilities; and by identifying appropriate standards for other aspects of site development.

Chapter 23.06 (Operational Standards). This Chapter establishes standards to be applied to the operation and conduct of land uses after their establishment, and on a continuing basis. These standards are established to protect from the adverse effects of excessive or objectionable emissions of noise or air contaminants that may be generated by land uses, activities, processes, or equipment.

Chapter 23.07 (Combining Designation Standards). The purpose of Combining Designation standards is to require project design that will give careful consideration to the land features, structures, and activities identified by the Combining Designations.

The Project site is designated with various Combining Designations. Accordingly, the Project would be subject to compliance with the following CZLUO sections:

- San Simeon Creek Flood Hazard (FH): Sections 23.07.060 through 23.07.066;
- Geologic Study Area (GSA): Sections 23.07.080 through 23.07.086;
- Sensitive Resource Area (SRA): Sections 23.07.160 through 23.07.166;
- Environmentally Sensitive Habitat, Terrestrial Habitat (ESH-TH): Section 23.07.176;
- Environmentally Sensitive Habitat, Coastal Creek (ESH-CC): Sections 23.07.170 and 23.07.174;
- Local Coastal Program (LCP): Section 23.07.120.

Chapter 23.08 (Special (S) Uses). The purpose of this Chapter is to establish special additional standards for certain land uses that may affect adjacent properties, the neighborhood, or the community even if the uniform standards of Chapter 23.04 and all other standards of Title 23 are met. Such uses are defined as "S" and "S-P" uses by Coastal Table O, Chapter 7, Part I of the Land Use Element. This Chapter establishes appropriate standards for permit processing, and the location, design, and operation of special uses, to avoid unanticipated problems or hazards, and to assure they will be consistent with the County General Plan.

Section 23.08.280 (Transportation, Utilities, and Communication (S-13)). Transportation and Public Utility Facilities identified as allowable, S-13 uses by the Land Use Element (see Coastal Table 0, Part I of the Land Use Element) are subject to CZLUO Section 23.08.288, *Public Utility Facilities*.

Section 23.08.288 (Public Utility Facilities). The requirements of this section apply to Public Utility Facilities where designated as S-13 uses by Coastal Table "O." Public Utility Facilities (other than electric and communications transmission and natural gas regulation and distribution) require Development Plan approval pursuant to Section 23.02.034, *Development Plan.*

(a) Permit Requirements. In addition to the emergency repair and the general permit requirements of Section 23.08.286 (a) and (b), development plan approval is required for any new facility or modification of any existing facility in the agriculture, rural lands, residential, office and professional, and commercial land use categories. Development plan approval is required for any new facility or modification to any existing facility which would increase the structure heights above those specified in Section 23.04.124 or modify any operational standards causing an increase in any of the categories specified in Chapter 23.06 of this title.

(b) Application Contents. In addition to the application materials required by Chapter 23.02, permit applications shall also include descriptions of:

(1) The proposed design capacity of the facility; the operating schedule; and how the proposed facility interacts with incoming and outgoing utility services.
(2) Plans for any overhead or underground transmission lines, transformers, inverters, switchyards or any required new or upgraded off-site transmission facilities.
(3) Proposed erosion control measures, revegetation, screening and landscaping during construction and operation.
(4) An oil and hazardous material spill contingency plan, including a demonstration that all materials can be contained on-site.
(5) For electric and telephone centers, estimates of the non-ionizing radiation generated and/or received by the facility. These will include estimates of the maximum electric and magnetic field strengths at the edge of the facility site, the extent that measurable fields extend in all directions from the facility.
(6) The number and identification by trades of estimated construction and operation forces. If construction is estimated to take over six months, the construction workforce shall be estimated for each six-month period. The estimates shall include numbers of locally hired employees and

employees who will move into the area, and a discussion of the estimated impact that employees moving into the area will have on housing, schools and traffic.

(c) Development Standards. The following standards apply in addition to any that may be established as conditions of approval:

(1) Environmental Quality Assurance. An environmental quality assurance program covering all aspects of construction and operation shall be submitted prior to construction of any project component. This program will include a schedule and plan for monitoring and demonstrating compliance with all conditions required by the development plan. Specific requirements of this environmental quality assurance program will be determined during the environmental review process and development plan review and approval process.

(2) Clearing and Revegetation. The land area exposed and the vegetation removed during construction shall be the minimum necessary to install and operate the facility. Topsoil will be stripped and stored separately. Disturbed areas no longer required for operation will be regraded, covered with topsoil and replanted during the next appropriate season.

(3) Fencing and Screening. Public utility facilities shall be screened on all sides. An effective visual barrier will be established through the use of a solid wall, fencing and/or landscaping. The adequacy of the proposed screening will be determined during the land use permitting process.

(d) Limitation on Use, Sensitive Environmental Areas. Uses shall not be allowed in sensitive areas such as on prime agricultural soils, sensitive resource areas, environmentally sensitive habitats, or hazard areas, unless a finding is made by the applicable approval body that there is no other feasible location on or off-site the property. Applications for public utility facilities in the above sensitive areas shall include a feasibility study, prepared by a qualified professional approved by the environmental coordinator. The feasibility study shall include a constraints analysis, and analyze alternative locations.

NOISE

Chapter 23.06 (Operational Standards). This Chapter establishes standards to be applied to the operation and conduct of land uses after their establishment, and on a continuing basis. These standards are established to protect residents from the adverse effects of excessive or objectionable emissions of noise that may be generated by land uses, activities, processes or equipment. The purpose of this chapter is also to identify acceptable levels of noise and other emissions in various land use categories, and to set forth procedures for coordinating the review of development projects with the APCD.

Section 23.06.040 (Noise Standards). CZLUO Sections 23.06.044 through 23.06.050 establish standards for acceptable exterior and interior noise levels and describe how noise is to be measured. These standards are intended to protect persons from excessive noise levels, which are detrimental to the public health, welfare, and safety and contrary to the public interest. It is the intent of this chapter to protect persons from excessive levels of noise within or near various residential development and other specified noise-sensitive land uses.

Section 23.06.042 (Exceptions to Noise Standards). The standards of CZLUO Sections 23.06.044 through 23.06.050 are not applicable to noise from the following sources:

(2) The use of any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work to protect life or property;

(4) Noise sources associated with construction, provided such activities do not take place before 7:00 a.m. or after 9:00 p.m. any day except Saturday or Sunday, or before 8:00 a.m. or after 5:00 p.m. on Saturday or Sunday; and

(8) Noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities.

Section 23.06.044 (Exterior Noise Level Standards). The exterior noise level standards of this section are applicable when a land use affected by noise is one of the following noise-sensitive uses which are defined in the land use element and local coastal plan: residential uses listed in Table O, framework for planning, except for residential accessory uses and temporary dwellings; health care services (hospitals and similar establishments only); hotels and motels; bed and breakfast facilities; schools (preschool to secondary, college and university, specialized education and training); churches; libraries and museums; public assembly and entertainment; offices, and outdoor sports and recreation.

(1) No person shall create any noise or allow the creation of any noise at any location within the unincorporated areas of the county on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any of the preceding noise-sensitive land uses situated in either the incorporated or unincorporated areas to exceed the noise level standards in the following table. When the receiving noise-sensitive land use is outdoor sports and recreation, the following noise level standards shall be increased by ten dB.

Exterior Noise Level Standards

Noise Standard	Daytime (7 a.m. to 10 p.m.)	Nighttime[1] (10 p.m. to 7 a.m.)
Hourly equivalent sound level (Leq, dB) 50 45	50	45
Maximum level, dB 70 65	70	65
Notes: 1. Applies only to uses that operate or are occupied during nighttime hours.		

(2) In the event the measured ambient noise level exceeds the applicable exterior noise level standard in subsection (1), the applicable standard shall be adjusted so as to equal the ambient noise level plus one dB.

(3) Each of the exterior noise level standards specified in subsection (1) shall be reduced by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

(4) If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the exterior noise level standards.

Section 23.06.060 (Vibration Standards). Any land use conducted in or within one-half mile of an urban or village reserve line is to be operated to not produce detrimental earth-borne vibrations perceptible at the points of determination identified in the following table:

CZLUO Vibration Standards

Land Use Category in Which Vibration Source is Located	Point of Determination
Residential, office and professional, recreation, commercial	At or beyond any lot line of the lot containing the use
Industrial	At or beyond the boundary of the industrial category

Section 23.06.062 (Exceptions to Standards). The vibration standards of this chapter are not applicable to:

(1) Vibrations from construction, the demolition of structures, surface mining activities or geological exploration between 7:00 a.m. and 9:00 p.m.;

(2) Vibrations from moving sources such as trucks and railroads.

7.4 SAN LUIS OBISPO COUNTY BUILDING AND CONSTRUCTION ORDINANCE

GEOLOGY AND SOILS

In California, construction regulations consist of the California Building Code (CBC) and any additions or modifications to the CBC implemented by the local government. The San Luis Obispo County Building and Construction Ordinance (Title 19 of the San Luis Obispo County Code) (BCO) was established and adopted to protect and promote the public health, safety, and welfare. This ordinance is intended to regulate the design and construction of buildings and structures through basic standards for site preparation, erosion and sedimentation control, construction activities, quality of materials, occupancy classifications, the location and maintenance of buildings and structures and certain equipment associated with buildings and structures. According to BCO Chapter 19.3, *Building Code*, the 2010 CBC was adopted, as modified, amended, and/or supplemented.

HYDROLOGY AND WATER QUALITY

Refer to the BCO above.

7.5 SAN LUIS OBISPO AIR POLLUTION CONTROL DISTRICT STANDARDS

AIR QUALITY

Rule 202 - Permits

A. General

1. Authority to Construct: Any person building, erecting, altering or replacing any article, machine, equipment or other contrivance, the use of which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, shall first obtain authorization for such construction from the Air Pollution Control Officer.

2. Permits to Operate: Before any article, machine, equipment or other contrivance, the use of which may cause, increase, eliminate, reduce or control the issuance of air contaminants may be operated or used, a Permit to Operate shall be obtained from the Control Officer, except as provided in subsection A.5.

Rule 401 – Visible Emissions

A. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any hour which is:

1. As dark or darker in shade as that designated as No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines.

2. Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection A.1 of this Rule.

Rule 402 - Nuisance

A. A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Rule 431 - Stationary Internal Combustion Engines

D. Exemptions: With the exception of recordkeeping and reporting requirements necessary to justify an exemption, the provisions of this Rule shall not apply to the operation of stationary internal combustion engines used under the following conditions: 3) Emergency standby engines operated during either an emergency or maintenance operation. Maintenance operation is limited to 100 hours per calendar year.

G. Recordkeeping: The operator of any engine subject to the provisions of Section D of this Rule shall maintain an inspection log that includes, on a monthly basis the following data:

a. Date and results of each engine inspection;
b. A summary of any preventive or corrective maintenance taken;
c. The total hours of operation;
d. The type and quantity of fuel used; and
e. Any additional information required in the Engine Operator Inspection Plan.

The operator shall maintain the inspection log for a period of three (3) years after the date of each entry. The log shall be available for inspection by the District upon request.

7.6 PROJECT MITIGATION MEASURES

AESTHETICS

AES-1 Prior to Grading Permit issuance, the CCSD shall confirm that the plans and specifications stipulate that, Project construction shall implement standard practices to minimize potential adverse impacts to the site's visual character, including the following:

- Construction staging areas shall be located as far as practicable from sensitive receptors; and
- Construction areas shall receive appropriate routine maintenance to minimize unnecessary debris piles.

AES-2 Prior to Grading Permit issuance: areas of the site where native vegetation has been removed and where water facilities are not proposed, shall be revegetated with indigenous plants; and vegetation comprised of indigenous plants shall be provided along the Project site's western boundary to screen the proposed water facilities from San Simeon Creek Campground view (northeastern most camp sites 18, 19, 21, 23, and 24). Prior to revegetation and new vegetation, a Landscape Plan (for the areas of revegetation and along the site's western boundary) shall be prepared for review and approval by the County.

AIR QUALITY

AQ-1 General Air Quality. The following measures shall be incorporated into the construction phase of the Project and shown on all applicable plans:

- Maintain all construction equipment in proper tune according to manufacturer's specifications;
- Fuel all off-road and portable diesel powered equipment, including but not limited to bulldozers, graders, cranes, loaders, scrapers, backhoes, generator sets, compressors, auxiliary power units, with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road); and
- Maximize to the extent feasible, the use of diesel construction equipment meeting the CARB's 1996 or newer certification standard for off-road heavy-duty diesel engines.

Fugitive PM_{10} Mitigation Measures

All required PM_{10} measures shall be shown on applicable grading or construction plans. In addition, the developer shall designate personnel to insure compliance and monitor the effectiveness of the required dust control measures (as conditions dictate, monitor duties may be necessary on weekends and holidays to insure compliance); the name and telephone number of the designated monitor(s) shall be provided to the SLOAPCD prior to construction/ grading permit issuance

- Reduce the amount of the disturbed area where possible;
- Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (nonpotable) water should be used whenever possible;
- All dirt stock-pile areas should be sprayed daily as needed;
- Permanent dust control measures identified in the approved Project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities;
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114;
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site; and
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.

BIOLOGICAL RESOURCES

BIO-1 All work areas shall be visibly flagged or staked prior to construction. Construction activities shall be limited to these approved work areas except with prior authorization from regulatory agencies.

BIO-2 A Worker Environmental Awareness Program (WEAP) shall be implemented to educate all construction personnel of the area's environmental concerns and conditions and relevant environmental protection measures. The WEAP will include environmental concerns and appropriate work practices, including spill prevention, emergency response measures, protection of sensitive resources, and proper implementation of BMPs, to all construction and maintenance personnel. All new workers that arrive after construction has started shall be trained under the WEAP within two days' time.

BIO-3 A qualified biologist or botanist shall conduct a preconstruction clearance survey for special-status plant species within the Project site. If present, any special-status plants shall be clearly flagged for avoidance with a suitable buffer zone during construction. If avoidance is not possible, the Project applicant will discuss potential relocation strategies with applicable regulatory agencies.

BIO-4 Prior to construction, all heavy equipment that will be left onsite in laydown yards shall be washed offsite and cleaned of all potential non-native weed seeds. Worker trucks shall be washed daily if they will be driven offroad or shall otherwise be left parked in laydown yards or on existing roads during construction.

BIO-5 All excavated material shall be removed from the Project site and disposed of properly or reused elsewhere. If left onsite, the material shall be moved into an area where it will not wash or erode into any riparian areas and shall be suitably covered or watered to reduce the potential for dust during high winds or rain events.

BIO-6 The Project applicant shall develop and implement an adaptive management program (AMP) for post construction operations. This plan shall be incorporated indefinitely until the Project facilities are no longer in use or until deemed no longer necessary by applicable regulatory agencies. The AMP is intended to monitor and protect the lagoon and riparian habitats adjacent to the Project site and, by extension, protect the species that inhabit it. The primary goal of the AMP would be to monitor the response of the lagoon and riparian habitats to the Project and, based on any noted adverse changes in these habitats, to adjust operations so that the amount of treated water that is injected or discharged back into the system, is either increased or decreased to restore affected habitat features. This may require a combination of any of the following:

- Monthly stream surveys during the period that the Project is actively drawing groundwater (currently expected to be May through October). The surveys would document the upstream extent of inundation in each water body, as well as water depth at predetermined locations to measure changes in water levels;

- Surveys for tidewater goby, steelhead, CRLF, western pond turtle, and/or two-striped garter snake to measure population levels over time; and

- Monitoring of riparian vegetation in the water bodies and in their upland extents.

BIO-7 The Project applicant shall delay the annual period of groundwater pumping to the greatest extent possible, preferably after June, in order to maximize the amount of time for steelhead to migrate up and down San Simeon Creek.

BIO-8 Preconstruction diurnal and nocturnal surveys shall be conducted for CRLF in the percolation ponds and surrounding area within 48 hours of the start of construction. Any CRLF detected during surveys shall be relocated to areas outside of the construction zone, i.e. to San Simeon Creek, San Simeon Creek Lagoon, or Van Gordon Creek. Exclusion fencing shall be placed around work areas to avoid or minimize the risk of CRLF migrating into work areas during upland movements. The biologist conducting the surveys and performing any relocations shall hold a valid 10(a)(1)(A) recovery permit and Scientific Collecting Permit allowing take of CRLF.

BIO-9 All Project-related trash, food or otherwise, shall be disposed of after use in appropriate secured containers. These containers shall be emptied offsite regularly.

BIO-10 No more than one week prior to construction, a qualified biologist shall conduct a preconstruction nesting bird clearance survey in all work areas and all areas within 500 feet of the general construction zone. Active nests shall be given an avoidance buffer, typically 300 feet for non-listed, non-raptor species, and 500 feet for listed or raptor species. This buffer shall remain in place until the young fledge or the nest otherwise becomes inactive, and may be reduced with approval from CDFW and/or USFWS.

BIO-11 If deemed necessary by the CDFW, a preconstruction roosting bat survey shall be conducted within one week prior to construction. Any bat roosts found in the Project vicinity shall be protected with coordination from CDFW.

BIO-12 All construction shall occur between dawn and dusk.

BIO-13 In areas adjacent to riparian habitat, construction noise shall be minimized to the amount necessary to avoid or reduce the risk of adverse impacts to wildlife.

BIO-14 In areas within 100 feet of riparian habitat, BMPs shall be implemented. These should include, but are not limited to, sedimentation control, erosion control, spill prevention and cleanup, and hazardous materials.

BIO-15 The Project Applicant shall consult with the Corps, CDFW, and Regional Board regarding potential impacts and required mitigation once the final Project design is available. If impacts are anticipated to occur to instream and riparian habitats, wetland permits may be required from these agencies.

CULTURAL RESOURCES

CUL-1 Prior to the start of construction, earthmoving personnel shall receive a cultural and paleontological sensitivity training detailing the types of artifacts and fossils that may be encountered and procedures to follow if finds occur.

CUL-2 The Applicant shall retain qualified archaeological monitor and Native American monitor, approved by the County Environmental Coordinator, to be present during all site disturbance activities within the boundaries of previously recorded sites. Monitoring reports shall be retained by the Applicant and shared with the Environmental Coordinator's Office upon request.

NOISE

NOI-1 Prior to Grading Permit issuance, the Project applicant shall demonstrate, to the satisfaction of the County of San Luis Obispo Planning and Building Manager that the Project complies with the following:

- Construction contracts specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state required noise attenuation devices.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.
- Construction equipment staging areas shall be located away from adjacent sensitive receptors.

- Construction activities shall not take place outside of the allowable hours specified by the County's Municipal Code Section 23.06.042, (7:00 a.m. to 9:00 p.m. any day except Saturday or Sunday, or 8:00 a.m. to 5:00 p.m. on Saturday or Sunday).

8.0 CONSULTANT RECOMMENDATION

Based on the information and environmental analysis contained in the Initial Study/Environmental Checklist, it is recommended that the Cambria Community Services District prepare a Mitigated Negative Declaration for the Cambria Emergency Water Supply Project. We find that the Project could have a significant effect on a number of environmental issues, but that mitigation measures have been identified that reduce such impacts to less than significant. It is recommended that the second category be selected for the CCSD's determination; refer to Section 9.0, *Lead Agency Determination*.

June 20, 2014
Date

Rita Garcia
Project Manager
Planning/Environmental Services
RBF Consulting

This page intentionally left blank.

9.0 LEAD AGENCY DETERMINATION

On the basis of this initial evaluation:

I find that the proposed use COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	
I find that although the proposal could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described in Section 4.0 have been added. A MITIGATED NEGATIVE DECLARATION will be prepared.	X
I find that the proposal MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	
I find that the proposal MAY have a significant effect(s) 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, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	

Signature

Cambria Community Services Department
Agency

Mr. Jerry Gruber, General Manager
Printed Name/Title

June 20, 2014
Date

This page intentionally left blank.

Appendix A
Air Quality/Greenhouse Gas Analysis Data

Parenthetical CALEEMOD Assumptions
For: Cambria Emergency Water Supply Project
Date: June 2014

CONSTRUCTION

Grading 1 (2014)

- 50 cubic yards of cut and 50 cubic yards of fill
- 2 months

Equipment:

Type	Quantity	Hours of Daily Operation
Rubber Tired Dozers	1	8
Rollers	1	8
Rubber Tired Loaders	1	8
Skid Steer Loaders	1	8

Building Construction (2014)

- 4 months

Equipment:

Type	Quantity	Hours of Daily Operation
Cranes	1	7
Excavators	1	8
Other Construction Equipment	2	8
Rough Terrain Forklifts	1	6
Rubber Tired Loaders	1	6
Skid Steer Loaders	1	8
Trenchers	1	6

Architectural Coating (2014)

- 0.5 month

Equipment:

Type	Quantity	Hours of Daily Operation
Air Compressor	1	6

Cambria Emergency Water Supply Project

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	3.00	130,680.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage includes area of pond

Construction Phase - anticipated schedule

Off-road Equipment - anticipated equipment

Off-road Equipment - anticipated equipment

Grading - 50 CY of cut and 50 CY of fill balanced on site

Trips and VMT - 50 CY of cut and 50 CY of fill balanced on site, no import or export. Distance is movement of material across the site.

Architectural Coating - Pre-engineered equipment containers will be painted. Field painting will be limited to process piping and misc. equipment.

Vehicle Trips - Project is not a trip generating land use.

Energy Use - based on total installed load of 375 kW for 3 acres (130,680 SF) over an entire year.

Area Coating - Pre-engineered equipment containers will be painted. Field painting will be limited to process piping and misc. equipment.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	65,340.00	1,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	196,020.00	0.00
tblAreaCoating	Area_Nonresidential_Interior	196020	0
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	NumDays	220.00	94.00
tblConstructionPhase	NumDays	6.00	52.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	12/4/2014	11/17/2014
tblConstructionPhase	PhaseEndDate	1/17/2015	11/18/2014
tblConstructionPhase	PhaseStartDate	11/19/2014	11/1/2014
tblConstructionPhase	PhaseStartDate	10/1/2014	8/1/2014
tblEnergyUse	T24E	0.00	3.00
tblGrading	AcresOfGrading	0.00	3.00
tblGrading	MaterialExported	0.00	50.00
tblGrading	MaterialImported	0.00	50.00
tblLandUse	LandUseSquareFeet	0.00	130,680.00
tblLandUse	LotAcreage	0.00	3.00
tblOffRoadEquipment	HorsePower	199.00	255.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.36	0.40
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.50	0.50

tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.10

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.2874	3.0309	1.9748	2.9500e-003	0.1977	0.1453	0.3430	0.0970	0.1338	0.2308	0.0000	277.8036	277.8036	0.0653	0.0000	279.1741
Total	**0.2874**	**3.0309**	**1.9748**	**2.9500e-003**	**0.1977**	**0.1453**	**0.3430**	**0.0970**	**0.1338**	**0.2308**	**0.0000**	**277.8036**	**277.8036**	**0.0653**	**0.0000**	**279.1741**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.2874	3.0309	1.9748	2.9500e-003	0.1977	0.1453	0.3430	0.0970	0.1338	0.2308	0.0000	277.8033	277.8033	0.0653	0.0000	279.1738
Total	**0.2874**	**3.0309**	**1.9748**	**2.9500e-003**	**0.1977**	**0.1453**	**0.3430**	**0.0970**	**0.1338**	**0.2308**	**0.0000**	**277.8033**	**277.8033**	**0.0653**	**0.0000**	**279.1738**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5482	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	114.0489	114.0489	5.1600e-003	1.0700e-003	114.4880
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5482**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**114.0490**	**114.0490**	**5.1600e-003**	**1.0700e-003**	**114.4880**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5482	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	114.0489	114.0489	5.1600e-003	1.0700e-003	114.4880
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5482**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**114.0490**	**114.0490**	**5.1600e-003**	**1.0700e-003**	**114.4880**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	8/1/2014	9/30/2014	6	52	
2	Building Construction	Building Construction	8/1/2014	11/18/2014	6	94	

3	Architectural Coating	Architectural Coating	11/1/2014	11/17/2014	6	14	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 1,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Building Construction	Cranes	1	7.00	226	0.29
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Excavators	0	8.00	162	0.38
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Grading	Graders	0	8.00	174	0.41
Building Construction	Excavators	1	8.00	162	0.38
Building Construction	Other Construction Equipment	2	8.00	171	0.42
Building Construction	Rough Terrain Forklifts	1	6.00	100	0.40
Building Construction	Rubber Tired Loaders	1	6.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Skid Steer Loaders	1	8.00	64	0.37
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Trenchers	1	6.00	80	0.50
Building Construction	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	6.00	13.00	13.00	0.10	LD_Mix	HDT_Mix	HHDT
Building Construction	8	55.00	21.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1582	0.0000	0.1582	0.0862	0.0000	0.0862	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0594	0.6897	0.4259	5.1000e-004		0.0328	0.0328		0.0302	0.0302	0.0000	49.2153	49.2153	0.0145	0.0000	49.5207
Total	**0.0594**	**0.6897**	**0.4259**	**5.1000e-004**	**0.1582**	**0.0328**	**0.1910**	**0.0862**	**0.0302**	**0.1164**	**0.0000**	**49.2153**	**49.2153**	**0.0145**	**0.0000**	**49.5207**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	9.0000e-005	6.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.9300e-003	5.9300e-003	0.0000	0.0000	5.9300e-003
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	1.6400e-003	2.4500e-003	0.0224	3.0000e-005	2.5000e-003	2.0000e-005	2.5300e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.2929	2.2929	1.6000e-004	0.0000	2.2963
Total	**1.6900e-003**	**2.5400e-003**	**0.0231**	**3.0000e-005**	**2.5000e-003**	**2.0000e-005**	**2.5300e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**2.2988**	**2.2988**	**1.6000e-004**	**0.0000**	**2.3022**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1582	0.0000	0.1582	0.0862	0.0000	0.0862	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0594	0.6897	0.4259	5.1000e-004		0.0328	0.0328		0.0302	0.0302	0.0000	49.2152	49.2152	0.0145	0.0000	49.5206
Total	**0.0594**	**0.6897**	**0.4259**	**5.1000e-004**	**0.1582**	**0.0328**	**0.1910**	**0.0862**	**0.0302**	**0.1164**	**0.0000**	**49.2152**	**49.2152**	**0.0145**	**0.0000**	**49.5206**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	9.0000e-005	6.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.9300e-003	5.9300e-003	0.0000	0.0000	5.9300e-003
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6400e-003	2.4500e-003	0.0224	3.0000e-005	2.5000e-003	2.0000e-005	2.5300e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	2.2929	2.2929	1.6000e-004	0.0000	2.2963
Total	**1.6900e-003**	**2.5400e-003**	**0.0231**	**3.0000e-005**	**2.5000e-003**	**2.0000e-005**	**2.5300e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**2.2988**	**2.2988**	**1.6000e-004**	**0.0000**	**2.3022**

3.3 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1797	2.0589	1.0902	1.7000e-003		0.1056	0.1056		0.0971	0.0971	0.0000	163.1882	163.1882	0.0482	0.0000	164.2009
Total	**0.1797**	**2.0589**	**1.0902**	**1.7000e-003**		**0.1056**	**0.1056**		**0.0971**	**0.0971**	**0.0000**	**163.1882**	**163.1882**	**0.0482**	**0.0000**	**164.2009**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.2353	0.1925	4.1000e-004	0.0114	4.9200e-003	0.0163	3.2600e-003	4.5300e-003	7.7800e-003	0.0000	37.8384	37.8384	4.1000e-004	0.0000	37.8470
Worker	0.0163	0.0243	0.2230	2.8000e-004	0.0249	2.4000e-004	0.0251	6.6100e-003	2.2000e-004	6.8300e-003	0.0000	22.7965	22.7965	1.6200e-003	0.0000	22.8306
Total	**0.0373**	**0.2597**	**0.4155**	**6.9000e-004**	**0.0363**	**5.1600e-003**	**0.0414**	**9.8700e-003**	**4.7500e-003**	**0.0146**	**0.0000**	**60.6350**	**60.6350**	**2.0300e-003**	**0.0000**	**60.6776**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.1797	2.0589	1.0902	1.7000e-003		0.1056	0.1056		0.0971	0.0971	0.0000	163.1880	163.1880	0.0482	0.0000	164.2007
Total	**0.1797**	**2.0589**	**1.0902**	**1.7000e-003**		**0.1056**	**0.1056**		**0.0971**	**0.0971**	**0.0000**	**163.1880**	**163.1880**	**0.0482**	**0.0000**	**164.2007**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.2353	0.1925	4.1000e-004	0.0114	4.9200e-003	0.0163	3.2600e-003	4.5300e-003	7.7800e-003	0.0000	37.8384	37.8384	4.1000e-004	0.0000	37.8470
Worker	0.0163	0.0243	0.2230	2.8000e-004	0.0249	2.4000e-004	0.0251	6.6100e-003	2.2000e-004	6.8300e-003	0.0000	22.7965	22.7965	1.6200e-003	0.0000	22.8306
Total	**0.0373**	**0.2597**	**0.4155**	**6.9000e-004**	**0.0363**	**5.1600e-003**	**0.0414**	**9.8700e-003**	**4.7500e-003**	**0.0146**	**0.0000**	**60.6350**	**60.6350**	**2.0300e-003**	**0.0000**	**60.6776**

3.4 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1200e-003	0.0194	0.0135	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	1.7873	1.7873	2.5000e-004	0.0000	1.7926
Total	**8.9100e-003**	**0.0194**	**0.0135**	**2.0000e-005**		**1.7200e-003**	**1.7200e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**1.7873**	**1.7873**	**2.5000e-004**	**0.0000**	**1.7926**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	7.2000e-004	6.6400e-003	1.0000e-005	7.4000e-004	1.0000e-005	7.5000e-004	2.0000e-004	1.0000e-005	2.0000e-004	0.0000	0.6791	0.6791	5.0000e-005	0.0000	0.6801
Total	**4.8000e-004**	**7.2000e-004**	**6.6400e-003**	**1.0000e-005**	**7.4000e-004**	**1.0000e-005**	**7.5000e-004**	**2.0000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6791**	**0.6791**	**5.0000e-005**	**0.0000**	**0.6801**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.7900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1200e-003	0.0194	0.0135	2.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	1.7873	1.7873	2.5000e-004	0.0000	1.7926
Total	**8.9100e-003**	**0.0194**	**0.0135**	**2.0000e-005**		**1.7200e-003**	**1.7200e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**1.7873**	**1.7873**	**2.5000e-004**	**0.0000**	**1.7926**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	7.2000e-004	6.6400e-003	1.0000e-005	7.4000e-004	1.0000e-005	7.5000e-004	2.0000e-004	1.0000e-005	2.0000e-004	0.0000	0.6791	0.6791	5.0000e-005	0.0000	0.6801
Total	**4.8000e-004**	**7.2000e-004**	**6.6400e-003**	**1.0000e-005**	**7.4000e-004**	**1.0000e-005**	**7.5000e-004**	**2.0000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6791**	**0.6791**	**5.0000e-005**	**0.0000**	**0.6801**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by

User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.455690	0.042546	0.214770	0.152257	0.068772	0.010100	0.016640	0.021228	0.002325	0.001418	0.008694	0.000867	0.004695

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	114.0489	114.0489	5.1600e-003	1.0700e-003	114.4880
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	114.0489	114.0489	5.1600e-003	1.0700e-003	114.4880
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	392040	114.0489	5.1600e-003	1.0700e-003	114.4880
Total		**114.0489**	**5.1600e-003**	**1.0700e-003**	**114.4880**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	392040	114.0489	5.1600e-003	1.0700e-003	114.4880
Total		**114.0489**	**5.1600e-003**	**1.0700e-003**	**114.4880**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5482	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.5482	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.5482**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0379					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.5482**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000

Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Cambria Emergency Water Supply Project

San Luis Obispo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	3.00	130,680.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage includes area of pond

Construction Phase - anticipated schedule

Off-road Equipment - anticipated equipment

Off-road Equipment - anticipated equipment

Grading - 50 CY of cut and 50 CY of fill balanced on site

Trips and VMT - 50 CY of cut and 50 CY of fill balanced on site, no import or export. Distance is movement of material across the site.

Architectural Coating - Pre-engineered equipment containers will be painted. Field painting will be limited to process piping and misc. equipment.

Vehicle Trips - Project is not a trip generating land use.

Energy Use - based on total installed load of 375 kW for 3 acres (130,680 SF) over an entire year.

Area Coating - Pre-engineered equipment containers will be painted. Field painting will be limited to process piping and misc. equipment.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	65,340.00	1,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	196,020.00	0.00
tblAreaCoating	Area_Nonresidential_Interior	196020	0
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	NumDays	220.00	94.00
tblConstructionPhase	NumDays	6.00	52.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	12/4/2014	11/17/2014
tblConstructionPhase	PhaseEndDate	1/17/2015	11/18/2014
tblConstructionPhase	PhaseStartDate	11/19/2014	11/1/2014
tblConstructionPhase	PhaseStartDate	10/1/2014	8/1/2014
tblEnergyUse	T24E	0.00	3.00
tblGrading	AcresOfGrading	0.00	3.00
tblGrading	MaterialExported	0.00	50.00
tblGrading	MaterialImported	0.00	50.00
tblLandUse	LandUseSquareFeet	0.00	130,680.00
tblLandUse	LotAcreage	0.00	3.00
tblOffRoadEquipment	HorsePower	199.00	255.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.36	0.40
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.50	0.50

tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.10

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	7.0203	75.9179	49.8739	0.0714	6.9740	3.6196	10.5936	3.5580	3.3298	6.8878	0.0000	7,426.1757	7,426.1757	1.8022	0.0000	7,464.0219
Total	**7.0203**	**75.9179**	**49.8739**	**0.0714**	**6.9740**	**3.6196**	**10.5936**	**3.5580**	**3.3298**	**6.8878**	**0.0000**	**7,426.1757**	**7,426.1757**	**1.8022**	**0.0000**	**7,464.0219**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	7.0203	75.9179	49.8739	0.0714	6.9740	3.6196	10.5936	3.5580	3.3298	6.8878	0.0000	7,426.1757	7,426.1757	1.8022	0.0000	7,464.0219
Total	**7.0203**	**75.9179**	**49.8739**	**0.0714**	**6.9740**	**3.6196**	**10.5936**	**3.5580**	**3.3298**	**6.8878**	**0.0000**	**7,426.1757**	**7,426.1757**	**1.8022**	**0.0000**	**7,464.0219**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0040	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.0040**	**0.0000**	**1.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0040	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.0040**	**0.0000**	**1.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	8/1/2014	9/30/2014	6	52	
2	Building Construction	Building Construction	8/1/2014	11/18/2014	6	94	
3	Architectural Coating	Architectural Coating	11/1/2014	11/17/2014	6	14	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 1,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Building Construction	Cranes	1	7.00	226	0.29
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Excavators	0	8.00	162	0.38
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Grading	Graders	0	8.00	174	0.41
Building Construction	Excavators	1	8.00	162	0.38
Building Construction	Other Construction Equipment	2	8.00	171	0.42
Building Construction	Rough Terrain Forklifts	1	6.00	100	0.40
Building Construction	Rubber Tired Loaders	1	6.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Skid Steer Loaders	1	8.00	64	0.37
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Trenchers	1	6.00	80	0.50
Building Construction	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	6.00	13.00	13.00	0.10	LD_Mix	HDT_Mix	HHDT
Building Construction	8	55.00	21.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0836	0.0000	6.0836	3.3169	0.0000	3.3169			0.0000			0.0000
Off-Road	2.2830	26.5270	16.3816	0.0197		1.2626	1.2626		1.1616	1.1616		2,086.5588	2,086.5588	0.6166		2,099.5074
Total	**2.2830**	**26.5270**	**16.3816**	**0.0197**	**6.0836**	**1.2626**	**7.3462**	**3.3169**	**1.1616**	**4.4785**		**2,086.5588**	**2,086.5588**	**0.6166**		**2,099.5074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9600e-003	3.5300e-003	0.0277	0.0000	1.0000e-005	2.0000e-005	3.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.2393	0.2393	1.0000e-005		0.2394
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0956	0.8827	1.0800e-003	0.0989	9.4000e-004	0.0998	0.0262	8.4000e-004	0.0271		96.4375	96.4375	6.9200e-003		96.5828
Total	**0.0691**	**0.0992**	**0.9103**	**1.0800e-003**	**0.0989**	**9.6000e-004**	**0.0998**	**0.0262**	**8.6000e-004**	**0.0271**		**96.6767**	**96.6767**	**6.9300e-003**		**96.8222**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0836	0.0000	6.0836	3.3169	0.0000	3.3169			0.0000			0.0000
Off-Road	2.2830	26.5270	16.3816	0.0197		1.2626	1.2626		1.1616	1.1616	0.0000	2,086.5588	2,086.5588	0.6166		2,099.5074
Total	**2.2830**	**26.5270**	**16.3816**	**0.0197**	**6.0836**	**1.2626**	**7.3462**	**3.3169**	**1.1616**	**4.4785**	**0.0000**	**2,086.5588**	**2,086.5588**	**0.6166**		**2,099.5074**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9600e-003	3.5300e-003	0.0277	0.0000	1.0000e-005	2.0000e-005	3.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.2393	0.2393	1.0000e-005		0.2394
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0956	0.8827	1.0800e-003	0.0989	9.4000e-004	0.0998	0.0262	8.4000e-004	0.0271		96.4375	96.4375	6.9200e-003		96.5828
Total	**0.0691**	**0.0992**	**0.9103**	**1.0800e-003**	**0.0989**	**9.6000e-004**	**0.0998**	**0.0262**	**8.6000e-004**	**0.0271**		**96.6767**	**96.6767**	**6.9300e-003**		**96.8222**

3.3 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8230	43.8059	23.1955	0.0361		2.2457	2.2457		2.0660	2.0660		3,827.3240	3,827.3240	1.1310		3,851.0753

Total	**3.8230**	**43.8059**	**23.1955**	**0.0361**		**2.2457**	**2.2457**		**2.0660**	**2.0660**		**3,827.3240**	**3,827.3240**	**1.1310**		**3,851.0753**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4758	4.9598	4.5318	8.6500e-003	0.2478	0.1052	0.3530	0.0707	0.0968	0.1674		885.2100	885.2100	9.5900e-003		885.4113
Worker	0.3694	0.5260	4.8547	5.9500e-003	0.5437	5.1700e-003	0.5489	0.1442	4.6200e-003	0.1488		530.4062	530.4062	0.0381		531.2056
Total	**0.8452**	**5.4859**	**9.3865**	**0.0146**	**0.7915**	**0.1104**	**0.9019**	**0.2149**	**0.1014**	**0.3162**		**1,415.6162**	**1,415.6162**	**0.0477**		**1,416.6169**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8230	43.8059	23.1955	0.0361		2.2457	2.2457		2.0660	2.0660	0.0000	3,827.3240	3,827.3240	1.1310		3,851.0753
Total	**3.8230**	**43.8059**	**23.1955**	**0.0361**		**2.2457**	**2.2457**		**2.0660**	**2.0660**	**0.0000**	**3,827.3240**	**3,827.3240**	**1.1310**		**3,851.0753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4758	4.9598	4.5318	8.6500e-003	0.2478	0.1052	0.3530	0.0707	0.0968	0.1674		885.2100	885.2100	9.5900e-003		885.4113
Worker	0.3694	0.5260	4.8547	5.9500e-003	0.5437	5.1700e-003	0.5489	0.1442	4.6200e-003	0.1488		530.4062	530.4062	0.0381		531.2056
Total	**0.8452**	**5.4859**	**9.3865**	**0.0146**	**0.7915**	**0.1104**	**0.9019**	**0.2149**	**0.1014**	**0.3162**		**1,415.6162**	**1,415.6162**	**0.0477**		**1,416.6169**

3.4 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.8277					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4462	2.7773	1.9216	2.9700e-003		0.2452	0.2452		0.2452	0.2452		281.4481	281.4481	0.0401		282.2905
Total	**1.2739**	**2.7773**	**1.9216**	**2.9700e-003**		**0.2452**	**0.2452**		**0.2452**	**0.2452**		**281.4481**	**281.4481**	**0.0401**		**282.2905**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.1052	0.9709	1.1900e-003	0.1088	1.0300e-003	0.1098	0.0288	9.2000e-004	0.0298		106.0812	106.0812	7.6100e-003		106.2411
Total	**0.0739**	**0.1052**	**0.9709**	**1.1900e-003**	**0.1088**	**1.0300e-003**	**0.1098**	**0.0288**	**9.2000e-004**	**0.0298**		**106.0812**	**106.0812**	**7.6100e-003**		**106.2411**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.8277					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4462	2.7773	1.9216	2.9700e-003		0.2452	0.2452		0.2452	0.2452	0.0000	281.4481	281.4481	0.0401		282.2905
Total	**1.2739**	**2.7773**	**1.9216**	**2.9700e-003**		**0.2452**	**0.2452**		**0.2452**	**0.2452**	**0.0000**	**281.4481**	**281.4481**	**0.0401**		**282.2905**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0739	0.1052	0.9709	1.1900e-003	0.1088	1.0300e-003	0.1098	0.0288	9.2000e-004	0.0298		106.0812	106.0812	7.6100e-003		106.2411
Total	**0.0739**	**0.1052**	**0.9709**	**1.1900e-003**	**0.1088**	**1.0300e-003**	**0.1098**	**0.0288**	**9.2000e-004**	**0.0298**		**106.0812**	**106.0812**	**7.6100e-003**		**106.2411**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.455690	0.042546	0.214770	0.152257	0.068772	0.010100	0.016640	0.021228	0.002325	0.001418	0.008694	0.000867	0.004695

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.0040	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	3.0040	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2074					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Consumer Products	2.7966					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**3.0040**	**0.0000**	**1.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2074					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7966					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**3.0040**	**0.0000**	**1.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Cambria Emergency Water Supply Project

San Luis Obispo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	3.00	130,680.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage includes area of pond

Construction Phase - anticipated schedule

Off-road Equipment - anticipated equipment

Off-road Equipment - anticipated equipment

Grading - 50 CY of cut and 50 CY of fill balanced on site

Trips and VMT - 50 CY of cut and 50 CY of fill balanced on site, no import or export. Distance is movement of material across the site.

Architectural Coating - Pre-engineered equipment containers will be painted. Field painting will be limited to process piping and misc. equipment.

Vehicle Trips - Project is not a trip generating land use.

Energy Use - based on total installed load of 375 kW for 3 acres (130,680 SF) over an entire year.

Area Coating - Pre-engineered equipment containers will be painted. Field painting will be limited to process piping and misc. equipment.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	65,340.00	1,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	196,020.00	0.00
tblAreaCoating	Area_Nonresidential_Interior	196020	0
tblConstructionPhase	NumDays	10.00	14.00
tblConstructionPhase	NumDays	220.00	94.00
tblConstructionPhase	NumDays	6.00	52.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	12/4/2014	11/17/2014
tblConstructionPhase	PhaseEndDate	1/17/2015	11/18/2014
tblConstructionPhase	PhaseStartDate	11/19/2014	11/1/2014
tblConstructionPhase	PhaseStartDate	10/1/2014	8/1/2014
tblEnergyUse	T24E	0.00	3.00
tblGrading	AcresOfGrading	0.00	3.00
tblGrading	MaterialExported	0.00	50.00
tblGrading	MaterialImported	0.00	50.00
tblLandUse	LandUseSquareFeet	0.00	130,680.00
tblLandUse	LotAcreage	0.00	3.00
tblOffRoadEquipment	HorsePower	199.00	255.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.36	0.40
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.50	0.50

tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.10

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	6.9214	75.7417	48.5679	0.0718	6.9740	3.6188	10.5928	3.5580	3.3291	6.8870	0.0000	7,460.2937	7,460.2937	1.8021	0.0000	7,498.1375
Total	**6.9214**	**75.7417**	**48.5679**	**0.0718**	**6.9740**	**3.6188**	**10.5928**	**3.5580**	**3.3291**	**6.8870**	**0.0000**	**7,460.2937**	**7,460.2937**	**1.8021**	**0.0000**	**7,498.1375**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	6.9214	75.7417	48.5679	0.0718	6.9740	3.6188	10.5928	3.5580	3.3291	6.8870	0.0000	7,460.2937	7,460.2937	1.8021	0.0000	7,498.1375
Total	**6.9214**	**75.7417**	**48.5679**	**0.0718**	**6.9740**	**3.6188**	**10.5928**	**3.5580**	**3.3291**	**6.8870**	**0.0000**	**7,460.2937**	**7,460.2937**	**1.8021**	**0.0000**	**7,498.1375**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0040	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.0040**	**0.0000**	**1.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.0040	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**3.0040**	**0.0000**	**1.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	8/1/2014	9/30/2014	6	52	
2	Building Construction	Building Construction	8/1/2014	11/18/2014	6	94	
3	Architectural Coating	Architectural Coating	11/1/2014	11/17/2014	6	14	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 1,000 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Building Construction	Cranes	1	7.00	226	0.29
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Excavators	0	8.00	162	0.38
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Grading	Graders	0	8.00	174	0.41
Building Construction	Excavators	1	8.00	162	0.38
Building Construction	Other Construction Equipment	2	8.00	171	0.42
Building Construction	Rough Terrain Forklifts	1	6.00	100	0.40
Building Construction	Rubber Tired Loaders	1	6.00	255	0.40
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Skid Steer Loaders	1	8.00	64	0.37
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Trenchers	1	6.00	80	0.50
Building Construction	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	6.00	13.00	13.00	0.10	LD_Mix	HDT_Mix	HHDT
Building Construction	8	55.00	21.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	13.00	13.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0836	0.0000	6.0836	3.3169	0.0000	3.3169			0.0000			0.0000
Off-Road	2.2830	26.5270	16.3816	0.0197		1.2626	1.2626		1.1616	1.1616		2,086.5588	2,086.5588	0.6166		2,099.5074
Total	**2.2830**	**26.5270**	**16.3816**	**0.0197**	**6.0836**	**1.2626**	**7.3462**	**3.3169**	**1.1616**	**4.4785**		**2,086.5588**	**2,086.5588**	**0.6166**		**2,099.5074**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4800e-003	3.5100e-003	0.0184	0.0000	1.0000e-005	2.0000e-005	3.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.2599	0.2599	1.0000e-005		0.2601
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0619	0.0845	0.8580	1.1300e-003	0.0989	9.4000e-004	0.0998	0.0262	8.4000e-004	0.0271		101.0914	101.0914	6.9200e-003		101.2367
Total	**0.0633**	**0.0880**	**0.8764**	**1.1300e-003**	**0.0989**	**9.6000e-004**	**0.0998**	**0.0262**	**8.6000e-004**	**0.0271**		**101.3513**	**101.3513**	**6.9300e-003**		**101.4968**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0836	0.0000	6.0836	3.3169	0.0000	3.3169			0.0000			0.0000
Off-Road	2.2830	26.5270	16.3816	0.0197		1.2626	1.2626		1.1616	1.1616	0.0000	2,086.5588	2,086.5588	0.6166		2,099.5074
Total	**2.2830**	**26.5270**	**16.3816**	**0.0197**	**6.0836**	**1.2626**	**7.3462**	**3.3169**	**1.1616**	**4.4785**	**0.0000**	**2,086.5588**	**2,086.5588**	**0.6166**		**2,099.5074**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4800e-003	3.5100e-003	0.0184	0.0000	1.0000e-005	2.0000e-005	3.0000e-005	0.0000	2.0000e-005	2.0000e-005		0.2599	0.2599	1.0000e-005		0.2601
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0619	0.0845	0.8580	1.1300e-003	0.0989	9.4000e-004	0.0998	0.0262	8.4000e-004	0.0271		101.0914	101.0914	6.9200e-003		101.2367
Total	**0.0633**	**0.0880**	**0.8764**	**1.1300e-003**	**0.0989**	**9.6000e-004**	**0.0998**	**0.0262**	**8.6000e-004**	**0.0271**		**101.3513**	**101.3513**	**6.9300e-003**		**101.4968**

3.3 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8230	43.8059	23.1955	0.0361		2.2457	2.2457		2.0660	2.0660		3,827.3240	3,827.3240	1.1310		3,851.0753

Total	**3.8230**	**43.8059**	**23.1955**	**0.0361**		**2.2457**	**2.2457**		**2.0660**	**2.0660**		**3,827.3240**	**3,827.3240**	**1.1310**		**3,851.0753**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4120	4.8561	3.3953	8.6700e-003	0.2478	0.1044	0.3521	0.0707	0.0960	0.1666		889.0570	889.0570	9.4700e-003		889.2559
Worker	0.3402	0.4648	4.7191	6.2300e-003	0.5437	5.1700e-003	0.5489	0.1442	4.6200e-003	0.1488		556.0026	556.0026	0.0381		556.8020
Total	**0.7521**	**5.3209**	**8.1143**	**0.0149**	**0.7915**	**0.1095**	**0.9010**	**0.2149**	**0.1006**	**0.3155**		**1,445.0596**	**1,445.0596**	**0.0475**		**1,446.0579**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8230	43.8059	23.1955	0.0361		2.2457	2.2457		2.0660	2.0660	0.0000	3,827.3240	3,827.3240	1.1310		3,851.0753
Total	**3.8230**	**43.8059**	**23.1955**	**0.0361**		**2.2457**	**2.2457**		**2.0660**	**2.0660**	**0.0000**	**3,827.3240**	**3,827.3240**	**1.1310**		**3,851.0753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4120	4.8561	3.3953	8.6700e-003	0.2478	0.1044	0.3521	0.0707	0.0960	0.1666		889.0570	889.0570	9.4700e-003		889.2559
Worker	0.3402	0.4648	4.7191	6.2300e-003	0.5437	5.1700e-003	0.5489	0.1442	4.6200e-003	0.1488		556.0026	556.0026	0.0381		556.8020
Total	**0.7521**	**5.3209**	**8.1143**	**0.0149**	**0.7915**	**0.1095**	**0.9010**	**0.2149**	**0.1006**	**0.3155**		**1,445.0596**	**1,445.0596**	**0.0475**		**1,446.0579**

3.4 Architectural Coating - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.8277					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4462	2.7773	1.9216	2.9700e-003		0.2452	0.2452		0.2452	0.2452		281.4481	281.4481	0.0401		282.2905
Total	**1.2739**	**2.7773**	**1.9216**	**2.9700e-003**		**0.2452**	**0.2452**		**0.2452**	**0.2452**		**281.4481**	**281.4481**	**0.0401**		**282.2905**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0680	0.0930	0.9438	1.2500e-003	0.1088	1.0300e-003	0.1098	0.0288	9.2000e-004	0.0298		111.2005	111.2005	7.6100e-003		111.3604
Total	**0.0680**	**0.0930**	**0.9438**	**1.2500e-003**	**0.1088**	**1.0300e-003**	**0.1098**	**0.0288**	**9.2000e-004**	**0.0298**		**111.2005**	**111.2005**	**7.6100e-003**		**111.3604**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.8277					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4462	2.7773	1.9216	2.9700e-003		0.2452	0.2452		0.2452	0.2452	0.0000	281.4481	281.4481	0.0401		282.2905
Total	**1.2739**	**2.7773**	**1.9216**	**2.9700e-003**		**0.2452**	**0.2452**		**0.2452**	**0.2452**	**0.0000**	**281.4481**	**281.4481**	**0.0401**		**282.2905**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0680	0.0930	0.9438	1.2500e-003	0.1088	1.0300e-003	0.1098	0.0288	9.2000e-004	0.0298		111.2005	111.2005	7.6100e-003		111.3604
Total	**0.0680**	**0.0930**	**0.9438**	**1.2500e-003**	**0.1088**	**1.0300e-003**	**0.1098**	**0.0288**	**9.2000e-004**	**0.0298**		**111.2005**	**111.2005**	**7.6100e-003**		**111.3604**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	13.00	13.00	13.00	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.455690	0.042546	0.214770	0.152257	0.068772	0.010100	0.016640	0.021228	0.002325	0.001418	0.008694	0.000867	0.004695

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.0040	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	3.0040	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2074					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Consumer Products	2.7966					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**3.0040**	**0.0000**	**1.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2074					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7966					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**3.0040**	**0.0000**	**1.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix B
Biological Resources Assessment

CAMBRIA EMERGENCY WATER SUPPLY PROJECT

San Luis Obispo County, California

Habitat Assessment

Prepared For:
Cambria Community Services District
1316 Tamson Drive, Suite 201
Cambria, California 93428
Contact: Robert C. Gresens, P.E.
805.927.6623

Prepared By:
RBF Consulting
14725 Alton Parkway
Irvine, California 92618
Contact: Thomas J. McGill, Ph.D.
909.947.4907

RBF
A Baker Company

June 2014
JN 141290

CAMBRIA EMERGENCY WATER SUPPLY PROJECT

SAN LUIS OBISPO COUNTY, CALIFORNIA

Habitat Assessment

The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.

Ryan Winkleman
Biologist
Natural Resources

Thomas J. McGill, Ph.D.
Vice President
Natural Resources

June 2014

Executive Summary

The Cambria Community Services District proposes to install and operate groundwater extraction and injection wells, a new water treatment plant, and a series of pipelines to help alleviate an emergency water shortage in the City of Cambria, San Luis Obispo County, California. The Project would be located within previously-disturbed areas and would consist of an existing well to extract groundwater, a water treatment plant to make the water potable, several monitoring wells, and an injection well located in an existing water well field for injection and subsequent re-extraction for the general water supply. In addition, the Project would include one of two alternatives: under the first alternative, 100 gpm of treated water would be continuously injected back into the groundwater supply at three lagoon injection wells, while in the second alternative 100 gpm of treated water would be discharged directly into Van Gordon Creek via an existing pipeline.

In May 2014 biologists from RBF Consulting conducted a habitat assessment within the Project site and the surrounding waterways. The Project site is located within designated Critical Habitat for the California red-legged frog (*Rana draytonii*), and the larger survey area is located within designated Critical Habitat for steelhead (*Oncorhynchus mykiss irideus*), tidewater goby (*Eucyclogobius newberryi*), and western snowy plover (*Charadrius alexandrinus nivosus*). Previous surveys conducted in the survey area since 1991 have identified the presence of California red-legged frog, steelhead, tidewater goby, western pond turtle (*Emys marmorata*), two-striped garter snake (*Thamnophis hammondii*), and compact cobwebby thistle (*Cirsium occidentale* var. *compactum*) within the survey area and/or general vicinity. Tidewater goby was observed during the habitat assessment.

While a formal jurisdictional delineation has not been conducted, the Project site contains several water bodies—San Simeon Creek, Van Gordon Creek, and San Simeon Creek Lagoon—that are expected to be Waters of the State and/or Waters of the U.S. under the regulatory authority of the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board (Regional Board), and California Department of Fish and Wildlife (CDFW). The Project is currently designed to avoid direct impacts to these areas, although indirect operational impacts could still occur. If Project design changed and the Project could cause direct impacts to any these water bodies, the Project applicant would have to obtain a Corps Clean Water Act (CWA) Section 404 Permit, Regional Board CWA Section 401 Water Quality Certification, and CDFW Section 1602 Streambed Alteration Agreement prior to construction within these areas.

The Project is also located within the Coastal Zone as designated by the California Coastal Commission. Prior to approval by the Coastal Commission, the Project would have to demonstrate that it complies with the California Coastal Act of 1976. The Project would also

have to demonstrate compliance with San Luis Obispo County's Local Coastal Program, which ties into the Coastal Act on a county level.

Table of Contents

EXHIBITS

APPENDIX

LIST OF ACRONYMS

AMP	Adaptive Management Program
AWTP	Advanced Water Treatment Plant
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corp of Engineers
CPP	Coastal Plan Policies
CRLF	California Red-legged Frog
CWA	Clean Water Act
CZLUO	Coastal Zone Land Use Ordinance
EIR	Environmental Impact Report
ESA	Endangered Species Act
GIS	Geographic Information System
LIW	Lagoon Injection Well
MBTA	Migratory Bird Treaty Act
NCAP	North Coast Area Plan
NRCS	Natural Resources Conservation Service
RBF	RBF Consulting
RIW	Recharge Injection Well
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WEAP	Worker Environmental Awareness Program

Section 1 Introduction

This report contains the findings of RBF Consulting's (RBF) Habitat Assessment for the Cambria Emergency Water Supply Project (Project) located north of the Community of Cambria in unincorporated San Luis Obispo County, California. The habitat assessment was conducted by RBF biological manager Thomas J. McGill and biologists Travis J. McGill and Ryan Winkleman on May 8 and 9, 2014 to identify sensitive habitats and/or species potentially occurring within the boundaries of the Project site and/or adjacent to the Project boundary that could pose a constraint to development. Since 1991 there have been several biological studies conducted for projects in the general area surrounding the Project site.

Special attention was given to the suitability of the habitat onsite to support California red-legged frog (*Rana draytonii*), a federally threatened species and California species of special concern; western pond turtle (*Emys marmorata*), a California species of special concern; tidewater goby (*Eucyclogobius newberryi*), a federally endangered species and California species of special concern; the steelhead (*Oncorhynchus mykiss irideus*) south/central California coast distinct population segment (DPS), a federally threatened species and California species of special concern; western snowy plover (*Charadrius alexandrinus nivosus*), a federally threatened species and California species of special concern; two-striped garter snake, a California species of special concern; and general raptor species. For the purposes of this analysis, "Project site" refers to the 96-acre property (Exhibit 3, *Project Site Map*) and "survey area" includes the Project site as well as San Simeon Creek Lagoon, which is partially located in the site but continues offsite to the west onto San Simeon State Beach.

1.1 PROJECT LOCATION

The Project site is generally located east of State Route 1, south of the City of San Simeon, and north of the Community of Cambria in unincorporated San Luis Obispo County, California (Exhibit 1, *Regional Vicinity Map*). The Project site is located in an un-sectioned area of Township 27 South, Range 8 East of the Cambria quadrangle of the United States Geological Survey (USGS) 7.5-minute topographic map series (Exhibit 2, *Local Vicinity Map*). Specifically, the site is east of Van Gordon Creek Road, north of San Simeon Creek, and south of San Simeon Monterey Creek Road. It is located adjacent to but not within Hearst San Simeon State Park (Refer to Exhibit 3).

1.2 PROJECT BACKGROUND

All of Cambria's potable water is supplied by groundwater wells in the San Simeon and Santa Rosa Creek aquifers. The San Simeon and Santa Rosa aquifers are relatively shallow and porous, with the groundwater levels typically recharged every year during the rainy season. Groundwater levels generally exhibit a consistent pattern of high levels during the wet season,

6/5/2014 JN M:\Mdata\141290\MXD\01 Regional Vicinity.mxd AP

RBF CONSULTING
A Baker Company

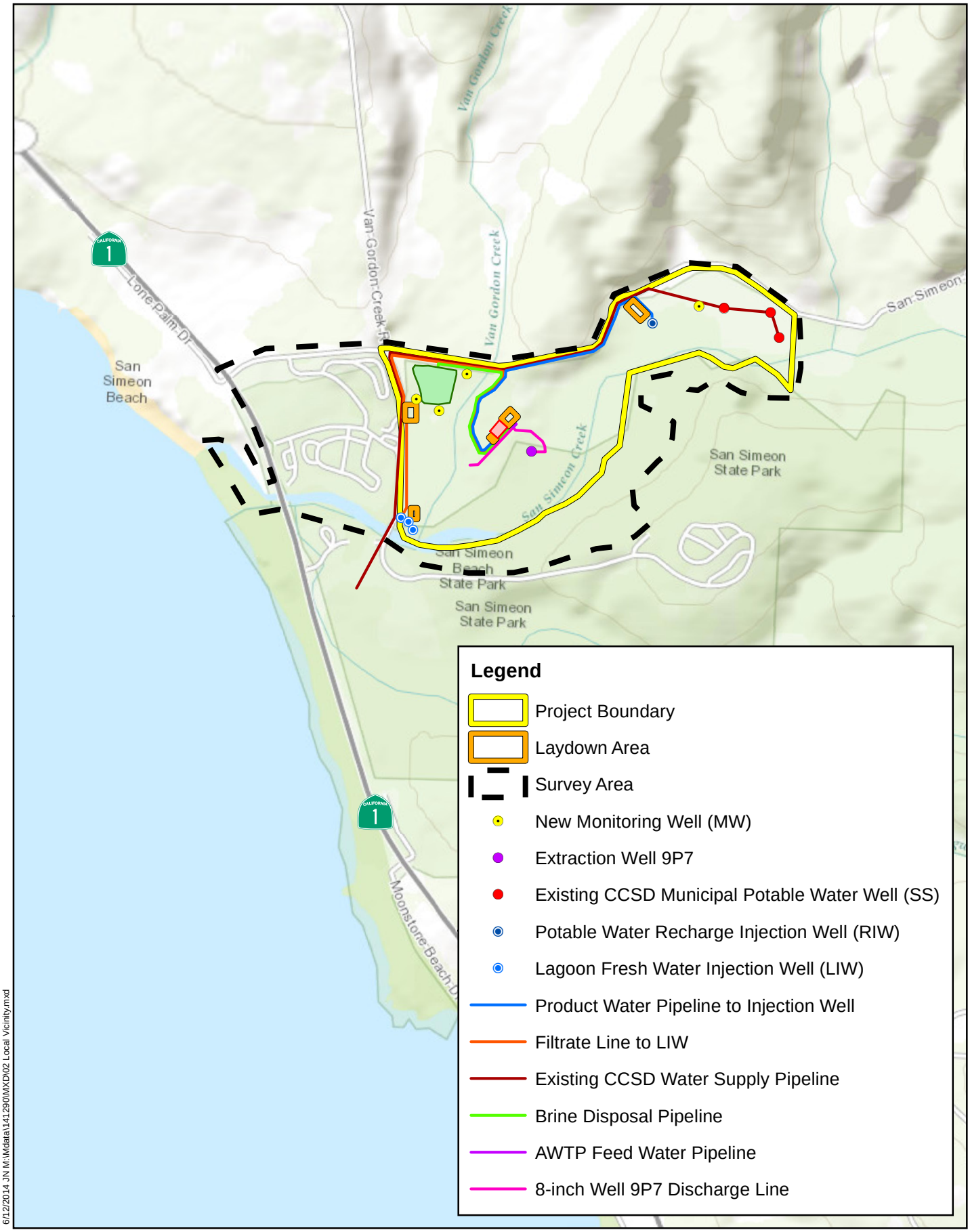
0 2.5 5 10 Miles

Source: ESRI Relief Map, National Highway Planning Network

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
HABITAT ASSESSMENT

Regional Vicinity Map

Exhibit 1



6/12/2014 JN M:\Mdata\141290\MXD\02 Local Vicinity.mxd

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
HABITAT ASSESSMENT

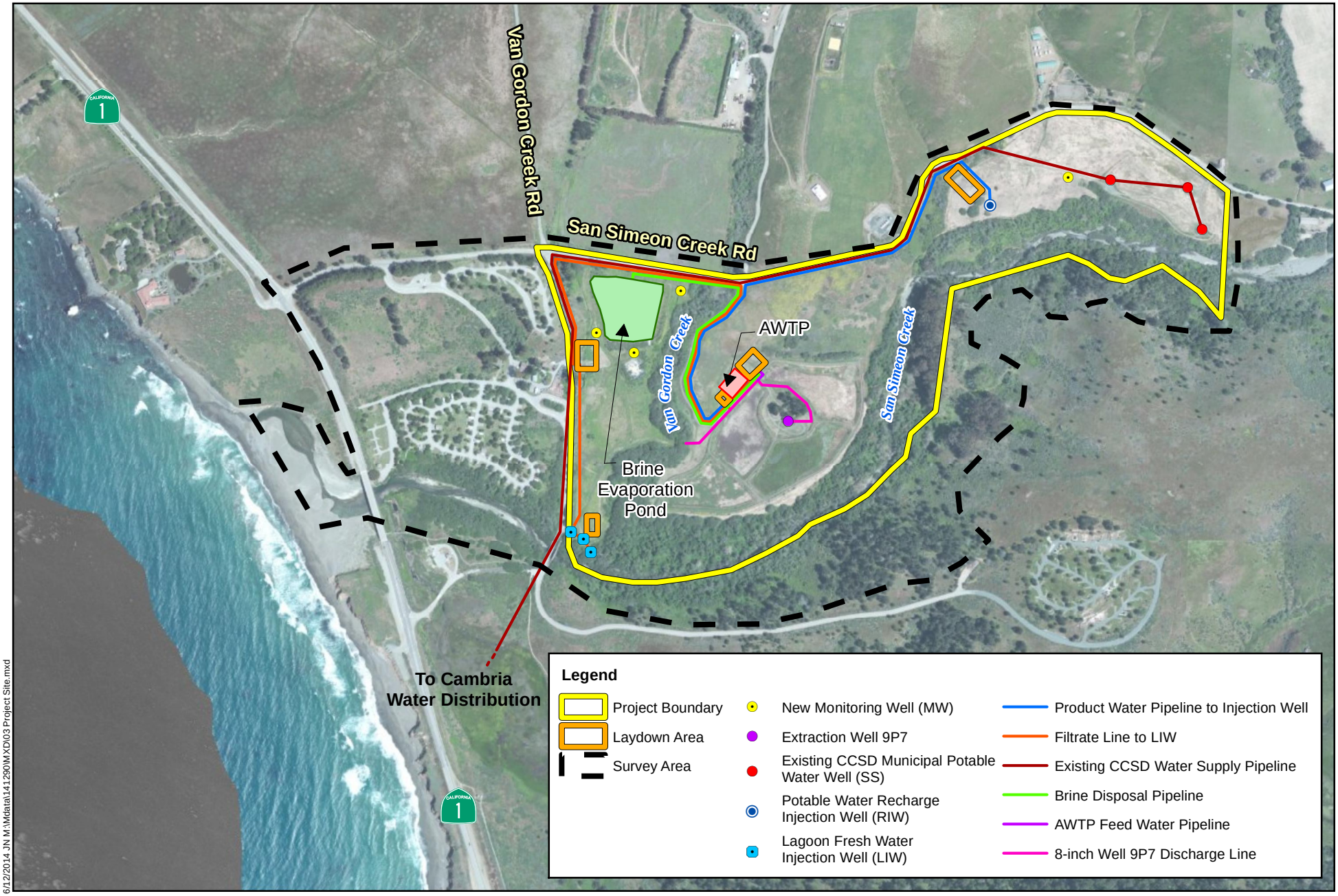
Local Vicinity Map

RBF CONSULTING A Baker Company

0 0.125 0.25 0.5 Miles

Source: CDM Smith, ESRI World Topographic Map

Exhibit 2



6/12/2014 JN M:\Mdata\141290\MXD\03 Project Site.mxd

RBF CONSULTING A Baker Company

0 400 800 1,600 Feet

Source: National Hydrography Dataset, CDM Smith, ESRI World Imagery Basemap

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
HABITAT ASSESSMENT

Project Site Map

Exhibit 3

steady decline during the dry season, and rapid rise when the wet season resumes. To minimize loss or contamination of potable groundwater at the aquifer and ocean interface, treated wastewater effluent is percolated into the San Simeon Creek aquifer downstream from its production wells. This practice also helps prevent saltwater intrusion into the freshwater water aquifer. If the groundwater level drops too far, treated effluent and seawater could migrate toward the water supply wells, deteriorating the water quality and potentially rendering the freshwater non-potable. The wastewater treatment plant is required to maintain a positive differential between the up-gradient groundwater levels at its production wells and the down-gradient percolation ponds. During the summer dry season, and depending upon the prior year's precipitation, the Cambria Community Services District (CCSD) may periodically pump groundwater from its percolation fields in order to maintain this differential.

In January 2014, the CCSD declared a Stage 3 water shortage emergency, the most stringent of three levels. In response to this emergency status, the CCSD is proposing the Cambria Emergency Water Supply Project.

1.3 PROJECT DESCRIPTION

The Project's source water is the San Simeon Creek aquifer from existing Well 9P7, which is located in the south end of a flat park-like area in the middle of the existing percolation ponds (Refer to Exhibit 3). The extracted groundwater would be transferred to a proposed Advanced Water Treatment Plant (AWTP) that would treat brackish water to produce potable water. The AWTP would consist of multiple unit processes including ultrafiltration membranes, reverse osmosis membrane, advance oxidation, and post-treatment and disinfection facilities. A feed water pipeline is proposed to transport the brackish water between existing Well 9P7 and the proposed AWTP. To meet California Department of Public Health and Regional Water Quality Control Board regulations, the treated AWTP product water would be re-introduced/pumped for injection into the groundwater basin so that it would become available in the existing San Simeon well field. To inject the product water into the basin, a new potable water recharge injection well (RIW) is proposed at the existing potable water well-field, approximately 1,000 feet east of existing potable water Well SS-3. A Project water pipeline is proposed to transport the product water between the proposed AWTP and proposed wells RIW and lagoon injection well (LIW).

A stream of the AWTP product water would be pumped southwest of the AWTP for discharge into the San Simeon creek via a LIW proposed just upstream of the fresh water lagoon, approximately 2,500 feet southwest of existing Well 9P7. The AWTP generated waste stream (brine) would be disposed for evaporation in the existing Van Gordon Reservoir, an evaporation pond that was originally constructed for percolation of the secondary effluent form the CCSD's wastewater treatment plant (WWTP). A brine disposal pipeline is proposed to transport the brine between the proposed AWTP and the existing Van Gordon Reservoir, which would be

lined with an impermeable liner to serve as the evaporation pond for this Project. Depending on the AWTP recovery, the proposed brine evaporation may need to be aided with mechanical spray evaporators or another forced evaporation equipment.

It is assumed the Project would be capable of generating 400 gallons per minute (gpm) of new water, out of which 300 gpm would be used for emergency water supply to the Cambria community and 100 gpm would be used for recharge into the San Simeon Creek fresh water lagoons.

Section 2 Regulatory Background

There are several overlying federal, state, and local biological resources regulations and policies that pertain to this Project. These policies are summarized below, along with a brief description of how they relate to the proposed Project's planning, permitting, and implementation.

2.1 FEDERAL REGULATIONS

Endangered Species Act of 1973

Federally listed threatened and endangered species and their habitats are protected under provisions of the Federal Endangered Species Act (ESA). Section 9 of the ESA prohibits "take" of threatened or endangered species. "Take" under the ESA is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct." The presence of any federally threatened or endangered species that are in a Project area generally imposes severe constraints on development, particularly if development would result in "take" of the species or its habitat. Under the regulations of the ESA, the USFWS may authorize "take" when it is incidental to, but not the purpose of, an otherwise lawful act.

"Harm" has been defined by the regulations of the U.S. Fish and Wildlife Service (USFWS) to include types of "significant habitat modification or degradation." The U.S. Supreme Court, in *Babbit v. Sweet Home*, 515 U.S. 687, ruled that "harm" may include habitat modification "...where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." Activities that may result in "take" of individuals are regulated by USFWS.

Under the ESA, "Critical Habitat" is also designated at the time of listing or within one year of listing. "Critical Habitat" refers to habitat or a specific geographic area that contains the elements and features that are essential for the survival and recovery of the species. In the event that a project may result in take or in adverse effects to a species' designated Critical Habitat, the project proponent may be required to engage in suitable mitigation. If the project is on federal lands, will require federal permits (e.g. regulatory permits), or otherwise will have a federal lead agency, the proponent will be required to enter into Section 7 informal and/or formal consultations with the USFWS to obtain, if possible, a biological opinion allowing for incidental take of the species in question. If the project is on private land or will not require any federal permits, the proponent will be required to write a habitat management plan to address the impacts.

The ESA defines as “endangered” any plant or animal species that is in danger of extinction throughout all or a significant portion of its range. A “threatened” species is a species that is likely to become endangered in the foreseeable future. A “proposed” species is one that has been officially proposed by USFWS for addition to the federal threatened and endangered species list.

USFWS produced an updated list of candidate species for listing in June 2002 (Federal Resister: Volume 67, Number 114, 50 CFR Part 17). Candidate species are regarded by USFWS as candidates for addition to the “List of Endangered and Threatened Wildlife and Plants.” Although candidate species are not afforded legal protection under the ESA, they typically receive special attention from federal and state agencies during the environmental review process.

USFWS also uses the label “species of concern,” an informal term that refers to species which might be in need of concentrated conservation actions. As the species of concern designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species.

The proposed Project is located within several overlapping areas that have been designated Critical Habitat. Direct or indirect adverse impacts to these areas known or presumed to support federally listed species may trigger the requirement for state and/or federal incidental take permits.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act, otherwise known as the Magnuson-Stevens Act (MSA) was enacted to help protect, conserve, and manage the fishery resources of the United States in the face of overfishing, habitat losses, and ineffective international agreements. The MSA provides the United States with exclusive fishery management rights to all fish within and beyond the U.S.’s “exclusive economic zone” and all Continental Shelf fishery resources, except when the fish are within the waters of a foreign nation, and allows the United States to regulate international fishing within waters managed by the U.S.

Through Section 303 of the MSA, the National Oceanic and Atmospheric Administration (NOAA) is required to work with regional Fishery Management Councils to develop fishery management plans (FMPs) for the protection of fisheries under their jurisdiction. These FMPs are implemented by NOAA’s National Marine Fisheries Service (NMFS). One of the required provisions in FMPs is to establish “Essential Fish Habitat” (EFH), defined as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.” Through

Section 305(b) of the MSA, federal agencies are required to consult with the NMFS on activities that may affect EFH for species that are managed under fishery management plans.

The proposed Project is located within Essential Fish Habitat for Coho salmon (*Oncorhynchos kisutch*).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S. Government Code [USC] 703) makes it unlawful to pursue, capture, kill, or possess or attempt to do the same to any migratory bird or part, nest, or egg of any such bird listed in wildlife protection treaties between the United States, Great Britain, Mexico, Japan, and the countries of the former Soviet Union, and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 CFR 10, 21).

The proposed Project would be located within and adjacent to suitable nesting habitat for a variety of avian species. In order to demonstrate compliance with the MBTA, the Project proponent may be required to conduct preconstruction nesting surveys if construction is to occur during the nesting season.

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act (CWA) requires that a permit be obtained from the U.S. Army Corps of Engineers (Corps) prior to the discharge of dredged or fill materials into any "waters of the United States or wetlands." Waters of the United States are broadly defined in the Corps regulations (33 CFR 328) to include navigable waterways, their tributaries, lakes, ponds, and wetlands. Wetlands are defined as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (Federal Register 1982). Wetlands that are not specifically exempt from Section 404 regulations (such as drainage channels excavated on dry land) are considered to be "jurisdictional wetlands." In a recent Supreme Court Case, the Court acted to limit the regulatory jurisdiction of the Corps under Section 404 of the CWA as it applies to adjacent waters (USSC 2001). Specifically, the Court ruled that waters that are non-navigable, isolated, and intrastate are not subject to the Corps jurisdiction (Guzy and Anderson 2001). The Corps is required to consult with the USFWS, Environmental Protection Agency, and State Regional Water Quality Control Board (Regional Board) (among other agencies) in carrying out its discretionary authority under Section 404.

The Corps grants two types of permits, individual and nationwide. Project-specific individual permits are required for certain activities that may have a potential for more than a minimal

impact and necessitate a detailed application. The most common type of permit is a nationwide permit. Nationwide permits authorize activities on a nationwide basis unless specifically limited, and are designed to regulate with little delay or paperwork certain activities having minimal impacts. Nationwide permits typically take two to three months to obtain whereas individual permits can take a year or more. To qualify for a nationwide permit, strict conditions must be met. If conditions are met, permittees may proceed with certain activities without notifying the Corps. Some nationwide permits require a 30-day pre-construction notification before activities can begin. Fill of certain isolated waters or wetlands that affects less that 0.5 acre of impact per Project may be permitted with a pre-construction notification. Although Van Gordon and San Simeon Creeks would qualify as jurisdictional waters of the U.S. and State, initial Project design will avoid these jurisdictional areas. If jurisdictional areas cannot be avoided, a Section 404 wetlands permit would be required.

Section 401 of the Clean Water Act

Applicants for a federal license or permit for activities which may discharge to waters of the US must seek Water Quality Certification from the state or Indian tribe with jurisdiction.[1] Such Certification is based on a finding that the discharge will meet water quality standards and other applicable requirements. In California, Regional Boards issue or deny Certification for discharges within their geographical jurisdiction. Water Quality Certification must be based on a finding that the proposed discharge will comply with water quality standards, which are defined as numeric and narrative objectives in each Regional Board's Basin Plan. Where applicable, the State Water Resources Control Board has this responsibility for projects affecting waters within the jurisdiction of multiple Regional Boards. The Regional Board's jurisdiction extends to all waters of the state and to all waters of the US, including wetlands.

Section 401 of the Clean Water Act requires that "any applicant for a federal permit for activities that involve a discharge to waters of the State, shall provide the federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act." Therefore, before the Corps will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification from the Regional Board. As noted above, jurisdictional waters will be avoided. However, if avoidance is infeasible then a 401 permit will be required.

2.2 STATE REGULATIONS

California Coastal Act §30000 et seq.

Chapter 3 of the California Coastal Act contains policies to protect water quality and the biological productivity of coastal waters (PRC Section 30231); avoid and minimize dredging,

[1] Title 33, United States Code, Section 1341; Clean Water Act Section.

diking, and filling sediments (PRC Section 30233); and mitigate wetland impacts (PRC Section 30607.1).

In addition, under the California Coastal Act "environmentally sensitive area means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (PRC Section 30107.5).

The California Coastal Act requires that jurisdictions protect Environmentally Sensitive Habitat Areas (ESHA). Specifically, PRC Section 30240 states that:

a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

The Coastal Act generally protects ESHAs where they exist and also protects "against any significant disruption of habitat values." Section 30007.5 of the Coastal Act states that where there is a conflict between policies that it:

> *…be resolved in a manner, which on balance is the most protective of significant coastal resources. In this context, the Legislature declares that broader policies which, for example, serve to concentrate development in close proximity to urban and employment centers may be more protective, overall, than specific wildlife habitat and other similar resource policies.*

The proposed Project is located within the jurisdiction of the Coastal Zone, is adjacent to San Simeon Creek and and San Simeon Creek Lagoon, both ESHAs, and is adjacent to Hearst San Simeon State Park.

California Endangered Species Act

State-listed threatened and endangered species are protected under provisions of the California Endangered Species Act (CESA). Activities that may result in "take" of individuals (defined in CESA as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") are regulated by the California Department of Fish and Wildlife (CDFW). Habitat degradation or modification is not included in the definition of "take" under CESA. Nonetheless, CDFW has interpreted "take" to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are fully protected against take, as defined above.

The CDFW has also produced a species of special concern list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection.

The proposed Project has the potential during its operational phase to indirectly affect several species protected by the State of California.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) provides for the protection of the environment within the State of California. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an Initial Study (IS); if the IS determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to write an Environmental Impact Report (EIR). A finding of non-significant effects will require either a Negative Declaration or a Mitigated Negative Declaration instead of an EIR. However, in certain conditions a project may be entirely exempt from the CEQA process. In January 2014, California Governor Edmund G. “Jerry” Brown issued an emergency drought declaration stating the Department of Water Resources and the Water Board may take actions to make water immediately available, and that CEQA and all regulations adopted pursuant to CEQA “are suspended on the basis that strict compliance with them will prevent, hinder, or delay the mitigation of the effects of the emergency.”

California Native Plant Society Rare or Endangered Plant Species

Vascular plants listed as rare or endangered by the California Native Plant Society (CNPS), but which have no designated status under state and federal endangered species legislation are defined as follows:

California Rare Plant Rank

1A- Plants Presumed Extirpated in California and either Rare or Extinct Elsewhere

1B- Plants Rare, Threatened, or Endangered in California and Elsewhere

2A- Plants Presumed Extirpated in California, But More Common Elsewhere

2B- Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

3- Plants about Which More Information is Needed - A Review List

4- Plants of Limited Distribution - A Watch List

Threat Ranks

.1- Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2- Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3- Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Fish and Game Code Sections 3503, 3503.5, 3511, and 3513

The CDFW administers the California Fish and Game Code. There are particular sections of the Code that are applicable to natural resource management. For example, Section 3503 of the Code makes it unlawful to destroy the nests or eggs of any birds that are protected under the MBTA. Furthermore, any birds in the orders Falconiformes or Strigiformes (Birds of Prey, such as hawks, eagles, and owls) are protected under Section 3503.5 of the Code which makes it unlawful to take, possess, or destroy their nest or eggs. A consultation with CDFW will be required prior to the removal of any bird of prey nest that may occur on a project site. Section 3511 of the Code lists fully protected bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Examples of species that are State fully protected include golden eagle (*Aquila chrysaetos*), and white-tailed kite (*Elanus leucurus*). Section 3513 of the Code makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

The proposed Project would be located within and adjacent to suitable nesting habitat for a variety of avian species. In order to demonstrate compliance with the aforementioned Fish and Game Code sections, the Project proponent would be required to conduct preconstruction nesting surveys if construction is to occur during the nesting season.

Lake and Streambed Alteration Program

California Fish and Game Code Sections 1600-1616 establish a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources, or, when adverse impacts cannot be avoided, ensures that adequate mitigation and/or compensation is provided.

Fish and Game Code Section 1602 requires any person, state, or local governmental agency or public utility to notify the CDFW before beginning any activity that will do one or more of the following:

(1) substantially obstruct or divert the natural flow of a river, stream, or lake;

(2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or

(3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state. CDFW's regulatory authority extends to include riparian habitat (including wetlands) supported by a river, stream, or lake regardless of the presence or absence of hydric soils and saturated soil conditions. Generally, the CDFW takes jurisdiction to the top of bank of the stream or to the outer limit of the adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. The project design and alignment expects to be able to avoid state jurisdictional waters; if avoidance is infeasible, a state 1602 Streambed Alteration Agreement would be required.

2.3 LOCAL POLICIES

Local Coastal Program

Under Section 30500 of the California Coastal Act, each local government within the California Coastal Zone must prepare or have the Coastal Commission prepare for it a Local Coastal Program (LCP). The San Luis Obispo County LCP is a comprehensive four-part management program that is intended to assist with the management and protection of the Coastal Zone and to ensure compliance with the California Coastal Act; it was certified by the California Coastal Commission in 1987. This LCP is composed of four separate documents: *Framework for Planning*, *Coastal Plan Policies* (CPP), Area Plans, and *Coastal Zone Land Use Ordinance* (CZLUO).

a) *Framework for Planning*: San Luis Obispo County is split into 13 separate land use categories. The Framework for Planning document (SLO County 1988a) describes each of those categories in detail, including purposes and definitions ("characters"). In addition, the Framework for Planning contains Coastal Table "O," a table which lists approved uses within each land use category.

b) *Coastal Plan Policies*: The San Luis Obispo County CPP (SLO County 1988b) are intended to help the county carry out the preservation policies of the Coastal Act of 1976. As such, this document recommends policies and standards to be implemented for development within the Coastal Zone and to remain in compliance with the Coastal Zone Land Use Ordinance. Among many others, the CPP includes provisions for development that may affect riparian vegetation, terrestrial habitats, wetlands, or that may require habitat restoration. Much of the CPP works in tandem with and is implemented pursuant to the CZLUO.

c) *North Coast Area Plan*: San Luis Obispo County is divided into eight separate planning areas, four of which fall within the Coastal Zone; the proposed Project is located within the North Coast Planning Area. The North Coast Planning Area extends from the northern San Luis Obispo County border south to Point Estero and east to the main ridge of the Santa Lucia Range, encompassing the communities of San Simeon and Cambria. The North Coast Area Plan (NCAP) (SLO County 1980) allocates land use within this planning area through the use of land use categories. Through these land use categories, the NCAP designates residential, commercial, and recreational development standards within the planning area to best protect and conserve natural resources and the overall land use plan. In addition to land use categories, there are "Combining Designations" (CDs). As defined by the NCAP, "Combining Designations are special overlay land use categories applied in areas of the county with potentially hazardous conditions or significant natural resources. In these areas more detailed project review is needed to avoid or minimize adverse environmental impacts, or effects of hazardous conditions on proposed projects." A 1998 update to the NCAP (CCC 1998) more specifically defined ESHAs and other protected areas within the planning area.

d) *Coastal Zone Land Use Ordinance*: The CZLUO (SLO County 1986) is enacted as Title 23 of the San Luis Obispo County Code. It is the implementation portion of the LCP and regulates development and land use within the unincorporated areas of the California Coastal Zone. Chapter 7 of the CZLUO deals with CD standards, and Sections 23.07.160 to 23.07.178 pertain specifically to environmentally sensitive areas, including Sensitive Resource Areas (SRAs), ESHAs, wetlands, streams and riparian vegetation, terrestrial habitat, and marine habitat. This document works in tandem with the CPP and provides in many cases more detailed instructions and requirements for development in or adjacent to environmentally sensitive areas.

Construction and implementation of the proposed Project will be required to remain in compliance with the LCP, and by extension, with the California Coastal Act. The proposed Project will be in or adjacent to multiple SRAs, ESHAs, and other sensitive habitats and has the potential to cause indirect operational impacts. Because the CZLUO works as the final point, the "implementation" point, in enacting the LCP and ensuring compliance with the California Coastal

Act, an analysis of the proposed Project's consistency with the CZLUO is provided in Section 6 of this document.

Section 3 Methodology

A literature review and records search was conducted to determine which sensitive biological resources have the potential to occur on the Project site or within the general vicinity. In addition, a general habitat assessment of the Project site was conducted. The field survey provided information on the existing conditions on the site and potential for sensitive biological resources to occur.

3.1 LITERATURE REVIEW

Prior to conducting the field visit, a literature review and records search was conducted for sensitive biological resources potentially occurring on or within the vicinity of the Project site. Previously recorded occurrences of special status plant and wildlife species and their proximity to the Project site were determined through a query of the California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* (CNDDB) Rarefind 5, the California Native Plant Society's (CNPS) *Electronic Inventory of Rare and Endangered Plants of California*, Calflora Database, compendia of special-status species published by CDFW, and USFWS species listings.

Literature detailing biological resources previously observed in the vicinity of the Project site and historical land uses were reviewed to understand the extent of disturbances to the habitats onsite. Standard field guides and texts on sensitive and non-sensitive biological resources were reviewed for habitat requirements, as well as the following resources:

- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), Soil Survey;
- USFWS Critical Habitat designations for Threatened and Endangered Species;
- USFWS Endangered Species Profile and Primary Constituent Elements (PCEs) for tidewater goby, California red-legged frog, and steelhead;
- San Luis Obispo County Framework for Planning
- San Luis Obispo County Coastal Plan Policies;
- San Luis Obispo County North Coast Area Plan;
- San Luis Obispo County North Coast Area Plan Update; and
- San Luis Obispo County Coastal Zone Land Use Ordinance.

The literature review provided a baseline from which to inventory the biological resources potentially occurring on the Project site. Additional recorded occurrences of these species found on or near the Project site were derived from database queries. The CNDDB ArcGIS database was used, together with ArcGIS software, to locate the nearest occurrence and determine the distance from the Project site.

3.2 HABITAT ASSESSMENT AND FIELD INVESTIGATION

RBF biological manager Thomas J. McGill and biologists Travis J. McGill and Ryan Winkleman inventoried and evaluated the extent and conditions of the plant communities found within the boundaries of the survey area on May 8 and 9, 2014. The survey area included all Project components (i.e. pipelines and wells), as well as San Simeon Creek, portions of Van Gordon Creek at the confluence of San Simeon Creek, and the current extent of the San Simeon Creek Lagoon. Plant communities identified on aerial photographs during the literature review were ground-truthed by walking meandering transects through the plant communities and along boundaries between plant communities. The plant communities were evaluated for their potential to support sensitive plant and wildlife species as well as the identification of riparian/riverine habitat, and corridors and linkages that may support the movement of wildlife through the area.

Special attention was paid to sensitive habitats and/or undeveloped, natural areas having a higher potential to support sensitive flora and fauna species. Methods to detect the presence of sensitive aquatic species included direct observation and dipnetting.

Notes were taken during the survey of all plant and wildlife species detected, including dominant plant species, as well as the locations and general characteristics of potential jurisdictional features. Detections of wildlife species were made by scat, trails, tracks, burrows, nests, and visual and aural observation. In addition, site characteristics such as soil condition, topography, presence of indicator species, condition of the plant communities, hydrology, and evidence of human use of the site were noted. The plant communities were classified in accordance with CDFW (2003) and Holland (1986), delineated on an aerial photograph, and then digitized into GIS Arcview. The Arcview application was used to compute the area of each plant community in acres.

3.3 SOIL SERIES ASSESSMENT

Onsite and adjoining soils were researched prior to the field visit using the USDA NRCS Soil Survey for San Joaquin County, California. In addition, a review of the local geological conditions and historical aerial photographs was conducted to assess the ecological changes the Project site has undergone.

3.4 PLANT COMMUNITIES

Plant communities were mapped using 7.5-minute USGS topographic base maps and aerial photography. The plant communities within the Project site were classified according to CDFW's List of Terrestrial Natural Communities (2003) and cross-referenced to descriptions provided in Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986).

The CDFW does not currently have a narrative description of the vegetation communities; therefore, the descriptions provided in Appendix A are according to Holland.

3.5 PLANTS

Common plant species observed during the field survey were identified by visual characteristics and morphology in the field. Unusual or less familiar plants were identified in the laboratory using taxonomic guides. Taxonomic nomenclature used in this report follows the 2012 Jepson Manual (Hickman 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

3.6 WILDLIFE

Wildlife species were detected and identified during the field survey by sight, calls, tracks, scat, trails, burrows, and nests. Field guides were used to assist with identification of species during surveys and included the National Geographic Field Guide to the Birds of North America (2011) for birds and Burt and Grossenheider (1980) for mammals. In this report, scientific names are provided immediately following common names of wildlife species (first reference only).

3.7 JURISDICTIONAL AREAS

Aerial photography was reviewed prior to conducting the habitat assessment. The aerials were used to locate and inspect any potential natural drainage features and water bodies that may fall under the jurisdiction of the U.S. Army Corps of Engineers (Corps), Regional Water Quality Control Board, or CDFW. In general, surface drainage features indicated as blue-line streams on USGS maps that are observed or expected to exhibit evidence of flow are considered potential riparian/riverine habitat and are also subject to state and federal regulatory authorities. During the habitat assessment, Van Gordon Creek and San Simeon Creek were noted as surface drainage features that would qualify as federal and state jurisdictional waters.

Section 4 Existing Conditions

4.1 LOCAL CLIMATE

The region has a year-round coastal climate with mild summers and cool winters. The warmest months are typically September and October with average highs of 71 degrees Fahrenheit (F), while the coolest months are typically December and January, with average lows of 45°F. Average annual rainfall is 17.61 inches, with February typically receiving the most precipitation. Weather conditions during the surveys included temperatures in the mid to high 60s (degrees Fahrenheit) with clear skies. Winds were minimal and progressively became stronger later in the day.

4.2 TOPOGRAPHY AND SOILS

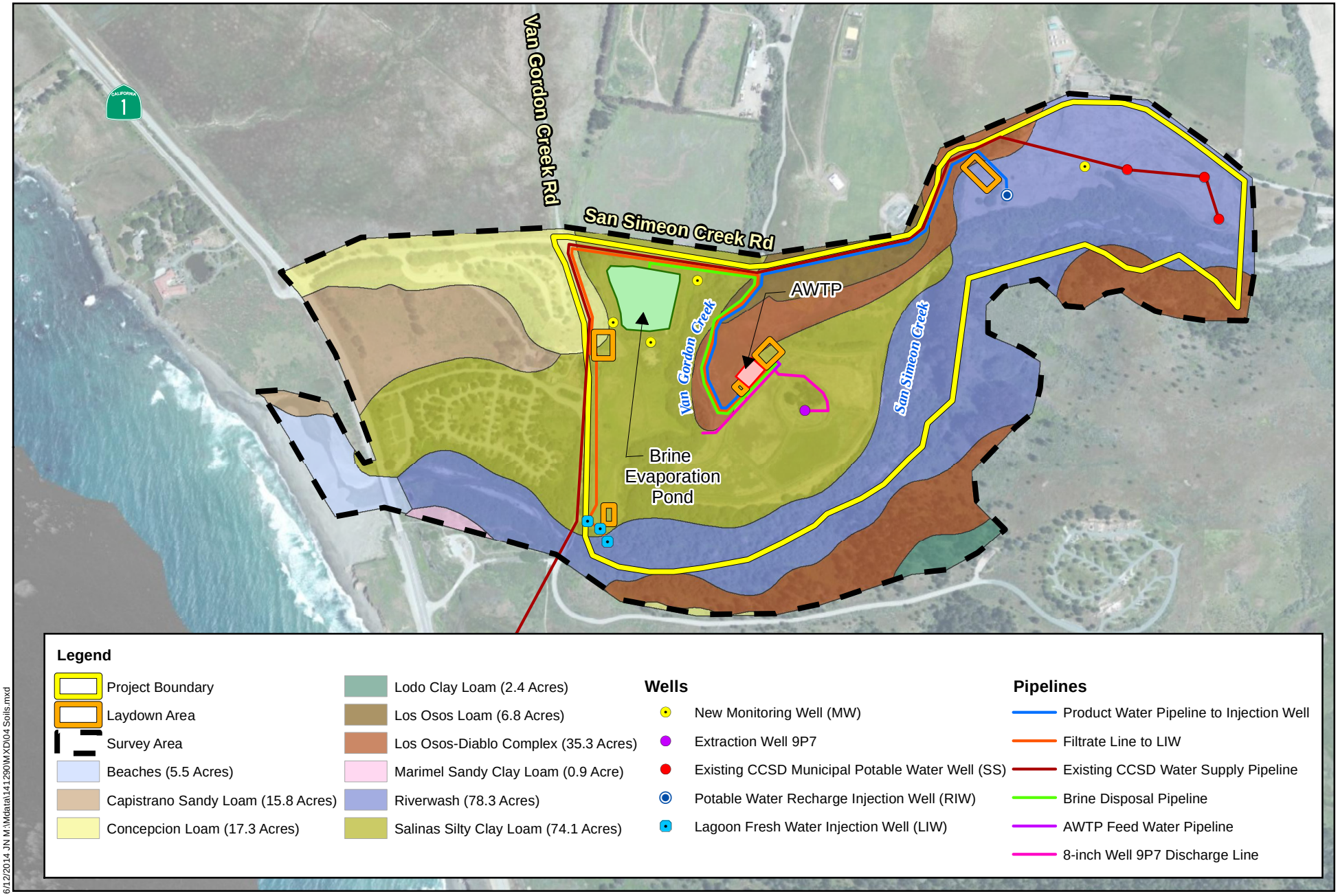
Surface elevations range from approximately 200 to 1,200 feet above mean sea level (msl) with areas of greater topographic relief located along the western boundary of the Project site. Based on the USDA Soil Survey, the Project site and survey area are underlain by the following soil units (Exhibit 4, *Soils Map*): Beaches, Capistrano sandy loam (rolling), Concepcion loam (5 to 9 percent slopes), Lodo clay loam (5 to 15 percent slopes), Los Osos loam (5 to 9 percent slopes), Los Osos loam (30 to 50 percent slopes), Los Osos-Diablo complex (15 to 30 percent slopes), Marimel sandy-clay loam (occasionally flooded), Riverwash, and Salinas silty clay loam (0 to 2 percent slopes).

Beaches (107)

Beaches are poorly-drained. In north coastal San Luis Obispo County they occur at an elevation of 0 to 10 feet, with a mean annual precipitation of 42 to 48 inches, a mean annual air temperature range of 52 to 57°F, and a frost-free period of 190 to 210 days. The typical profile for beaches in north coastal San Luis Obispo County includes sand from 0 to 60 inches. The depth to the water table is about 0 to 72 inches and the available water capacity is very low at approximately 2.4 inches. Beaches are not classified as prime farmland.

Capistrano Sandy Loam, Rolling (114)

This soil type is well-drained and is developed in Eolian deposits. In north coastal San Luis Obispo County it is found on dunes at an elevation of 0 to 200 feet. The mean annual precipitation for where this soil type occurs in north coastal San Luis Obispo County is 20 to 24 inches, with a mean annual air temperature of 55°F and a frost-free period of 330 to 365 days. The typical profile of this soil in north coastal San Luis Obispo County includes sandy loam from 0 to 60 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is more than 80 inches, and the available water capacity is moderate at approximately 6.8 inches. This soil type is classified as prime farmland if irrigated.



6/12/2014 JN M:\Mdata\141290\MXD\04 Soils.mxd

RBF CONSULTING A Baker Company

0 400 800 1,600 Feet

Source: NRCS Soils ca-664, CDM Smith, ESRI World Imagery Basemap

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
HABITAT ASSESSMENT

Soils Map

Exhibit 4

Concepcion Loam, 5 to 9% (121)

This soil type is moderately well-drained and is developed in alluvium derived from sedimentary rock. In north coastal San Luis Obispo County it is found on terraces at an elevation of 10 to 800 feet. The mean annual precipitation for where this soil type occurs in north coastal San Luis Obispo County is 17 to 24 inches, with a mean annual air temperature of 57°F and a frost-free period of 300 to 330 days. The typical profile of this soil in north coastal San Luis Obispo County includes loam from 0 to 19 inches, clay from 19 to 47 inches, and sandy clay loam from 47 to 63 inches. The depth to a restrictive feature is 10 to 21 inches to an abrupt textural change, the depth to the water table is more than 80 inches, and the available water capacity is low at approximately 3.2 inches. This soil type is classified as farmland of statewide importance.

Lodo Clay Loam, 5 to 15% (147)

This soil type is somewhat excessively-drained and is developed in residuum weathered from sandstone and shale. In north coastal San Luis Obispo County it is found on hills and mountains at an elevation of 300 to 3,000 feet. The mean annual precipitation for where this soil type occurs in north coastal San Luis Obispo County is 15 to 35 inches, with a mean annual air temperature of 59°F and a frost-free period of 250 to 365 days. The typical profile of this soil in north coastal San Luis Obispo County includes clay loam from 0 to 12 inches and unweathered bedrock from 12 to 22 inches. The depth to a restrictive feature is 4 to 20 inches to lithic bedrock, the depth to the water table is more than 80 inches, and the available water capacity is very low at approximately 1.9 inches. This soil type is not classified as prime farmland.

Los Osos Loam, 5 to 9% (158)

This soil type is well-drained and is developed in residuum weathered from sandstone and shale. In north coastal San Luis Obispo County it is found on hills and ridges at an elevation of 100 to 2,000 feet. The mean annual precipitation for where this soil type occurs in north coastal San Luis Obispo County is 15 to 25 inches, with a mean annual air temperature range of 55 to 59°F and a frost-free period of 275 to 350 days. The typical profile of this soil in north coastal San Luis Obispo County includes loam from 0 to 14 inches; clay from 14 to 32 inches; sandy loam, loam, and clay loam from 32 to 39 inches; and weathered bedrock from 39 to 59 inches. The depth to a restrictive feature is 20 to 40 inches to paralithic bedrock, the depth to the water table is more than 80 inches, and the available water capacity is moderate at approximately 7.3 inches. This soil type is classified as farmland of statewide importance.

Los Osos Loam, 30 to 50% (161)

This soil type is well-drained and is developed in residuum weathered from sandstone and shale. In north coastal San Luis Obispo County it is found on hills and ridges at an elevation of 100 to 3,000 feet. The mean annual precipitation for where this soil type occurs in north coastal San Luis Obispo County is 15 to 35 inches, with a mean annual air temperature range of 55 to

59°F and a frost-free period of 275 to 350 days. The typical profile of this soil in north coastal San Luis Obispo County includes loam from 0 to 14 inches, clay from 14 to 32 inches, sandy loam from 32 to 39 inches; and weathered bedrock from 39 to 59 inches. The depth to a restrictive feature is 20 to 40 inches to paralithic bedrock, the depth to the water table is more than 80 inches, and the available water capacity is low at approximately 5.6 inches. This soil type is not classified as prime farmland.

Los Osos-Diablo Complex, 15 to 30% (164)

This soil type is well-drained and is developed in residuum weathered from sandstone and shale. In north coastal San Luis Obispo County it is found on hills and mountains at an elevation of 200 to 3,000 feet. The mean annual precipitation for where this soil type occurs in north coastal San Luis Obispo County is 15 to 28 inches, with a mean annual air temperature of 59°F and a frost-free period of 275 to 350 days. The typical profile of this soil in north coastal San Luis Obispo County includes loam from 0 to 14 inches, clay from 14 to 32 inches, sandy loam from 32 to 39 inches; and weathered bedrock from 39 to 59 inches. The depth to a restrictive feature is 20 to 40 inches to paralithic bedrock, the depth to the water table is more than 80 inches, and the available water capacity is low at approximately 5.6 inches. This soil type is not classified as prime farmland.

Marimel Sandy Clay Loam, Occasionally Flooded (169)

This soil type is somewhat poorly-drained and is developed in alluvium derived from sedimentary rock. In north coastal San Luis Obispo County it is found in valleys, alluvial fans, and floodplains at an elevation of 0 to 400 feet. The mean annual precipitation for where this soil type occurs in north coastal San Luis Obispo County is 15 to 20 inches, with a mean annual air temperature range of 55 to 59°F and a frost-free period of 300 to 365 days. The typical profile of this soil in north coastal San Luis Obispo County includes sandy clay loam from 0 to 16 inches and stratified loam to clay loam to silty clay loam from 16 to 60 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is about 24 to 60 inches, and the available water capacity is high at approximately 10.2 inches. This soil type is classified as prime farmland if irrigated and drained.

Riverwash (194)

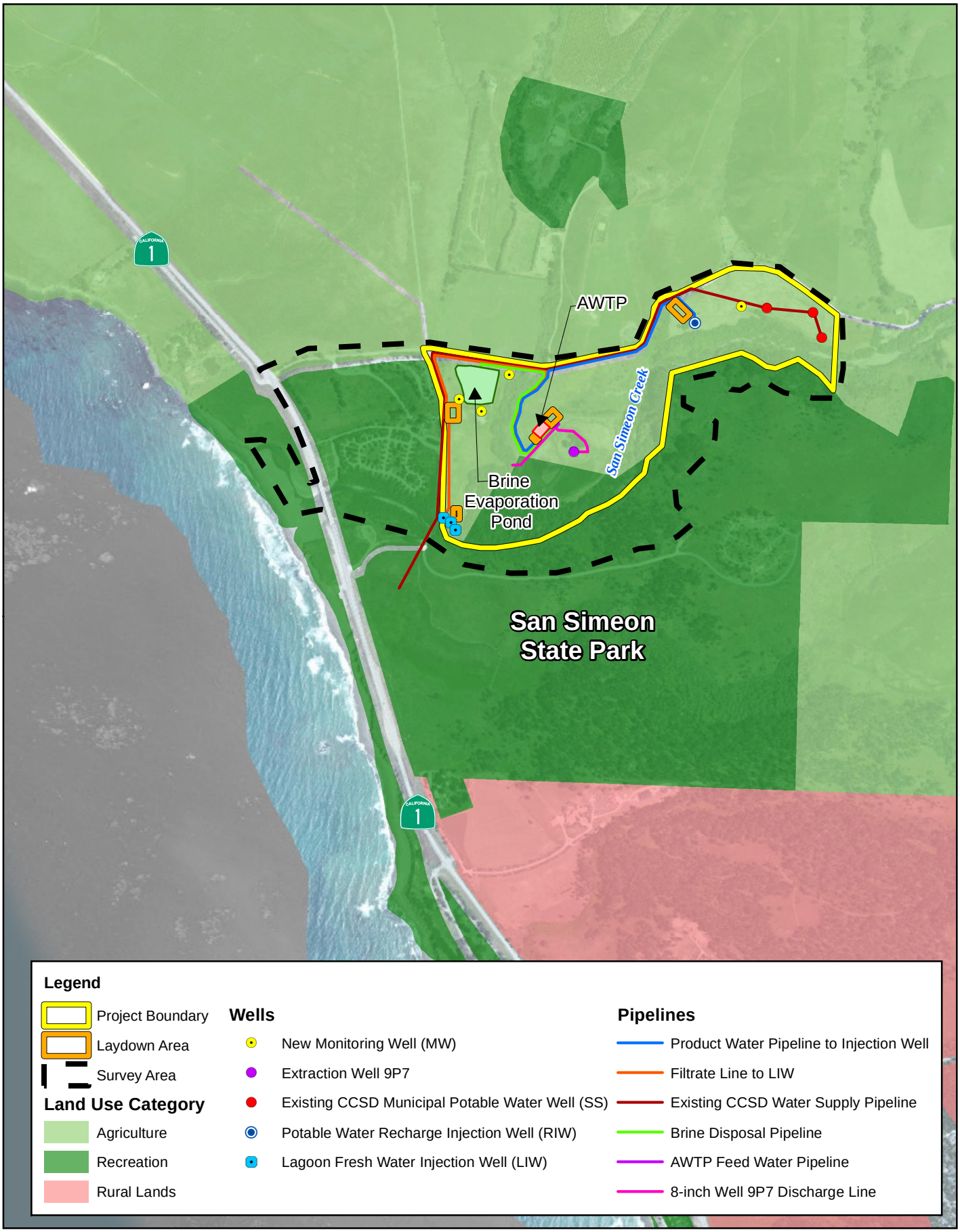
This soil type is excessively-drained. In north coastal San Luis Obispo County it is found in channels. The typical profile of this soil in north coastal San Luis Obispo County includes sand from 0 to 6 inches and stratified coarse sand to sandy loam from 6 to 60 inches. The depth to the water table is 0 to 24 inches, and the available water capacity is very low at approximately 2.9 inches. This soil type is not classified as prime farmland.

Salinas Silty Clay Loam, 0 to 2% (197)

This soil type is well-drained and is developed in alluvium derived from sedimentary rock. In north coastal San Luis Obispo County it is found on alluvial flats and alluvial fans at an elevation of 0 to 40 feet. The mean annual precipitation for where this soil type occurs in north coastal San Luis Obispo County is 14 to 22 inches, with a mean annual air temperature of 57°F and a frost-free period of 275 to 365 days. The typical profile of this soil in north coastal San Luis Obispo County includes silty clay loam from 0 to 29 inches and stratified loam to silty clay loam from 29 to 72 inches. The depth to a restrictive feature is more than 80 inches, the depth to the water table is more than 80 inches, and the available water capacity is high at approximately 10.5 inches. This soil type is classified as prime farmland if irrigated.

4.3 SURROUNDING LAND USES

The Project site is zoned Agriculture (Exhibit 5, *Surrounding Land Uses*). The western side of the Project site is located adjacent to Hearst San Simeon State Park, which encompasses the land both to the west and south. San Simeon Creek Campground is located directly across Van Gordon Creek Road to the west, while Washburn Campground is located across San Simeon Creek to the south. The lands to the north and east of the Project site are primarily open space and agricultural developments.



Legend

Project Boundary
Laydown Area
Survey Area

Land Use Category

Agriculture
Recreation
Rural Lands

Wells

New Monitoring Well (MW)
Extraction Well 9P7
Existing CCSD Municipal Potable Water Well (SS)
Potable Water Recharge Injection Well (RIW)
Lagoon Fresh Water Injection Well (LIW)

Pipelines

Product Water Pipeline to Injection Well
Filtrate Line to LIW
Existing CCSD Water Supply Pipeline
Brine Disposal Pipeline
AWTP Feed Water Pipeline
8-inch Well 9P7 Discharge Line

6/12/2014 JN M:\Mdata\141290\MXD\05 Land Use.mxd

RBF CONSULTING
A Baker Company

0 0.125 0.25 0.5 Miles

Source: County of San Luis Obispo, CDM Smith, ESRI World Topographic Map

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
HABITAT ASSESSMENT

Surrounding Land Uses

Exhibit 5

Section 5 Discussion

5.1 SITE CONDITIONS

The direct Project site is primarily undeveloped, although heavily disturbed. It consists mostly of open fields, with some paved roads and building development along Van Gordon Creek Road. The Project site is directly adjacent to Hearst San Simeon State Park, located to the west between San Simeon Monterey Creek Road and San Simeon Creek and to the south on the other side of San Simeon Creek. Areas to the north of the Project site on the other side of San Simeon Monterey Creek Road are also primarily undeveloped and consist mostly of agricultural fields.

5.2 VEGETATION

Six plant communities were observed within the boundaries of the Project site during the habitat assessment (Exhibit 6, *Vegetation Map*): Central Coast Arroyo Willow Riparian Forest, Monterey Pine Stand, Annual Grassland, Ruderal, Disturbed, and Developed. A lagoon and sandbar, located offsite to the west, were also observed. Although offsite, this vegetation is addressed in this assessment since Project implementation could indirectly affect the lagoon. These plant communities are described in further detail below.

5.2.1 Central Coast Arroyo Willow Riparian Forest

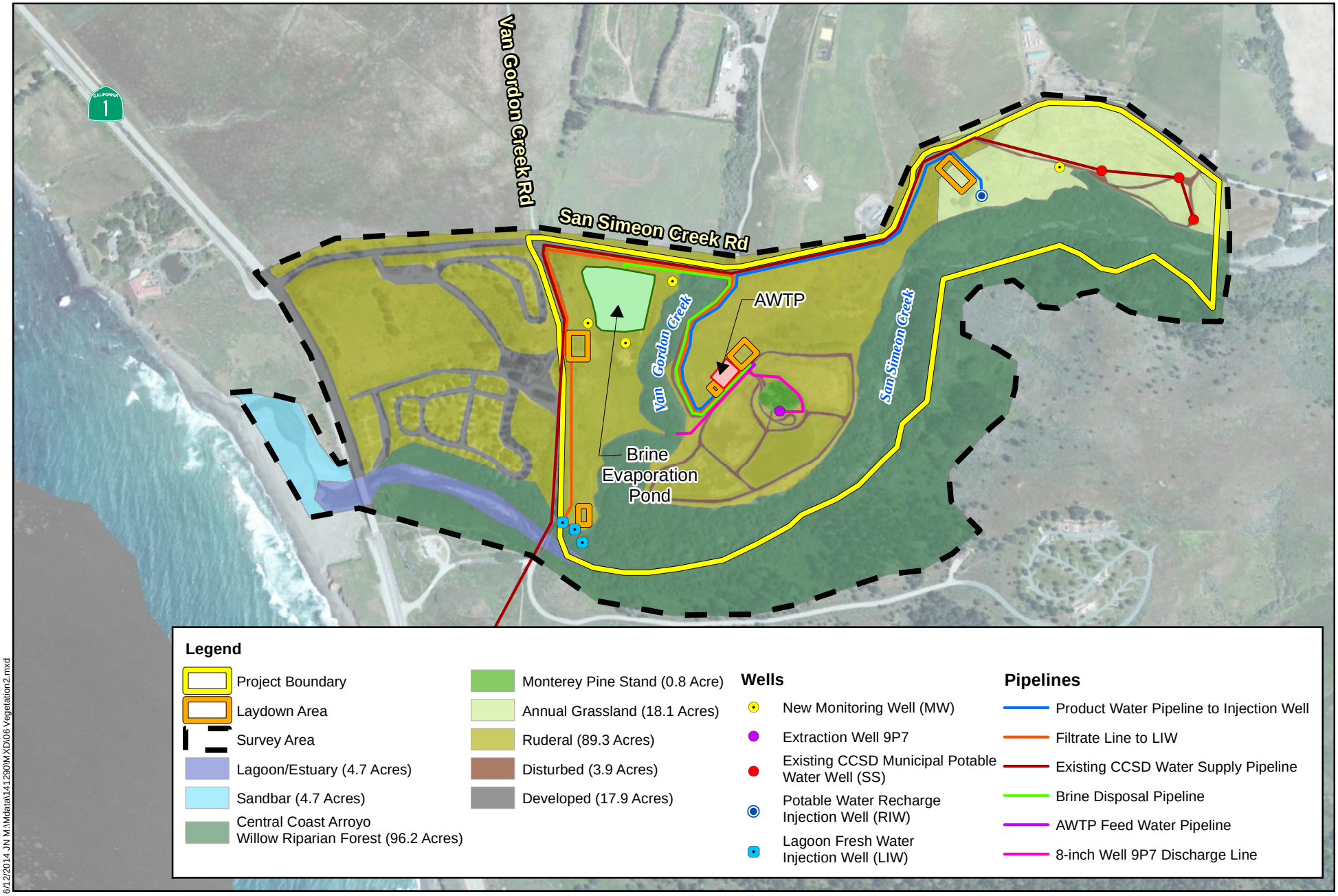
The Central Coast Arroyo Willow Riparian Forest is characterized by a dense, low, closed-canopy forest dominated by arroyo willow (*Salix lasiolepis*). It typically occurs in low gradient stream reaches in areas that are moist to saturated sandy or gravelly soil, especially in areas within the coastal fog incursion zone. Other common species along the edge of San Simeon Creek include western sycamore (*Platanus racemosa*), eucalyptus (*Eucalyptus* sp.), and cape ivy (*Delairea odorata*).

5.2.2 Monterey Pine Stand

There is one small stand of Monterey pine located within the Project site. It is located in the center of the percolation ponds, with Well 9P7 located underneath the trees. The canopy cover in this area is composed entirely of Monterey pines, with the understory composed mostly of ripgut brome (*Bromus diandrus*) and wild oat (*Avena fatua*).

5.2.3 Lagoon/Estuary

San Simeon Creek Lagoon is located at the downstream end of San Simeon Creek. It crosses under SR-1 and spreads onto San Simeon State Beach, providing valuable habitat for steelhead, tidewater goby, and threespine stickleback. At the time of the habitat assessment the



6/12/2014 JN M:\Mdata\141290\MXD\06 Vegetation2.mxd

RBF CONSULTING A Baker Company

0 400 800 1,600 Feet

Source: CDM Smith, ESRI World Imagery Basemap

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
HABITAT ASSESSMENT

Vegetation Map

Exhibit 6

sand bar restricting the water from the shore was closed, resulting in a freshwater lagoon habitat. The sand bar generally opens in late fall and closes again by mid-spring; while the sand bar is open, oceanic salt water combines with the freshwater of San Simeon Creek to create an estuary. The downstream end of the lagoon is not vegetated, but the upstream end contains emergent and riparian vegetation, including cattails (*Typha* sp.) and arroyo willow.

5.2.4 Annual Grassland

An annual grassland is located on the eastern side of the Project site between San Simeon Monterey Creek Road and San Simeon Creek. There are three existing wells located in this area, which is also the area where the RIW is proposed to be located. Some of the more common species in this area include canary grass (*Phalaris aquatica*), wild oat, ripgut brome, coyote bush (*Baccharis pilularis*),

5.2.5 Ruderal

Much of the area surrounding the immediate Project site can be considered ruderal. This includes the percolation ponds, the brine evaporation pond, and the unpaved path from the northeastern corner of the site to the site of the LIW. Some of the more common species present within these areas include ripgut brome, black mustard (*Brassica nigra*) and shortpod mustard (*Hirschfeldia incana*), giant horse tail (*Equisetum telmateia* ssp. *braunii*), fennel (*Foeniculum vulgare*), plantain (*Plantago* sp.), coyote bush, Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), and canary grass.

5.2.6 Disturbed

Disturbed areas within the survey area can be described as unpaved dirt roads, particularly those surrounding the percolation ponds and those passing through the eastern well field. These areas are not vegetated.

5.2.7 Developed

Developed areas within the survey area include existing wells and buildings, as well as the main access road to Well 9P7. These areas are not vegetated.

5.3 WILDLIFE

Plant communities provide food sources, along with foraging, nesting and denning sites, cover, and protection from adverse weather or predation. This section provides a discussion of those wildlife species observed, expected or not expected to occur onsite. The discussion is to be used as a general reference and is limited by the season, time of day, and weather condition in which the survey was conducted. Wildlife observations were based on calls, songs, scat, tracks, burrows and actual sightings of animals.

5.3.1 Amphibians

Much of the Project site and its immediate surrounding area would constitute suitable habitat for amphibians. However, only one amphibian was detected during surveys, Sierran chorus frog (*Pseudacris sierrae*). Adult frogs were heard calling in San Simeon Creek, and tadpoles of various development stages were observed in several disconnected small pools in the dry portion of the creek. Other common amphibian species that could occur in San Simeon Creek or during heavy rainfall and subsequent ponding of water in the percolation ponds include western toad (*Anaxyrus boreas*), American bullfrog (*Lithobates catesbeianus*), ensatina (*Ensatina eschscholtzii*), and various species of slender salamander (*Batrachoseps* sp.). The Project site and surrounding area have the potential to support multiple special-status amphibians, including foothill yellow-legged frog (*Rana boylii*), California red-legged frog, and Coast Range newt (*Taricha torosa*). The status and habitat requirements for each of these three species are discussed in greater detail in Section 5.7.2.1 below.

5.3.2 Reptiles

The Project site has the potential to support both terrestrial and aquatic reptiles. Two reptile species were observed during the habitat assessment, western fence lizard (*Sceloporus occidentalis*) and coast garter snake (*Thamnophis elegans terrestris*). The immediate Project site is primarily composed of disturbed, altered areas that are presently overgrown with vegetation. Two creeks, Van Gordon Creek and San Simeon Creek, traverse portions of the Project site. The general Project vicinity has the potential to support a number of reptilian species including gopher snakes (*Pituophis catenifer*), garter snakes (*Thamnophis* ssp.), California kingsnake *(Lampropeltis getula californiae*), northern Pacific rattlesnake (*Crotalus oreganus oreganus*), alligator lizard (*Elgaria multicarinata*), and side-blotched lizard (*Uta stansburiana*). The Project site and surrounding area have the potential to support multiple special-status reptiles, including western pond turtle and two-striped garter snake (*Thamnophis hammondii*). The status and habitat requirements for each of these two species are discussed in greater detail in Section 5.7.2.1 below.

5.3.3 Avian

The Project site and adjacent area support a high variety of avian species. Because of the high number of species observed, only the most numerous are mentioned here. Those that were observed in the greatest quantities included turkey vulture (*Cathartes aura*), California gull (*Larus californicus*), Pacific-slope flycatcher (*Empidonax difficilis*), bushtit (*Psaltriparus minimus*), cedar waxwing (*Bombycilla cedrorum*), song sparrow (*Melospiza melodia*), red-winged blackbird (*Agelaius phoeniceus*), and house finch (*Haemorhous mexicanus*). The Project site and surrounding area have the potential to support special-status raptors such as ferruginous hawk (*Buteo regalis*) and prairie falcon (*Falco mexicanus*). The status and habitat

requirements for each of these two species are discussed in greater detail in Section 5.7.2.2 below.

5.3.4 Mammals

The plant communities within the Project site are anticipated to provide suitable habitat for a number of mammalian species acclimated to heavy disturbance. However, most mammal species are nocturnal and are difficult to observe during a diurnal field visit. No mammals were directly observed during the habitat assessment, though coyote (*Canis latrans*) and other large mammal scat was observed throughout the survey area, and a woodrat (*Neotoma* sp.) midden was observed on the border of San Simeon Creek. Common mammalian species expected to occur on the Project site include California ground squirrel (*Otospermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtis californicus*), deer mouse (*Peromyscus maniculatus*), western skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), cottontail rabbits (*Sylvilagus audubonii*), and opossum (*Didelphis virginiana*). The Project site and surrounding area have the potential to support special-status mammals, including fringed myotis (*Myotis thysanodes*) and Yuma myotis (*Myotis yumanensis*). The status and habitat requirements for each of these two species are discussed in greater detail in Section 5.7.2.3 below.

5.3.5 Fish

When wetted, San Simeon Creek, Van Gordon Creek, the San Simeon Creek Lagoon, and their tributaries would provide suitable habitat for fish. Threespine stickleback (*Gasterosteus aculeatus*) and the federally endangered tidewater goby (*Eucyclogobius newberryi*) were observed during the habitat assessment in San Simeon Creek and San Simeon Creek Lagoon. In addition to tidewater goby, the aforementioned waterways have the potential to support another special-status fish species, steelhead trout. The status and habitat requirements for both of these species are discussed in greater detail in Section 5.7.2.4 below.

5.4 NESTING BIRDS

The plant communities within and adjacent to the Project site, have the potential to provide suitable nesting opportunities for raptors and passerines. The habitat assessment was conducted during the breeding season, and one likely red-tailed hawk (*Buteo jamaicensis*) nest was observed. A pair of red-tailed hawks was observed for a long period circling and flying in the vicinity of a large nest in a tall pine tree on the edge of San Simeon Creek, but neither bird was observed entering or leaving the nest.

5.5 MIGRATORY CORRIDORS AND LINKAGES

The eastern portion of the Project site abuts the foothills of the Santa Lucia Mountains. This mountain range provides a natural corridor to the north and south along the Coast Ranges. However, while the Project vicinity is considered to be a north-south migratory linkage along the mountains, no formal east-west linkage has been recognized along San Simeon Creek or the other waterways by connectivity assessments such as Missing Linkages (Penrod et al. 2001) or the California Essential Habitat Connectivity Project (Spencer et al. 2010). Regardless, San Simeon Creek and the other waterways are likely to provide valuable migration habitat for birds and fish. San Simeon Creek is recognized by the California Coastal Commission and by CDFW as an essential creek for steelhead migration, and the lagoon that forms at the mouth of San Simeon Creek can host both juvenile steelhead and tidewater goby (CCC 1998). While California red-legged frog can migrate or move to upland areas during the nonbreeding season, this is decided by individual frogs and is not necessarily a feature of every frog in a population. Nevertheless, frogs that may be present in San Simeon Creek or other waterways in the Project vicinity may migrate up and down the waterways or leave the water and head to upland grasslands during seasonal migrations.

5.6 JURISDICTIONAL AREAS

A formal jurisdictional delineation has not been conducted for the proposed Project. However, it is expected based on RBF's 2014 habitat assessment that both Van Gordon and San Simeon Creeks would qualify as Waters of the U.S. and Waters of the State. The Project components are proposed outside of these jurisdictional areas. The proposed Project is designed to avoid direct impacts to both of these waterways. It is not currently expected that 404, 401, or 1602 permits would be required, but if Project design changes and directly impacts these creeks, any or all of these permits may be required prior to construction.

5.7 SENSITIVE BIOLOGICAL RESOURCES

The CNDDB was queried for reported locations of listed and sensitive plant and wildlife species as well as sensitive natural plant communities in the Cambria, Pebblestone Shut-in, Pico Creek, and San Simeon USGS 7.5-minute quadrangles. A search of published records of these species was conducted within these quadrangles using the CNDDB Rarefind 5 online software. The CNPS Inventory of Rare and Endangered Plants of California supplied information regarding the distribution and habitats of vascular plants in the vicinity of the Project site. The habitat assessment was used to assess the ability of the plant communities found onsite to provide suitable habitat for relevant special-status plant and wildlife species.

The literature search identified 33 sensitive plant species, 16 sensitive wildlife species, and two sensitive habitats as having the potential to occur within the queried quadrangles. Sensitive plant and wildlife species were evaluated for their potential to occur within the Project

boundaries based on habitat requirements, availability and quality of suitable habitat, and known distributions. Species determined to have the potential to occur within the general vicinity are presented in Appendix A, Sensitive Habitats and Potentially Occurring Sensitive Plant and Wildlife Species. Appendix A summarizes conclusions from analysis and field surveys regarding the potential occurrence of listed and sensitive plant and wildlife species within the Project site.

Numerous special-status plant and wildlife species are known to occur or have the potential to occur on the Project site or in the general vicinity of the Project site. In particular, the percolation ponds, San Simeon Creek, and the San Simeon Creek Lagoon have the highest potential to support special-status species.

5.7.1 Sensitive Plants

Thirty-three special-status plant species have been recorded in the Cambria, Pebblestone Shut-in, Pico Creek, San Simeon USGS quadrangles. Based on habitat requirements for specific species, availability and quality of habitats needed by sensitive plant species, it was determined that the survey area has a moderate potential to provide suitable habitat for two sensitive plant species, with one additional species that was observed to be present. These species are listed below.

Compact Cobwebby Thistle

Compact cobwebby thistle (*Cirsium occidentale* var. *compactum*) is a perennial herb that flowers between April and June. It is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is fairly endangered in California. It is endemic to California and is primarily known from San Luis Obispo County. It occurs in chaparral, grassland, coastal prairies, and coastal scrub on dunes and in clay soils at elevations between 16 and 492 feet.

There is suitable habitat for this species within the Project site's grassland areas. Many of the soils in the Project area also have clay elements necessary to support this species. This species was detected in 1991 on a coastal bluff approximately 0.25 mile north of the western edge of San Simeon Creek Lagoon, and approximately 0.5 mile from the edge of the site. This species is expected to have a moderate potential to occur.

Jones' Layia

Jones' layia (*Layia jonesii*) is an annual herb that flowers between March and May. It is designated by the CNPS with the Rare Plant Rank 1B.2, indicating that is rare, threatened, or endangered in California and elsewhere, and is fairly endangered in California. It is endemic to California and is only known to occur in San Luis Obispo County. It occurs in clay and

serpentine soils in chaparral and valley and foothill grassland at elevations between 16 and 1,312 feet.

Suitable habitat for this species occurs on the eastern side of the Project area in the grassland areas. Many of the soils in the Project area also have clay elements needed to support this species. This species is expected to have a moderate potential to occur.

Monterey Pine

Monterey pine (*Pinus radiata*) is a perennial evergreen tree. It is designated by the CNPS with the Rare Plant Rank 1B.1, indicating that is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California. It is cultivated throughout the world but only occurs naturally at three locations in California, including one near Cambria. It occurs in closed-cone coniferous forests and cismontane woodlands at elevations between 82 and 607 feet in elevation.

This species was observed onsite during the habitat assessment. It is present in a small stand in the center of the percolation ponds, surrounding Well 9P7.

5.7.2 Sensitive Wildlife

Sixteen special-status wildlife species have been recorded in the Cambria, Pebblestone Shut-in, Pico Creek, San Simeon USGS quadrangles. Based on habitat requirements for specific species, availability and quality of habitats needed by sensitive wildlife species, it was determined that the Project site has a moderate to high potential to provide suitable habitat for 10 sensitive wildlife species. One additional sensitive wildlife species was observed onsite.

5.7.2.1 Amphibian and Reptile Species

Based on the results of the habitat assessment, it was determined that the habitat in and around the Project site has a moderate to high potential to provide suitable habitat for five sensitive amphibian and reptile species listed in the CNDDB as having the potential to occur on or within the general vicinity of the Project site.

Western Pond Turtle

The western pond turtle is designated by the CDFW as a California species of special concern. It typically inhabits slow-moving streams, ponds, and marshes with exposed banks, logs, and other suitable locations for basking. Pond turtles mate and lay eggs in spring and summer in upland grassland habitat, and in most of their range will overwinter between October and April.

Western pond turtle has been previously documented in San Simeon Creek and San Simeon Creek Lagoon, but was not observed during RBF's habitat assessment. Suitable habitat is located within these two areas, particularly in the downstream reaches of San Simeon Creek where the creek substrate gives way from rocks to sandy or muddy bottoms, which are often utilized by pond turtles for hiding during evasive movements. This species has a high potential to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.

Foothill Yellow-legged Frog

Foothill yellow-legged frog is designated by the CDFW as a California species of special concern. It is primarily found in slow-moving rocky streams with open, sunny banks, though it may also be found in isolated pools and backwaters. Surrounding vegetation may include forests, woodlands, chaparral, and meadow communities. Foothill yellow-legged frogs typically breed between April and July after water levels have stabilized and turbidity has decreased.

There is suitable habitat for this species in the upland portions of San Simeon Creek, where the creek contains a rocky substrate. At the time of the habitat assessment this area was almost completely dry, with only small pools persisting that contained Sierran chorus frog tadpoles. This species has a moderate potential to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.

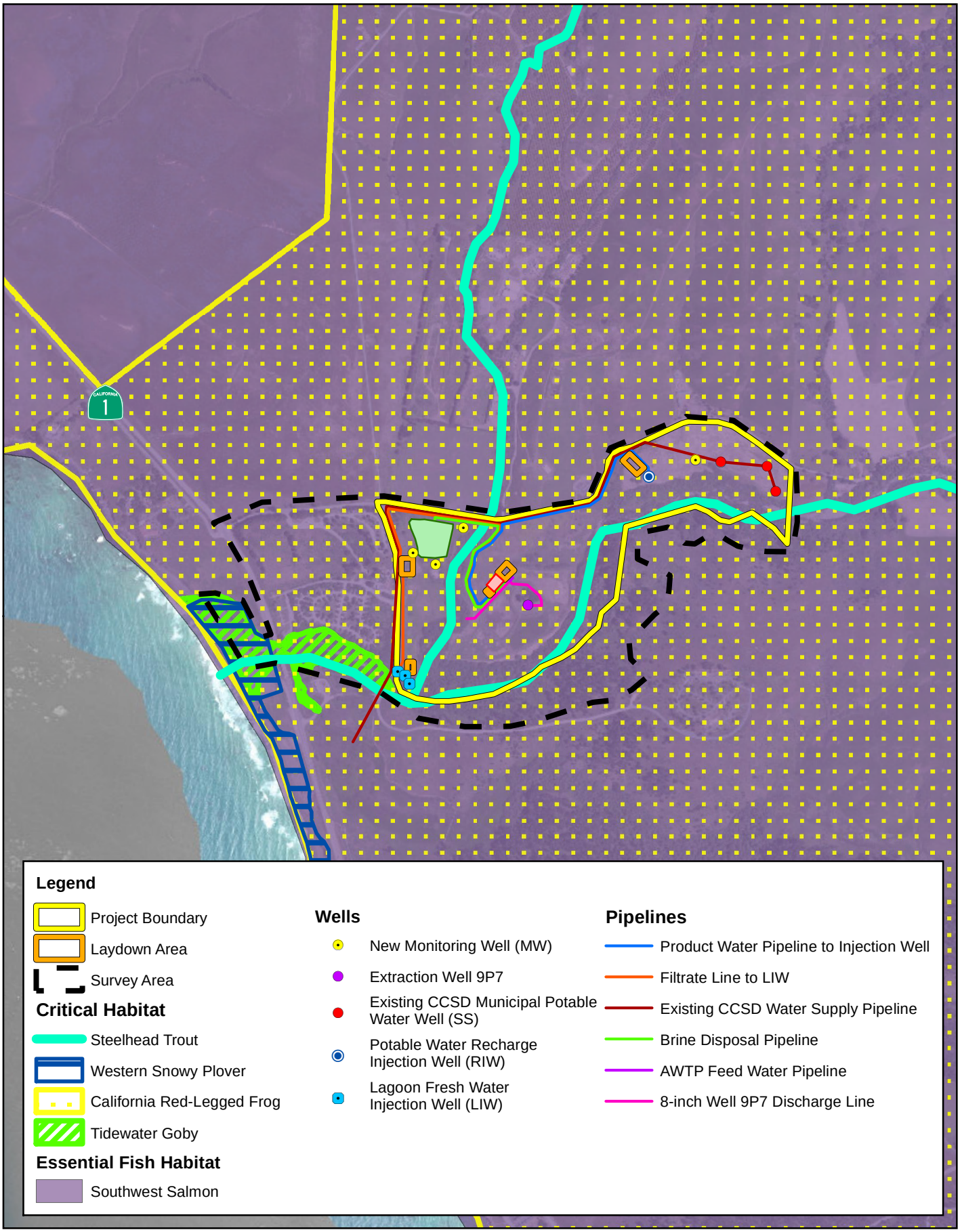
California Red-legged Frog

The CRLF is federally listed as threatened and is designated by the CDFW as a California species of special concern. The CRLF is primarily found near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover and is most common in lowlands or foothills. The CRLF breeds typically breeds in winter and spring between February and April in permanent or ephemeral water sources including lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.

CRLF have been reported in San Simeon Creek and its tributaries but no life forms of this species were recorded during the site assessment. The entire Project site is located within CRLF Critical Habitat Unit SLO-2 (Exhibit 7, *Critical Habitat and Essential Fish Habitat*). Observed wetted habitat within San Simeon Creek during the habitat assessment was highly suitable for this species. This species has a high potential to occur and, in the absence of protocol surveys, should be assumed present in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.

Coast Range Newt

The coast range newt is designated by the CDFW as a California species of special concern. It is typically found in rivers, streams, lakes, and ponds, particularly those with rocky substrates. It is never far from water. In most areas this species is terrestrial during most of the year, but in



6/12/2014 JN M:\Mdata\141290\MXD\07 Critical Habitat.mxd

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
HABITAT ASSESSMENT

Critical Habitat/Essential Fish Habitat

RBF CONSULTING
A Baker Company

0 0.125 0.25 Miles

Source: USFWS Critical Habitat, NOAA Fisheries, CDM Smith, ESRI World Topographic Map

Exhibit 7

anticipation of its breeding season (typically December to May) these individuals will migrate back to water and undergo a physiological change into an aquatic form. In areas of permanent water, some individuals may stay in the aquatic phase year-round.

There is suitable habitat for this species in San Simeon Creek, particularly in the upper portions and areas where water may be slow-moving or have distinct and protected pools. This species was not observed during the habitat assessment, but has a moderate potential to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.

Two-striped Garter Snake

The two-striped garter snake is designated by the CDFW as a California species of special concern. It is primarily an aquatic species and is typically found in or near permanent or semi-permanent water including creeks, pools, stockponds, and other areas. Surrounding vegetation is typically made up of chaparral, forest, woodland, and grassland, and may vary according to the season. This species is primarily active between spring and fall, and in many cases will retreat into a burrow for the winter. Breeding occurs in the spring after the snakes emerge into the active season again.

There is suitable habitat for this species in San Simeon Creek. While it is more likely to be found in the downstream sections where there is more water, it could occur throughout the creek. This species was not observed during the habitat assessment, but has a moderate potential to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek.

5.7.2.2 Avian Species

Based on the results of the habitat assessment, it was determined that the habitat in and around the Project site has a moderate to high potential to provide suitable habitat for two sensitive avian species listed in the CNDDB as having the potential to occur on or within the general vicinity of the Project site.

Ferruginous Hawk

The ferruginous hawk is on the CDFW watch list of sensitive species. This species frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. It nests in foothills or prairies; on low cliffs, buttes, cut banks, shrubs, trees, or in other elevated structures, natural or human-made. This species requires large, open tracts of grasslands, sparse shrub, or desert habitats. Ferruginous hawk could roost or forage within the general Project vicinity, though it is only present in this area during the fall and winter. This species has a moderate potential to occur.

Prairie Falcon

The prairie falcon is on the CDFW watch list of sensitive species. This species is relatively uncommon and is most often found in dry, open habitats including deserts, shrublands, agricultural areas, and especially grasslands. While it will forage in these areas, it nests on cliff ledges. Along the immediate South/Central Coast such as where the proposed Project is located, this species is only present as a wintering bird, but just inland it is a year-round resident.

This species could forage in the Project vicinity, especially in adjacent agricultural and open fields. It may also perch and roost on transmission structures and tall trees in the area. This species has a moderate potential to occur.

5.7.2.3 Mammalian Species

Based on the results of the habitat assessment, it was determined that the habitat on the Project site has a moderate to high potential to provide suitable habitat for two sensitive mammal species listed in the CNDDB as having the potential to occur on or within the general vicinity of the Project site.

Fringed myotis

Fringed myotis occurs in a wide variety of habitats but is most often found in pinyon-juniper, valley foothill hardwood, and hardwood-coniferous habitats, generally between 4,265 and 7,218 feet in elevation. However, it can also be found down to sea level, and in 2000 multiple individuals of this species were trapped close to shore, including one only 0.25 mile from the San Simeon Creek Lagoon. This species roosts in caves, mines, buildings, and crevices, and may roost in separate areas during the day from at night. Maternity colonies are located in the same types of roosting habitat between late April and September and may contain up to 200 individuals. This species typically hibernates between October and March, and maternity colonies may hibernate together as well.

There is suitable foraging habitat within the Project site and the surrounding vicinity. It is unknown if suitable roosting habitat is present, but none was observed during the habitat assessment. This species is nocturnal and was not observed during the habitat assessment, but is expected to have a moderate potential to occur.

Yuma myotis

Yuma myotis occurs in a wide variety of habitats but is most often found in open forests and woodlands near water for foraging, generally at elevations between sea level and 10,827 feet. In 2000 three Yuma myotis were trapped close to shore only 0.25 mile from the San Simeon Creek Lagoon. This species roosts in caves, mines, buildings, and crevices, and may also use

abandoned swallow nests and bridges as roosts. It may roost in separate areas during the day from at night, with night roosts generally being more open. Maternity colonies are located in the same types of roosting habitat and may contain thousands of individuals, though if temperatures exceed 40°C the individuals tend to roost elsewhere where it will be cooler and situate themselves farther apart from each other. This species probably hibernates, though not much information is available on its habits.

There is suitable foraging habitat within the Project site and the surrounding vicinity. It is unknown if suitable roosting habitat is present, but none was observed during the habitat assessment. This species is nocturnal and was not observed during the habitat assessment, but is expected to have a moderate potential to occur.

5.7.2.4 Fish Species

Tidewater Goby

The tidewater goby is federally listed as endangered and is designated by the CDFW as a California species of special concern. It occurs primarily in coastal lagoons and estuaries and has only been captured in marine environments in very few instances. In their habitat, tidewater gobies are generally present in the upper estuary where the freshwater and saltwater mix, and will range upstream into pure freshwater and downstream into areas of majority salt water (up to about 75%). Though they can be present in water where salinity ranges up to 28 parts per thousand, they are predominantly found in areas where salinity is less than 12 parts per thousand, i.e. on the upper edges of tidal bays and in coastal lagoons. Tidewater gobies reproduce throughout the year but peak reproduction occurs in spring and late summer.

There is occupied habitat for this species downstream of the Project site in San Simeon Creek Lagoon. This species was observed in the San Simeon Creek Lagoon, which is also tidewater goby designated Critical Habitat Unit SLO-5 (Refer to Exhibit 7), during the habitat assessment.

Steelhead (South/Central California Coast DPS)

Steelhead is federally listed as threatened and is designated by the CDFW as a California species of special concern. The population in the Project vicinity ranges from Santa Cruz County south to, but not including, the Santa Maria River. Typical freshwater steelhead habitat consists of gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Dissolved oxygen levels should be at least seven parts per million, and streams should have deep, low-velocity pools for wintering. Juveniles will typically spend between one and three years maturing in a freshwater or estuarine environment before migrating out to sea. After a typical span of one to four years of maturation in the ocean, the fish will return to their natal waters to spawn again.

There is suitable habitat for this species in San Simeon Creek. This species has been historically recorded over many years to occur within the creek, both in the creek and downstream in the lagoon. San Simeon Creek and Van Gordon Creek are part of the steelhead designated Critical Habitat unit that is located within the Estero Bay Hydrologic Unit (Refer to Exhibit 7). While not observed during the habitat assessment, this species is expected to have a high potential for occurrence and should be assumed to be present in these two water bodies in the absence of any formal surveys.

5.7.3 Sensitive Habitats

The CNDDB lists two sensitive habitats, Monterey Pine Forest and Valley Oak Woodland, as having the potential to occur within the Cambria, Pebblestone Shut-in, Pico Creek, San Simeon USGS quadrangles. An existing water well in the center of the percolation ponds is in a small stand of Monterey pines. However, based on the small size of this stand it is unlikely to be considered an actual “forest” community, but rather an isolated stand. There are scattered Monterey pines present on the hillsides south of San Simeon Creek.

5.7.4 Critical Habitat

As discussed in Section 2, Critical Habitat is designated under the authority of the ESA. However, consultation for impacts to Critical Habitat is only required when a project is issued federal permits (e.g. a U.S. Army Corps of Engineers Section 404 Clean Water Act permit). If a project does not have a federal nexus, Critical Habitat consultations are not required.

Designated Critical Habitat for four species is located in and around the Project site (Refer to Exhibit 7). CRLF Critical Habitat Unit SLO-2 encompasses the entire Project site. This area includes aquatic habitat that is suitable for both breeding (PCE 1) and non-breeding (PCE 2) habitat, as well as upland habitat that could be used for foraging (PCE 3) and dispersal (PCE 4). This area could be indirectly affected by Project implementation and a reduction in the groundwater that is currently feeding San Simeon Creek.

Tidewater goby Critical Habitat Unit SLO-5 includes San Simeon Creek Lagoon and the downstream reach of an eastern tributary immediately north of SR-1. This area includes a persistent, shallow lagoon containing soft substrate suitable for the construction of burrows for reproduction (PCE 1a) and with submerged and emergent aquatic vegetation that provides protection from predators and high flow events (PCE 1b). This area could be indirectly affected by Project implementation and a reduction in the amount of freshwater entering San Simeon Creek Lagoon.

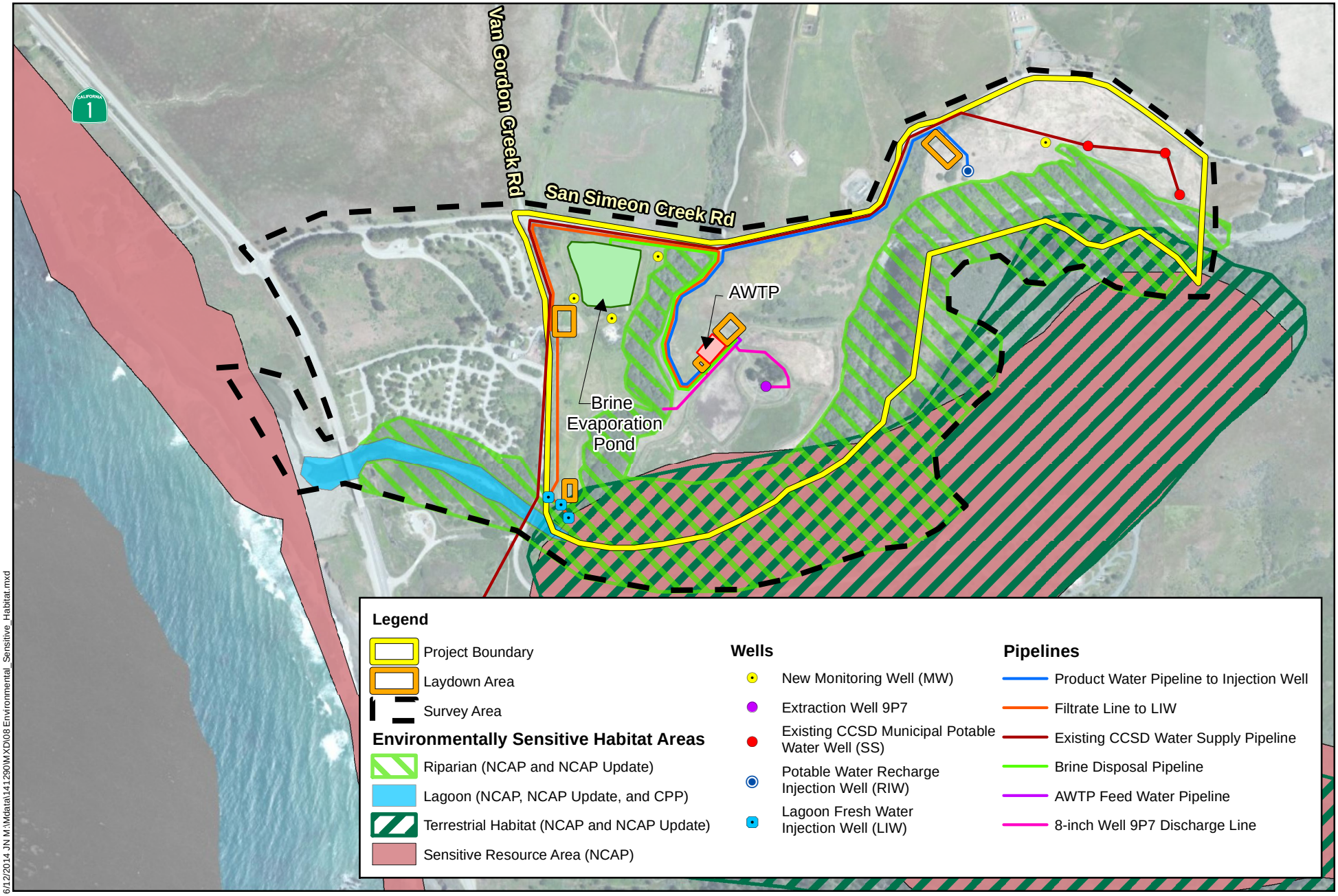
South-central California Coast steelhead Critical Habitat is located within the Estero Bay Hydrologic Unit and includes an approximately 5.5-mile stretch of San Simeon Creek beginning

downstream of the North Fork/South Fork San Simeon Creek convergence and ending at the ocean. This area could be indirectly affected by Project implementation and a reduction in both the groundwater that is currently feeding San Simeon Creek and the amount of freshwater entering San Simeon Creek Lagoon.

Snowy plover Critical Habitat Unit CA-26 is located along San Simeon State Beach and encompasses most of San Simeon Creek Lagoon downstream (west) of SR-1. This area includes sandy beach above and below the high-tide line (PCE 1) with occasional surf-cast wrack supporting small invertebrates and generally barren to sparsely vegetated terrain (PCEs 2 and 3). It is an important wintering area where up to 143 snowy plovers have been recorded in a single season (at the time of the Critical Habitat designation in 2012). This area includes a portion of the San Simeon Creek Lagoon, which is likely to be affected by Project implementation; however, the occupied habitat of this species is unlikely to be adversely affected as it is a terrestrial bird.

5.7.5 Essential Fish Habitat

As discussed in Section 2, EFH is designated under the MSA. The proposed Project is located within designated EFH for Coho salmon (Exhibit 7, *Critical Habitat/Essential Fish Habitat*). EFH for various species of groundfish is designated near the proposed Project but ends at the shoreline. Under the provisions of MSA Section 305(b), if the Project has a federal nexus and will be issued a federal permit, the federal agency will be required to consult with NMFS for impacts to EFH. If no federal agency is involved, this consultation will not be necessary.



6/12/2014 JN M:\Mdata\141290\MXD\08 Environmental_Sensitive_Habitat.mxd

RBF CONSULTING A Baker Company

0 400 800 1,600 Feet

Source: CDM Smith, ESRI World Imagery Basemap

CAMBRIA EMERGENCY WATER SUPPLY PROJECT
HABITAT ASSESSMENT

Environmentally Sensitive Areas

Exhibit 8

SECTION 6: SEE SECTIONS 8.7.1 AND 8.7.2

SECTION 7: SEE SECTIONS 8.7.1 AND 8.7.2

Section 8 Discussion of Impacts and Mitigation

The discussion below provides a summary of survey results; avoidance and minimization efforts; direct, indirect, and cumulative Project impacts; and compensatory mitigation measures for each biological resource area required to be analyzed according to the California Environmental Quality Act (CEQA), based on Appendix G (Environmental Checklist Form) of the CEQA Guidelines.

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

Species determined to have the potential to occur within the general vicinity are presented in Appendix A, Sensitive Habitats and Potentially Occurring Sensitive Plant and Wildlife Species.

8.1 LISTED PLANT SPECIES

No federally or State listed plant species occur or have the potential to occur on the Project site or within the riparian habitat associated with San Simeon and Van Gordon Creeks.

8.2 SPECIAL-STATUS PLANT SPECIES

Survey Results

Three special-status plant species were identified during a CNDDB and CNPS search as potentially occurring in the area: compact cobwebby thistle, Jones' layia, and Monterey pine. Compact cobwebby thistle was identified during surveys in 1991 approximately 0.5 mile northwest of the Project site, and Monterey pine was observed onsite during RBF's 2014 habitat assessment. Jones' layia has not been recorded onsite but has a low to moderate potential to occur based on availability of suitable habitat.

Avoidance and Minimization Measures

Compact cobwebby thistle and Jones' layia, while not identified during RBF's habitat assessment, can be found in grasslands and scrub habitats on the eastern side of the Project site. This area will have minimal development, with only the installation of the RIW occurring . A Monterey pine stand is present in the center of the percolation ponds, near Well 9P7.. The pipeline from Well 9P7 to the AWTP would be sited to avoid this stand of pine trees.

Direct and Indirect Project Impacts

Direct or indirect impacts could occur to special-status plant species as a result of Project implementation. Excavation and fill for wells and pipelines could result in the loss of sensitive plant species. Construction activity could result **in th**e spread of nonnative weed seeds via clothing, tires, or vehicle undercarriages. In addition, vehicle travel and pedestrian foot traffic within the project boundaries could result in the trampling of plant species.

Mitigation

The following mitigation measures are proposed to reduce Project impacts to less than significant with mitigation incorporated:

BIO-1: All work areas shall be visibly flagged or staked prior to construction. Construction activities shall be limited to these approved work areas except with prior authorization from regulatory agencies.

BIO-2: A Worker Environmental Awareness Program (WEAP) shall be implemented to educate all construction personnel of the area's environmental concerns and conditions and relevant environmental protection measures. The WEAP will include environmental concerns and appropriate work practices, including spill prevention, emergency response measures, protection of sensitive resources, and proper implementation of BMPs, to all construction and maintenance personnel. All new workers that arrive after construction has started shall be trained under the WEAP within two days' time.

BIO-3: A qualified biologist or botanist shall conduct a preconstruction clearance survey for special-status plant species within the Project site. If present, any special-status plants shall be clearly flagged for avoidance with a suitable buffer zone during construction. If avoidance is not possible, the Project applicant will discuss potential relocation strategies with applicable regulatory agencies.

BIO-4: Prior to construction, all heavy equipment that will be left onsite in laydown yards shall be washed offsite and cleaned of all potential non-native weed seeds. Worker trucks shall be washed daily if they will be driven offroad or shall otherwise be left parked in laydown yards or on existing roads during construction.

BIO-5: All excavated material shall be removed from the Project site and disposed of properly or reused elsewhere. If left onsite, the material shall be moved into an area where it will not wash or erode into any riparian areas and shall be suitably covered or watered to reduce the potential for dust during high winds or rain events.

8.3 LISTED WILDLIFE SPECIES

8.3.1 Tidewater Goby

Survey Results

Tidewater goby was observed in San Simeon Creek Lagoon during RBF's habitat assessment. It is historically known to be present and to spawn within San Simeon Creek Lagoon; San Simeon Creek Lagoon has also been designated as tidewater goby Critical Habitat Unit SLO-5.

Avoidance and Minimization Efforts

This species occurs in San Simeon Creek Lagoon but is unlikely to occur within either San Simeon Creek or Van Gordon Creek, where riffles and even minor turbulence are deterrents. The lagoon will not be directly affected by construction and is located mostly offsite. Only a small section of the lagoon, approximately the uppermost 230 feet, is located within the Project site. BMPs would be designed to avoid or reduce any sedimentation within the water bodies.

Direct and Indirect Project Impacts

While direct impacts to special-status wildlife species are expected to be negligible during construction, indirect operational impacts may occur as the result of pumping 400 gpm of groundwater upstream of San Simeon lagoon and only returning 100 gpm to the San Simeon Creek aquifer adjacent to the lagoon. If the Project, as proposed, results in a water budget deficit, it could result in quicker reduction in stream levels during dry periods. While a perennial section of San Simeon Creek is known to be present upstream of the confluence with Steiner Creek, the lower reaches are intermittent and are generally only inundated from late fall to late spring or early summer. Early reduction in water levels could result in a premature sandbar closure at San Simeon Creek Lagoon. This could reduce the amount of habitat for tidewater goby found in the lagoon habitat. Unexpected habitat loss may result in decreased food and shelter, resulting in increased competition for resources not just between tidewater gobies, but between gobies and other fish species that may be present in the lagoon.

Mitigation

The following mitigation measures are proposed to reduce Project impacts to less than significant with mitigation incorporated:

BIO-1: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-2: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-6: The Project applicant shall develop and implement an adaptive management program (AMP) for post construction operations. This plan shall be incorporated

indefinitely until the Project facilities are no longer in use or until deemed no longer necessary by applicable regulatory agencies. The AMP is intended to monitor and protect the lagoon and riparian habitats adjacent to the Project site and, by extension, protect the species that inhabit it. The primary goal of the AMP would be to monitor the response of the lagoon and riparian habitats to the proposed project and, based on any noted adverse changes in these habitats, to adjust operations so that the amount of treated water that is injected or discharged back into the system,is either increased or decreased to restore affected habitat features. This may require a combination of any of the following:

- Monthly stream surveys during the period that the Project is actively drawing groundwater (currently expected to be May through October). The surveys would document the upstream extent of inundation in each water body, as well as water depth at predetermined locations to measure changes in water levels;
- Surveys for tidewater goby, steelhead, CRLF, western pond turtle, and/or two-striped garter snake to measure population levels over time; and
- Monitoring of riparian vegetation in the water bodies and in their upland extents.

Based on the results of the biological monitoring, the AMP would provide measures that to increase or decrease the amount of water injected or discharged back into San Simeon Creek and Lagoon. It is expected that the minimum amount of water returned at any time would be 100 gpm, but that when necessary based on biological monitoring, the amount of water would increase to 150 gpm of continual water.

8.3.2 Steelhead (South/Central California Coast DPS)

Survey Results

Steelhead trout were not observed during RBF's habitat assessment. This species is known to occur and to spawn in San Simeon Creek, and San Simeon Creek Lagoon is used as habitat for smolts preparing to enter the Pacific Ocean. San Simeon Creek and Van Gordon Creek are part of steelhead designated Critical Habitat in the Estero Bay Hydrologic Unit.

Avoidance and Minimization Efforts

This species occurs in both San Simeon Creek, San Simeon Creek Lagoon, and, if inundated, Van Gordon Creek. These areas would not be directly affected by the proposed Project but a portion of each is located within the Project site. BMPs would be used as necessary to avoid or reduce any sedimentation within the water bodies.

Direct and Indirect Project Impacts

As described in Section 8.1.3.1, direct impacts to aquatic species are expected to be negligible during construction, but indirect operational impacts could occur, particularly if reductions in the water table result in earlier-than-average seasonal drops in creek surface water. Adult steelhead typically migrate from the ocean into coastal streams between December and May, according to weather patterns and stream flow. On the other hand, smolts typically migrate downstream to lagoons and eventually the ocean between March and June, although low stream flows can block smolts from reaching their destinations. Reduced water in the lower reaches of San Simeon Creek could lead to earlier-than-usual sandbar closures in San Simeon Creek Lagoon, affecting the ability of smolts to migrate to the ocean and prematurely altering the lagoon/estuary temporal interchange. This may result in smolts becoming stranded in San Simeon Creek Lagoon and spending an extra year in the lagoon instead of at sea. Stranded smolts would suffer from increased competition in the lagoon habitat, particularly as upstream areas within San Simeon Creek dry up and leave only an isolated portion of the creek and lagoon.

Mitigation

The following mitigation measures are proposed to reduce Project impacts to less than significant with mitigation incorporated:

BIO-1: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-2: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-6: Refer to Section 8.3.1 for the full text of this mitigation measure.

BIO-7: The Project applicant shall delay the annual period of groundwater pumping to the greatest extent possible, preferably after June, in order to maximize the amount of time for steelhead to migrate up and down San Simeon Creek.

8.3.3 California Red-legged Frog

Survey Results

No CRLF life stages were detected during RBF's habitat assessment. This species is historically known to occur in San Simeon Creek and in addition the entire Project site is included in CRLF designated Critical Habitat Unit SLO-2.

Avoidance and Minimization Efforts

This species occurs in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek. Some upland habitat present in the percolation ponds may be used by this species. All four

areas are located within the Project site and would be avoided during construction. BMPs would be used as necessary to avoid or reduce any sedimentation within the water bodies.

Direct and Indirect Project Impacts

As described in Section 8.1.3.1, direct impacts to aquatic species are expected to be negligible during construction, but indirect operational impacts could occur, particularly if reductions in the water table result in earlier-than-average seasonal drops in creek surface water. In San Simeon Creek, because CRLF can breed as late as late April, early drops in water levels could possibly affect the ability of CRLF eggs to hatch. CRLF typically attaches its eggs to floating vegetation or vegetation rooted in the creek substrate; drops in the water level could cause egg masses to desiccate. Tadpoles in turn could be lost if the creek dries too quickly, or increased competition for food from fish (such as stranded smolts) could result in tadpoles being subjected to increased predation.

Mitigation

The following mitigation measures are proposed to reduce Project impacts to less than significant with mitigation incorporated:

BIO-1: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-2: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-6: Refer to Section 8.3.1 for the full text of this mitigation measure.

BIO-8: Preconstruction diurnal and nocturnal surveys shall be conducted for CRLF in the percolation ponds and surrounding area within 48 hours of the start of construction. Any CRLF detected during surveys shall be relocated to areas outside of the construction zone, i.e. to San Simeon Creek, San Simeon Creek Lagoon, or Van Gordon Creek. Exclusion fencing shall be placed around work areas to avoid or minimize the risk of CRLF migrating into work areas during upland movements. The biologist conducting the surveys and performing any relocations shall hold a valid 10(a)(1)(A) recovery permit and Scientific Collecting Permit allowing take of CRLF.

BIO-9: All Project-related trash, food or otherwise, shall be disposed of after use in appropriate secured containers. These containers shall be emptied offsite regularly.

8.4 SPECIAL-STATUS WILDLIFE SPECIES

Survey results

Only one non-listed special-status wildlife species was observed during RBF's habitat assessment: yellow warbler (*Setophaga petechia*). In addition, based on a CNDDB search, eight additional species were determined to have a moderate or higher potential to occur within the Project site: ferruginous hawk, western pond turtle, prairie falcon, fringed myotis, Yuma myotis, foothill yellow-legged frog, Coast Range newt, and two-striped garter snake. Western pond turtle and two-striped garter snake are historically known to occur in San Simeon Creek.

Avoidance and Minimization Measures

Of the nine non-listed special-status wildlife species that could occur on the Project site, all would most likely occur in areas that are likely to be directly avoided by the Project. Yellow warbler would forage and nest in the summer in riparian trees; which are expected to be avoided except for possible light trimming. Ferruginous hawk and prairie falcon would be most likely to occur in the winter around grassy fields such as that on the east side of the Project site or in surrounding agricultural fields; grassy fields will be minimally affected and by constructing the Project in the summer, the applicant will avoid direct construction effects to these two species. Fringed myotis and Yuma myotis are most likely to roost in trees during the day and forage over the water or over fields at night; by constructing during the day, foraging would be unlikely to be affected, and by mostly avoiding arboreal habitat, roosting habitat would be mostly unaffected. Finally, western pond turtle, foothill yellow-legged frog, Coast Range newt, and two-striped garter snake would be most likely to occur in San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek, or in the generally immediate upland areas. These areas would be avoided by Project construction. If the Project is constructed in the summer, these species would be expected to be mostly tied to the water as well.

Direct and Indirect Impacts

Direct impacts to any of these species are expected to be minimal. Construction near to trees may result in disturbance to nesting birds or roosting bats, potentially resulting in increased stress or nest failure. In extreme situations, excessive disturbance may cause individual animals to leave the area, temporarily or permanently; For aquatic species, changes in seasonal water levels can result in habitat degradation and premature life events (e.g., upland breeding, overwintering, migrations).

Mitigation

The following mitigation measures are proposed to reduce Project impacts to less than significant with mitigation incorporated:

BIO-1: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-2: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-10: No more than one week prior to construction, a qualified biologist shall conduct a preconstruction nesting bird clearance survey in all work areas and all areas within 500 feet of the general construction zone. Active nests shall be given an avoidance buffer, typically 300 feet for non-listed, non-raptor species, and 500 feet for listed or raptor species. This buffer shall remain in place until the young fledge or the nest otherwise becomes inactive, and may be reduced with approval from CDFW and/or USFWS.

BIO-11: If deemed necessary by the CDFW, a preconstruction roosting bat survey shall be conducted within one week prior to construction. Any bat roosts found in the Project vicinity shall be protected with coordination from CDFW.

BIO-12: All construction shall occur between dawn and dusk.

BIO-13: In areas adjacent to riparian habitat, construction noise shall be minimized to the amount necessary to avoid or reduce the risk of adverse impacts to wildlife.

BIO-14: In areas within 100 feet of riparian habitat, BMPs shall be implemented. These should include, but are not limited to, sedimentation control, erosion control, spill prevention and cleanup, and hazardous materials.

CEQA Threshold: *Would the proposed Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?*

CEQA Threshold: *Would the proposed Project 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?*

8.5 RIPARIAN HABITAT AND WETLANDS

Survey Results

The Project site contains two intermittent creeks (San Simeon Creek and Van Gordon Creek) and one wetland (San Simeon Creek Lagoon). San Simeon Creek runs along the southern boundary of the Project site, whereas Van Gordon Creek is situated along the site's western boundary. San Simeon Creek Lagoon begins in San Simeon Creek approximately 230 feet upstream of Van Gordon Creek Road and extends west to San Simeon State Beach, where it seasonally switches between a lagoon and an estuary. Vegetation within these water bodies is

dominated by a Central Coast Arroyo Willow Riparian Forest community as described in Section 5.2.1. A jurisdictional delineation has not yet been conducted to determine specific acreages of potentially jurisdictional areas.

Avoidance and Minimization Efforts

No construction is currently anticipated to occur within the streambeds, lagoon, or within the terrestrial extent of the riparian vegetation. Nearby construction would be shielded from riparian vegetation through the implementation of BMPs.

Direct and Indirect Project Impacts

Few if any direct impacts to riparian habitat are expected to occur. Minor tree trimming may be necessary for areas where the Project is sited close to vegetation. However, potentially significant indirect impacts could occur as a result of Project implementation and groundwater loss. These are discussed partially in Sections 8.3 – 8.6 in regards to effects on wildlife and effects on movement corridors. In addition to these potential effects, implementation and operation of the Project may result in degradation of riparian habitat. Drawdown of the water table could have adverse effects on riparian vegetation, eventually resulting in loss or conversion of vegetation. If this is a seasonal drawdown, it may only result in seasonal impacts, e.g. temporary browning or loss of vitality of vegetation. However, if Project operation results in permanent, gradual, and cumulatively reduced groundwater levels, riparian vegetation may suffer permanent effects.

If the depth of the water table has any direct correlation to the amount and longevity of surface water, reductions in surface water may lead to reduced growth rates and plant mortality, eventually leading to reduced plant cover and reduced plant species diversity as a result of prolonged low flows (Nilsson and Svedmark 2002). This is because during the dry season, the increased ambient temperatures cause increased transpiration in plants, resulting in increased water loss from leaves. Water replenishment is less crucial during the wet season, as temperatures are cooler, transpiration rates are lower, and rainfall adds to the water that is already present in streambeds. In the dry season, however, plants can become stressed more easily during low water conditions. While phreatophytic—vegetation that draws water from both above and below the surface—and more drought-tolerant vegetation like Fremont's cottonwood (*Populus fremontii*), willows (*Salix* sp.), and mulefat (*Baccharis salicifolia*) may persist longer under dryer conditions, shallow-rooted and streamside vegetation would be expected to be more susceptible to general reductions in water levels (Stromberg et al. 2007). Additionally, nutrient-cycling organic litter decomposition that is normally aided by downstream water movement may be reduced by low surface flows (Nilsson and Svedmark 2002).

Mitigation

The following mitigation measures are proposed to reduce Project impacts to less than significant with mitigation incorporated:

BIO-1: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-6: Refer to Section 8.3.1 for the full text of this mitigation measure.

BIO-14: Refer to Section 8.4 for the full text of this mitigation measure.

BIO-15: The Project Applicant shall consult with the Corps, CDFW, and Regional Board regarding potential impacts and required mitigation once the final Project design is available. If impacts are anticipated to occur to instream and riparian habitats, wetland permits may be required from these agencies.

CEQA Threshold: *Would the proposed 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?*

8.6 WILDLIFE CORRIDORS

Survey Results

Although not observed during RBF's habitat assessment, steelhead trout are known to migrate up and down San Simeon Creek. Adult steelhead migrate from the ocean upstream into San Simeon Creek between December and May, and smolts migrate downstream toward the ocean between March and June. Several mule deer (*Odocoileus hemionus*) were observed in the percolation ponds and likely utilize the riparian corridor to make movements up and down the stream between foraging, fawning, and shelter areas, as well as other critical habitat types. Other large mammals may utilize the riparian corridors to move in cover, particularly between habitat near the coast and habitat in the Santa Lucia Mountains. Finally, birds likely use the riparian corridor for movements.

Avoidance and Minimization Efforts

San Simeon Creek and the general riparian zone will be mostly avoided by construction, with any tree trimming and direct disturbance kept to the minimal amount necessary.

Direct and Indirect Project Impacts

Migrating fish species may be deterred from moving through the areas due to active construction, but movements of terrestrial and avian species are otherwise not expected to be significantly affected. The movement corridors are not expected to be directly affected.

However, San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek may experience indirect Project-related effects as a result of the drawdown in the water table. As discussed in Sections 8.3 and 8.4, if the depth of the water table has a strong correlation with the amount of surface water available in these water bodies, it may result in early seasonal cuts in aboveground water supplies. This would in turn degrade the quality of the movement corridor and potentially render it unusable by animals that are strictly confined to aquatic movement (e.g. fish).

Mitigation

The following mitigation measures are proposed to reduce Project impacts to less than significant with mitigation incorporated:

BIO-1: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-2: Refer to Section 8.2 for the full text of this mitigation measure.

BIO-7: Refer to Section 8.3.2 for the full text of this mitigation measure.

BIO-14: Refer to Section 8.4 for the full text of this mitigation measure.

CEQA Threshold: *Would the proposed Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

8.7 LOCAL POLICIES AND ORDINANCES

As detailed in Section 6, the proposed Project could conflict with the San Luis Obispo County Coastal Zone Land Use Ordinance (SLO County 1986) and therefore with the Local Coastal Program. The LCP was implemented and approved to ensure the protection of San Luis Obispo County's Coastal Zone in compliance with the Coastal Act of 1976. The CZLUO contains separate provisions intended to protect sensitive resource areas, environmentally sensitive habitat areas, wetlands, streams and riparian vegetation, terrestrial habitat, and marine habitat. The Project is assumed to already be in compliance with several of these provisions including SRAs, wetlands, terrestrial habitat, and marine habitat. However, the Project would potentially conflict with provisions intended to protect ESHAs and streams and riparian vegetation.

In addition, as described in Section 7, the proposed Project could conflict with the California Coastal Act of 1976, which is intended to help secure the "orderly, long-range conservation, use, and management of the natural, scenic, cultural, recreational, and manmade resources of the coastal zone" (CA PRC 30000-30900). To receive approval from the Coastal Commission,

the Project would be required to demonstrate compliance with Sections 30231 and Sections 30240 of the Coastal Act.

Section 30231 of the Coastal Act states that:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30240 of the Coastal Act states that:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

8.7.1 San Luis Obispo County Coastal Zone Land Use Ordinance

Steelhead Stream Protection: Net Loss Stream Diversions Prohibited (23.07.170e(3))

Subsection 23.07.170e(3) of the CZLUO states that diversions of surface and subsurface water will not be allowed if they will result in a significant adverse impact on steelhead runs. This subsection applies to diversion dams, water supply wells that tap the subflow, and similar water supply facilities that could significantly harm steelhead runs. Exceptions may be considered only where impacts are unavoidable, are fully mitigated, and result in no significant disruption.

As of this writing, it is unknown if the proposed Project will have significant adverse effects on steelhead runs. The Project is proposing to extract groundwater from the basin below San Simeon Creek and the surrounding area for treatment. The treated water is expected to be equivalent to 400 gpm of flow, of which 300 gpm would be injected back into the ground on the eastern side of the Project site at the RIW for subsequent extraction for the Community of Cambria's water supply. Under the two proposed alternatives, one hundred (100) gpm of water would either be injected into the ground on the western side of the Project site at three LIWs, just northwest of the confluence of Van Gordon Creek and San Simeon Creek, or would be

discharged directly into Van Gordon Creek west of Well 9P7. Although hydrologic studies suggest that effects will be limited, there is uncertainty in the possible effect these actions may have on the supply of surface water in San Simeon Creek.. Monitoring of groundwater and surface water, as well as additional hydrologic modeling, is needed to track changes in groundwater, surface waters and instream and riparian habitats in order to remove remaining uncertainty and to fully understand the Project's potential impacts. An adaptive management approach will be implemented that would provide the needed data and provide an oversight of uncertain effects of removing 300 gpm from the groundwater adjacent to San Simeon Creek and will allow up to 150 gpm of water to be returned at either the LIWs or the discharge pipe, depending on stream conditions, to avoid potential adverse impacts to aquatic species.

While enough water may remain in the system with the proposed Project as designed to continue supplying suitable habitat for steelhead runs, it is possible that over time, especially during dry periods, the surface water in San Simeon Creek may dry up quicker than it currently does, possibly resulting in a significant adverse effect to steelhead runs. Adult steelhead typically migrate from the ocean into coastal streams between December and May, according to weather patterns and stream flow. On the other hand, smolts (young steelhead that have prepared to migrate to the ocean) typically migrate downstream to lagoons and eventually the ocean between March and June, although low stream flows can block smolts from reaching their destinations. Reduced water in the lower reaches of San Simeon Creek could lead to earlier-than-usual sandbar closures in San Simeon Creek Lagoon, affecting the ability of smolts to migrate to the ocean and prematurely altering the lagoon/estuary temporal interchange. Without additional information, the proposed Project could violate this subsection. Adaptive management measures, including biological monitoring, hydrologic monitoring and modeling will be implemented to demonstrate that the proposed Project would be in compliance with this provision and an adaptive management plan is recommended to help avoid or reduce impacts to aquatic vertebrates.

Interference with Fish Migration (23.07.170e(4)iv)

Subsection 23.07.170e(4)iv prohibits any development activity that would raise overall stream temperatures to unfavorable levels, or that would interfere with normal fish migration and movement within the stream. As stated above, the proposed Project may result in decreased water levels in San Simeon Creek and, when applicable, Van Gordon Creek. If Project operations do result in decreased water levels regularly, seasonally, or during particularly dry periods, the proposed Project could violate both measures of this subsection by resulting in increased water temperatures due to decreased water levels as well as restrictions on fish migration and movement. Without additional studies, the proposed Project could violate this subsection. Additional hydrologic information that will be gathered as part of the adaptive management program is expected to demonstrate that the proposed Project would be in compliance with this provision.

Grading Adjacent to Environmentally Sensitive Habitats (23.07.170e(5))

Subsection 23.07.170e(5) states that grading adjacent to ESHAs shall conform to the provisions of Section 23.05.034c, Grading Standards, which states that:

> *Grading shall not occur within 100 feet of any Environmentally Sensitive Habitat except:*
> *c) Where a setback adjustment has been granted as set forth in Sections 23.07.172d(2) (Wetlands) or 23.07.174d(2) (Streams and Riparian Vegetation) of this title; or*
> *d) Within an urban service line when grading is necessary to locate a principally permitted use and where the approval body can find that the application of the 100-foot setback would render the site physically unsuitable for a principally permitted use. In such cases, the 100-foot setback shall only be reduced to a point where the principally-permitted use, as modified as much as practical from a design standpoint, can be located on the site. In no case shall grading occur closer than 50 feet from the Environmentally Sensitive Habitat or as allowed by planning area standard, whichever is greater.*

It is unknown at this time if a road would be graded along the pipeline right-of-way west of Van Gordon Creek. Based on current Project plans, there may be multiple proposed laydown yards that are within 100 feet of Van Gordon Creek and San Simeon Creek. If no grading is required within 100 feet of Van Gordon Creek or San Simeon Creek, the proposed Project will be in compliance with this subsection. If grading is required, compliance with this subsection will be dependent on receiving authorization to grade within the 100-foot riparian buffer, as discussed below. Measures will be put in place to ensure that the proposed Project will be in compliance with this subsection.

Riparian Setbacks (23.07.174d)

Subsection 23.07.174(d) discusses a required setback from riparian vegetation. In rural areas, such as where the proposed Project is located, this setback is required to be a minimum of 100 feet from the upland edge of riparian vegetation. However, this subsection also allows certain permitted uses within this setback, including pipelines, and for the minimum setback to be adjusted, given that the following findings can first be made:

- Alternative locations and routes are infeasible or more environmentally damaging; and
- Adverse environmental effects are mitigated to the maximum extent feasible; and
- The adjustment is necessary to allow a principal permitted use of the property and redesign of the proposed development would not allow the use with the standard setbacks; and
- The adjustment is the minimum that would allow for the establishment of a principal permitted use.

One alternative of the proposed Project contains multiple laydown yards, sections of pipeline, multiple LIWs, and a monitoring well that, as designed, are within 100 feet of the upland extents of Van Gordon Creek and San Simeon Creek. Under a second alternative, the LIWs and associated pipeline would be removed and replaced with the Well 9P7 discharge pipeline that is pre-existing and is located within the riparian corridor, discharging directly into Van Gordon Creek. Because it cannot yet be shown that alternative locations and routes that are outside of the riparian setback are not feasible, the proposed Project is currently expected to violate this subsection. The Project proponent will need to demonstrate alternative pipeline routes will be more environmentally damaging or will be infeasible for the purposes of the Project in order to demonstrate compliance with this provision.

8.7.2 California Coastal Act of 1976

San Simeon Creek

San Simeon Creek traverses the southern portion of the Project site. San Simeon Creek is designated as an ESHA by the NCAP, the 1998 NCAP Update, and by the definition in Section 30107.5 of the Coastal Act (Refer to Exhibit 8). Several protected species are known to occur and/or breed in this creek, including at the minimum steelhead, tidewater goby, California red-legged frog, western pond turtle, and two-striped garter snake. The proposed Project would not be sited within San Simeon Creek, but would be located near to it and in some areas within 100 feet of it. Development in the vicinity of this resource must demonstrate compliance with Sections 30231 and 30240 of the Coastal Act as noted above.

Section 30231

Under this section of the Coastal Act, the Project proponent must demonstrate that the proposed Project will retain the biological productivity and quality of coastal streams (i.e. San Simeon Creek) and, where possible, restore them to better conditions. The proposed Project is not located within the creek or within its upland terrestrial extent and is not expected to result in any direct impacts as a result of construction. However, the Project could result in indirect impacts to San Simeon Creek.

One of the methods suggested by Section 30231 for maintaining the biological integrity of water bodies is “preventing [the] depletion of ground water supplies and substantial interference with surface waterflow.” The purpose of the proposed Project is to extract groundwater from the San Simeon Creek aquifer through an existing well located in the center of a series of percolation ponds, to treat the extracted water, and to inject 75% of it (300 gpm) back into the ground approximately 0.33 mile northeast of the extraction point for subsequent re-extraction by municipal water supply wells, and to return the remaining 25% of the treated water (100 gpm) for recharge into the creeks and lagoon either a) via three LIWs located approximately 0.3 mile southwest of the extraction well and within 100 feet of the San Simeon Creek riparian vegetation, or b) via an existing discharge pipe that feeds directly onto the surface of Van

Gordon Creek. Without implementation of an adaptive management program including biological and hydrologic monitoring, it is unknown what effect the removal and subsequent reinjection of this water may have on the groundwater supply and surface water. At this time, it is unclear whether 100 gpm of water returned back into the creek and lagoon system would be sufficient to retain or improve upon the biological productivity and quality of San Simeon Creek. It is possible that a larger volume of water may be required to maintain high-quality stream habitat, in which case an adaptive management plan that allows for flexibility in groundwater return levels up to 150 gpm based on stream conditions is recommended. It is unknown if the proposed Project will be in compliance with Section 20231 for San Simeon Creek, however, the adaptive management program will be developed to ensure that the program will either be in compliance or adjusted to become compliant.

Section 30240

Because the proposed Project is not located within San Simeon Creek, Section 30240a will not apply. However, under 30240b, the Project proponent must demonstrate that the proposed Project will be sited and designed to prevent significant impacts to the creek and will be compatible with the continuance of the habitat. The Project is located within 100 feet of the upland extent of the riparian vegetation, and is currently designed to avoid direct impacts to the vegetation and the streambed. Construction may result in sedimentation, but it is assumed that standard mitigation (e.g. BMPs) would reduce or eliminate the potential for sedimentation to enter the streambed. Based on the locations of the proposed pipeline and injection wells in relation to San Simeon Creek, it is not expected that removal of any riparian vegetation would be necessary during construction of the Project. Light tree trimming may be necessary in the immediate construction area to help facilitate construction of the pipeline, but this would likely be mitigated through vegetation replacement or re-vegetation if considered a loss. The proposed lagoon injection wells where treated water would be injected back into the creek and the lagoon would result in additional ground impacts.

It is not expected that the proposed Project would have any direct significant impacts to the creek. As discussed above for Section 30231, it is possible that the Project may have indirect adverse impacts to the creek through depletion of groundwater. However, there is not enough hydrologic information yet to make the determination of whether implementation of the proposed Project would result in an average annual net surplus or net deficit of the aquifer's water budget. If the proposed Project could demonstrate that implementation would be likely to maintain an average net surplus, it could be argued that the proposed Project would be compatible with the continuance of this habitat. The proposed Project would not be located within the resource and would not result in the destruction or adverse modification of it. However, the Coastal Commission generally requires a habitat setback to prevent impacts that could degrade the resources; this setback, as with the CZLUO, is generally 100 feet. The LIW alternative does not comply with this, as it is located within 100 feet of the upland extent of this ESHA. Therefore, if the proposed Project utilized the LIW alternative, it would violate Section 30240b for San

Simeon Creek. If the Project utilized the discharge pipeline alternative, it would be outside of 100 feet from the San Simeon Creek corridor.

San Simeon Creek Lagoon

San Simeon Creek Lagoon is located on the downstream end of San Simeon Creek. San Simeon Creek Lagoon is described as a stillwater wetland by the 1998 NCAP Update and is subsequently designated in the same document as an ESHA (Refer to Exhibit 8). As mapped by RBF in 2014, San Simeon Creek Lagoon is believed to extend to an area approximately 230 feet upstream (east) of Van Gordon Creek Road and approximately 100 feet downstream (west) of the confluence of San Simeon Creek and Van Gordon Creek, where the sides of the creek narrow slightly due to natural rock formations. Depending on the time of year and the water level in relation to the sandbar, the area may variably be a freshwater lagoon or a fresh/saltwater estuary. This area is used for spawning and/or rearing habitat by multiple species of fish, most significantly steelhead and tidewater goby. The proposed Project would not be sited within San Simeon Creek Lagoon, but would be located near to it. Development in the vicinity of this resource must demonstrate compliance with Sections 30231 and 30240 of the Coastal Act as noted above.

Section 30231

Under this section of the Coastal Act, the Project proponent must demonstrate that the proposed Project will retain the biological productivity and quality of wetlands and estuaries (i.e. San Simeon Creek Lagoon) and, where possible, restore them to better conditions. The proposed Project is not located within the creek or within its upland terrestrial extent and is not expected to result in any direct impacts as a result of construction. However, the Project could result in indirect impacts to the lagoon.

As described in Section 7.1, the proposed Project could result in a net deficit of groundwater resources, but that is currently unknown with available hydrologic data. During dry periods, especially during poor rainfall years, this could result in a premature reduction in both groundwater levels and the extent of the lagoon. During particularly wet years a potential reduction in average groundwater levels may be less significant, as during wet years the lagoon may extend over much of San Simeon State Beach. In dry years, such as 2014, the lagoon may be significantly reduced in size; during RBF's 2014 habitat assessment, the extent of the lagoon on the beach was only a fraction of what is displayed in available historical imagery since 1994. In situations like this, a premature reduction in water levels and subsequent closure of the sandbar could result in decreased habitat quality for those species that depend on the lagoon. For instance, steelhead smolts attempting to migrate to sea could become stranded in the lagoon if water levels recede too soon. Without additional hydrologic studies, it is difficult to know how water levels and subsequent productivity in this lagoon would be affected by implementation and operation of the proposed Project. More information on the connection

between groundwater, the surface water in San Simeon Creek and San Simeon Creek Lagoon, and the Pacific Ocean is required to better understand potential Project impacts. An adaptive management plan that requires water return levels to the lagoon to be adjusted to up to 150 gpm of water based on site conditions will be implemented as part of this project Although it is not known if the proposed Project will be in compliance with Section 20231 for San Simeon Creek Lagoon, the adaptive management program will be developed to ensure that the program will either be in compliance or adjusted to become compliant.

Section 30240

Because the proposed Project is not located within San Simeon Creek Lagoon, Section 30240a will not apply. However, under 30240b, the Project proponent must demonstrate that the proposed Project will be sited and designed to prevent significant impacts to the lagoon and will be compatible with the continuance of the habitat. The LIW alternative of the Project is located within 100 feet of the upland extent of the riparian vegetation, and is currently designed to avoid direct impacts to the vegetation and the streambed. This does not include any lagoon-related vegetation (e.g. emergent vegetation) but is instead a willow forest related to the general riparian corridor. Construction may result in sedimentation, but it is assumed that standard mitigation (e.g. BMPs) would reduce or eliminate the potential for sedimentation to enter the lagoon. Based on the locations of the proposed pipeline and injection wells in relation to San Simeon Creek Lagoon, it is not expected that removal of any riparian vegetation would be necessary during construction of the Project. Light tree trimming may be necessary in the immediate construction area to help facilitate construction of the pipeline, but this would likely be mitigated through vegetation replacement or re-vegetation if considered a loss. The proposed lagoon injection wells where treated water would be injected back into the creek and the lagoon would result in additional ground impacts. Contrarily, the discharge pipeline alternative would shift construction away from this general area and to another area as discussed in Section 7.3.

It is not expected that the proposed Project would have any direct significant impacts to the lagoon. As discussed above for Section 30231, it is possible that the Project may have indirect adverse impacts to the lagoon through depletion of groundwater. However, there is not enough hydrologic information yet to make the determination of whether implementation of the proposed Project would result in an average annual net surplus or net deficit of the aquifer's water budget. If the proposed Project could demonstrate that implementation would be likely to maintain an average net surplus, it could be argued that the proposed Project would be compatible with the continuance of this habitat. The proposed Project would not be located within the resource and would not result in the destruction or direct adverse modification of it. The Coastal Commission generally requires a habitat setback to prevent impacts that could degrade the resources; this setback, as with the CZLUO, is generally 100 feet. The proposed Project as designed would comply with this, as it is not located within 100 feet of the lagoon. However, because indirect impacts to the lagoon are not known, it is not currently known if the proposed Project as designed would comply with Section 30240b for San Simeon Creek Lagoon.

Van Gordon Creek

Van Gordon Creek is located in the center of the proposed Project, separating the percolation ponds from the brine evaporation pond and the LIW. Van Gordon Creek is designated as an ESHA by the 1998 NCAP Update ("Other Riparian"), and is designated as an ESHA ("Blueline Creeks & Streams") on the San Luis Obispo County "Coastal Zone Environmentally Sensitive Habitats" map available from the County website (Refer to Exhibit 8). This creek is a tributary to San Simeon Creek, converging with it just upstream of the start of San Simeon Creek Lagoon. One alternative of the Project would be sited within Van Gordon Creek for water discharge, whereas the LIW alternative would restrict construction to within 100 feet of Van Gordon Creek but not directly in the creek. Development in the vicinity of this resource must demonstrate compliance with Sections 30231 and 30240 of the Coastal Act as noted above.

Section 30231

Under this section of the Coastal Act, the Project proponent must demonstrate that the proposed Project will retain the biological productivity and quality of coastal streams (i.e. Van Gordon Creek) and, where possible, restore them to better conditions. The proposed Project is not located within the creek or within its upland terrestrial extent and is not expected to result in any direct impacts as a result of construction. However, the Project could result in indirect impacts to Van Gordon Creek.

One of the methods suggested by Section 30231 for maintaining the biological integrity of water bodies is "preventing [the] depletion of ground water supplies and substantial interference with surface waterflow." The purpose of the proposed Project is to extract groundwater from the San Simeon Creek aquifer through an existing well located in the center of a series of percolation ponds, to treat the extracted water, and to inject 75% of it (300 gpm) back into the ground approximately 0.33 mile northeast of the extraction point for subsequent re-extraction by municipal water supply wells. The remaining 25% of the treated water (100 gpm) would either be injected approximately 0.3 mile southwest of the extraction point for recharge into the creeks and lagoon or discharged directly into Van Gordon Creek. Without further hydrologic study, it is unknown what effect the removal and subsequent return of this water may have on the groundwater supply and subsequently on surface water. Because the lagoon injection wells are located downstream of Van Gordon Creek, it is unclear whether 100 gpm of water injected back into the creek and lagoon system would be sufficient to retain or improve upon the biological productivity and quality of this creek, and it is possible that a larger volume of water may be required to maintain high-quality stream habitat. Alternatively, discharging water directly into Van Gordon Creek may help to improve the biological productivity. However, an adaptive management plan will be implemented that will provide up to 150 gpm of water to be returned depending on stream conditions. This should ensure compliance with Section 20231 for Van Gordon Creek.

Section 30240

One alternative would be located within Van Gordon Creek for water discharge, and therefore Section 30240a would apply to this alternative. Under Section 30240a, ESHAs must be protected against disruption of habitat values, and only uses dependent on the ESHAs are allowed within them. Under the discharge pipeline alternative, an existing pipeline would be located within the creek. This pipeline, although it is already permitted for discharges, is not dependent on Van Gordon Creek. However, construction and operation of the pipeline presumably would have already been authorized under the Coastal Act prior to being permitted, and therefore the discharge pipeline alternative is presumed to be in compliance with Section 30240a.

Under Section 30240b, the Project proponent must demonstrate that the proposed Project will be sited and designed to prevent significant impacts to the creek and will be compatible with the continuance of the habitat. Both alternatives are located within 100 feet of the upland extent of the riparian vegetation, and are currently designed to avoid direct impacts to the vegetation and the streambed. Although the discharge pipeline alternative is directly within the streambed, the pipeline is already constructed and intermittently in use, and therefore would not require any additional construction. Upland construction of either alternative may result in sedimentation, but it is assumed that standard mitigation (e.g. BMPs) would reduce or eliminate the potential for sedimentation to enter the streambed. Based on the locations of the proposed pipeline and injection wells in relation to Van Gordon Creek, it is not expected that removal of any riparian vegetation would be necessary during construction of the Project. Light tree trimming may be necessary in the immediate construction area to help facilitate construction of the new pipelines, but this would likely be mitigated through vegetation replacement or re-vegetation if considered a loss. Under the LIW alternative, construction of the proposed lagoon injection wells would result in additional ground impacts. The brine evaporation pond is located very close to Van Gordon Creek but is in a basin below the creek; use of the pond is not expected to directly affect the creek.

It is not expected that the proposed Project would have any direct significant impacts to the creek. As discussed above for Section 30231, it is possible that the Project may have indirect adverse impacts to the creek through depletion of groundwater. However, there is not enough hydrologic information yet to make the determination of whether implementation of the proposed Project would result in an average annual net surplus or net deficit of the aquifer's water budget. If the proposed Project could demonstrate that implementation would be likely to maintain an average net surplus, it could be argued that the proposed Project would be compatible with the continuance of this habitat. This level of information is expected to be obtained from additional hydrologic studying and the development of an adaptive management plan. The proposed Project would not result in the destruction or direct adverse modification of it. However, the Coastal Commission generally requires a habitat setback to prevent impacts that could degrade the resources; this setback, as with the CZLUO, is generally 100 feet. The proposed Project as

designed does not comply with this, as several pipeline features and a monitoring well are located within 100 feet of the upland extent of this ESHA. Therefore, regardless of the chosen alternative, the proposed Project is expected to violate Section 30240b for Van Gordon Creek.

Monterey Pine Forests

A Monterey pine forest is located offsite on the southern end of the survey area, on the southern slopes of San Simeon Creek. This area is designated as an ESHA ("Terrestrial Habitat") on the San Luis Obispo County "Coastal Zone Environmentally Sensitive Habitats" map available from the County website (Refer to Exhibit 8). Monterey pine is designated by the CNPS with the Rare Plant Rank 1B.1, indicating that is rare, threatened, or endangered in California and elsewhere, and is seriously endangered in California. Furthermore, "Monterey Pine Forest" is considered a sensitive habitat by the CNDDB. However, the proposed Project is not expected to have any direct or indirect impacts on the formally-mapped Monterey pine forest ESHA located on the south side of San Simeon Creek. The trees are all located in the upland on slopes and bluffs above the creek and are not expected to be affected by construction and operation of the proposed Project. The proposed Project is expected to be in compliance with Section 30240 of the Coastal Act in protecting this ESHA.

However, a small stand of Monterey pines is located within the percolation ponds, and Well 9P7 is located within but near the southern end of this stand. This is not a mapped ESHA, but may qualify to be considered an ESHA because of the rare status of Monterey pines. For the purposes of this analysis, this area is treated below as if it is an unmapped ESHA—as defined in Section 23.11.030 of the CZLUO—and is given the same analysis as other resources above.

Section 30240

The proposed Project is located both within and adjacent to this small stand of Monterey pines and is thus subject to both Sections 30240a and 30240b. To show compliance with Section 30240a, the Project proponent must demonstrate that the proposed Project will not disrupt the habitat values of these trees and that it is dependent on this resource. While the existing Well 9P7 is located within the stand of trees, it is located near the southern end of them. The Project as designed shows the pipeline exiting the trees to the west and circumventing them to reach the AWTP. The pipeline is not proposed to be constructed through the stand of trees.

To show compliance with Section 30240b, the Project proponent must demonstrate that the proposed Project is designed to prevent effects that may significantly degrade the habitat, and is compatible with the continuance of the habitat. As stated above, the pipeline has been sited to exit and go around the pine stand, rather than through it. While siting the pipeline through the trees could have significant adverse effects and result in degradation of the habitat, siting the pipeline around the stand avoids major direct impacts and is expected to avoid any major habitat degradation. Because the pipeline would have minimal direct effects and would not

cause any significant degradation of this habitat, it can be considered to be compatible with the continuance of the habitat.

CEQA Threshold: *Would the proposed 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?*

8.8 LOCAL, REGIONAL AND STATE PLANS

The proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. There are currently no Habitat Conservation Plans that pertain to the Project site. The nearby Hearst Ranch Conservation Plan is outside of the Project site. Therefore, the proposed Project would not conflict with the provisions of any local, regional, or state Habitat Conservation Plans.

Section 9 Conclusion and Recommendations

Sensitive Plants

The installation of new extraction and injection facilities within 100 feet of San Simeon Creek and San Simeon Creek Lagoon may affect, directly or indirectly through construction or operation, special-status plant species. There are no aquatic-dependent special-status plant species expected to occur within the Project site. However, the installation of these facilities and/or of the associated pipelines in upland areas could result in impacts to special-status terrestrial plants such as compact cobwebby thistle, Jones' layia, or Monterey pine. Excavation and fill for wells and pipelines could cause changes to soil compaction levels, potentially changing the microhabitat that plants depend upon and changing plant compositions. Construction activity, in general, could result in the spread of fugitive dust throughout the construction area or in the spread of nonnative weed seeds via clothing, tires, or vehicle undercarriages. In addition, vehicle travel and pedestrian foot traffic could result in the trampling of plant species. Surveys for sensitive plants could be required to document the absence of sensitive plants. Only one sensitive plant species was observed during RBF's 2014 habitat assessment, Monterey pine. While construction will occur in the percolation ponds in direct proximity to a small stand of this species, based on Project designs the construction impacts are expected to be minimal.

Sensitive Wildlife

The installation of new extraction and injection facilities within 100 feet of San Simeon Creek, San Simeon Creek Lagoon, and Van Gordon Creek has the potential to affect several special-status wildlife species, including federally listed species occurring in these aquatic habitats. One federally endangered species, tidewater goby, was observed offsite during the habitat assessment and others such as steelhead and California red-legged frog have been observed in the past and are expected to be present.

While direct impacts to special-status wildlife species are expected to be negligible during construction, indirect operational impacts may occur as the result of pumping 400 gpm of groundwater from and only returning 100 gpm to the San Simeon Creek aquifer. If the proposed Project results in a water budget deficit, it could result in quicker reduction in stream levels during dry periods. Therefore, an adaptive management program is recommended that would allow flexibility in water injection levels up to 150 gpm depending on stream conditions. While a perennial section of San Simeon Creek is known to be present upstream of the confluence with Steiner Creek, the lower reaches are intermittent and are generally only inundated from late fall to late spring or early summer. Early reduction in water levels could result in a premature sandbar closure at San Simeon Creek Lagoon. This could reduce the amount of habitat for tidewater goby, which is only found in the lagoon habitat. Additionally, premature sandbar

closure could restrict the ability of adult steelhead to migrate from the ocean back into San Simeon Creek, and likewise restrict the ability of smolts to migrate from the creek into the lagoon and out to the ocean. In San Simeon Creek itself, because CRLF can breed as late as late April, early drops in water levels could possibly affect the ability of CRLF eggs to hatch. CRLF typically attaches its eggs to floating vegetation or vegetation rooted in the creek substrate; drops in water level could cause egg masses to desiccate. Tadpoles in turn could be lost if the creek dries too quickly. Western pond turtles and two-striped garter snakes would be less likely to be lost, but an early drop in water levels could force them to move to new sections of the creek or to shift their natural history (i.e. activity periods) to better fit their changing environment. Further hydrologic and water quality analyses are needed to determine if impacts will occur and to quantify any identified impacts. These studies would be essential components of the recommended adaptive management program.

Migratory Bird Treaty Act and Fish and Game Code

Nesting birds are protected pursuant to the Migratory Bird Treaty Act and Fish and Game Code (Sections 3503, 3503.3, 3511, and 3513 of the Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs). In order to protect migratory bird species, nesting bird clearance surveys need to be conducted prior to any vegetation removal or development that may disrupt the birds during the nesting season. Consequently, if avian nesting behaviors are disrupted, such as nest abandonment and/or loss of reproductive effort, it is considered “take” and is potentially punishable by fines and/or imprisonment.

If ground-disturbing activities or removal of any trees, shrubs, or any other potential nesting habitat are scheduled within the avian nesting season (nesting season generally extends from February 1 - August 31, but can vary from year to year based upon seasonal weather conditions), a pre-construction clearance survey for nesting birds should be conducted within 10 days prior to any ground disturbing activities to ensure that no nesting birds will be disturbed during construction. As long as development does not cause direct take of a bird or egg(s) or disrupt nesting behaviors, immediate protections would not be required. The biologist conducting the clearance survey should document a negative survey with a report indicating that no impacts to active avian nests will occur.

If an active avian nest is discovered during the pre-construction clearance survey, construction activities might have to be rerouted, a no-work buffer[2] might have to be established around the nest, or delayed until the young have fledged. If an active nest is observed it is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor

[2] The size of the buffer shall be determined by the biologist in consultation with CDFW, and shall be based on the nesting species, its sensitivity to disturbance, and expected types of disturbance. Typically these buffers range from 250 to 500 feet from the nest location.

the nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the qualified biologist has determined that young birds have successfully fledged or the nest has otherwise become inactive (i.e. failed), a monitoring report shall be prepared and submitted to the Community of Cambria for review and approval prior to initiating construction activities within the buffer area. The monitoring report shall summarize the results of the nest monitoring, describe construction restrictions currently in place, and confirm that construction activities can proceed within the buffer area without jeopardizing the survival of the young birds. Construction within the designated buffer area shall not proceed until the written authorization is received by the applicant from CDFW.

Section 10 References

Burt, W.H., 1986. *A Field Guide to the Mammals in North American North of Mexico*. Houghton Mifflin Company, Boston, Massachusetts.

California Coastal Commission (CCC). 1998. North Coast Area Plan Update, San Luis Obispo County Local Coastal Program Major Amendment No. 1-97, Revised Findings. California Coastal Commission Meeting, San Luis Obispo, California. January 12-16, 1998.

California Department of Conservation, California Geological Survey website, www.consrv.ca.gov.

California Department of Fish and Wildlife, 2014. RareFind 5, California Natural Diversity Data Base, California.

_____. No date. Fringed Myotis (*Myotis thysanodes*) and Yuma Myotis (*Myotis yumanensis*) Species Accounts. California Wildlife Habitat Relationships System, California Interagency Wildlife Task Group.

California Native Plant Society (CNPS), 2014. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed on Wednesday, October 5,2013.

Dunn, J. and Alderfer, J, 2012. Field Guide to the Birds of North America. National Geographic.

Grinnell, J., 1933. *Review of the Recent Mammal Fauna of California*. University of California Publications in Zoology. 40:71-234.

Guzy, Gary S. and R. M. Andersen. 2001. Memorandum on Supreme Court ruling concerning CWA jurisdiction over isolated waters. U.S. EPA and U.S. Army Corps of Engineers.

Hall, E.R., 1981. *The Mammals of North America*, Volumes I and II. John Wiley and Sons, New York, New York.

Hickman, J.C., ed. 2012. *The Jepson Manual: Higher Plants of California*. University of California Press.

Holland, R. F. 1986. Preliminary descriptions of the Terrestrial Natural Communities of California. Calif. Dept. of Fish and Game, Sacramento, CA.

Ingles, L.G., 1965. *Mammals of the Pacific States*. Stanford University Press, Stanford, California.

Laudenslayer, Jr., W.F., W.E. Grenfell, Jr., and D.C. Zeiner, 1991. *A Checklist of the Amphibians, Reptiles, Birds and Mammals of California*. California Fish and Game 77:109-141.

National Oceanic and Atmospheric Administration. 2014. Steelhead Trout (*Oncorhynchus mykiss*) Species Account. National Marine Fisheries Service. Available online at http://www.nmfs.noaa.gov/pr/species/fish/steelheadtrout.htm.

Nilsson, C. and M. Svedmark. 2002. Basic Principles and Ecological Consequences of Changing Water Regimes: Riparian Plant Communities. Environmental Management 30(4): 468-480.

Oyler, L.D., MS. 1991. Biological Review, Groundwater Recharge Project, Cambria Community Services District. Prepared for Robert Bein, William Frost & Associates. July 5, 1991.

Penrod, K., R. Hunter, and M. Merrifield. 2001. Missing Linkages: Restoring Connectivity to the California Landscape, Conference Proceedings. Co-sponsored by California Wilderness Coalition, The Nature Conservancy, U.S. Geological Survey, Center for Reproduction of Endangered Species, and California State Parks.

Poole, A. (Editor). 2005. The Birds of North America Online: http://bna.birds.cornell.edu/BNA/. Cornell Laboratory of Ornithology, Ithaca, NY.

Rathbun, G.B., M.R. Jennings, T.G. Murphey, and N.R. Siepel. 1993. Status and ecology of sensitive aquatic vertebrates in lower San Simeon and Pico Creeks, San Luis Obispo County, California. Final Report under Cooperative Agreement 14-16-0009-91-1909 between U.S. Fish and Wildlife Service and California Department of Parks and Recreation. Publ. No. PB93-230779, National Technical Information Service, Springfield, VA, ix + 103 pp.

Remsen, Jr., J.V., 1978. *Bird Species of Special Concern in California*. Non-game Wildlife Investigations. Wildlife Management Branch Administrative Report No 78-1. Report prepared for the California Department of Fish and Game.

San Luis Obispo County (SLO County). 1980. North Coast Area Plan. Adopted by the San Luis Obispo County Board of Supervisors September 22, 1980 – Resolution 80-350. Revised August 24, 2008.

_____. 1986. Coastal Zone Land Use Ordinance – Title 23 of the San Luis Obispo County Code. Adopted by the San Luis Obispo County Board of Supervisors March 1, 1988, Ordinance 2344.

_____. 1988a. Coastal Zone Framework for Planning. Adopted by the San Luis Obispo County Board of Supervisors March 1, 1988. Revised November 2011.

_____. 1988b. Coastal Plan Policies. Adopted by the San Luis Obispo County Board of Supervisors March 1, 1988 – Resolution 88-115.

Skinner, M.W. and B.M. Pavlik, 1994. *Inventory of Rare and Endangered Vascular Plants of California*. California Native Plant Society, Spec. Pub. No. 1 (5th edition), Berkeley, California.

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration.

Stebbins, R.C., 1985. *A Field Guide to Western Reptiles and Amphibians*, Houghton Mifflin Company, Boston.

Stromberg, J.C., Beauchamp, V.B., Dixon, M.D., Lite, S.J., and C. Paradzick. 2007. Importance of low-flow and high-flow characteristics to restoration of riparian vegetation along rivers in arid south-western United States. Freshwater Biology 52: 651-679.

U.S. Department of Agriculture, Natural Resources Conservation Service, *Web Soil Survey.* (http://websoilsurvey.nrcs.usda.gov/app/)

U.S. Fish and Wildlife Service, 1996. *Review of plant and animal taxa for listing as endangered or threatened species; notice of review.* Federal Register Vol. 61, No. 40.

_____. 2007. Tidewater Goby (*Eucyclogobius newberryi*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service Ventura Fish and Wildlife Office, Ventura, California. September 2007.

U.S. Supreme Court (USSC). 2001. Court Decision on *Solid Waste Association of Northern Cook Counties v. United States Corps of Engineers* ("SWANCC"). January 9, 2001.

Williams, D.F., 1986. *Mammalian Species of Special Concern in California*. Wildlife Management Division Administrative Report 86-1. Prepared for The Resources Agency, California Department of Fish and Game.

Appendix A Sensitive Habitats and Potentially Occurring Sensitive Plant and Wildlife Species

Sensitive Habitats and Potentially Occurring Sensitive Plant and Wildlife Species

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Wildlife Species				
Ammodrammus savannarum grasshopper sparrow	Fed: None CA: CSC	Occur in grassland, upland meadow, pasture, hayfield, and old field habitats. Optimal habitat contains short- to medium-height bunch grasses interspersed with patches of bare ground, a shallow litter layer, scattered forbs, and few shrubs. May inhabit thickets, weedy lawns, vegetated landfills, fence rows, open fields, or grasslands.	No	**Low**. There is marginal nesting and foraging habitat for this species, particularly on the eastern side of the project site.
Antrozous pallidus pallid bat	Fed: None CA: CSC	Mostly found in desert habitats. Favors rocky outcrops near a source of water for roosting. Also found roosting in caves, rock crevices, mines, hollow trees, and buildings.	No	**Presumed absent**. There is no suitable habitat for this species.
Buteo regalis ferruginous hawk	Fed: None CA: WL	Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. Nests in foothills or prairies; on low cliffs, buttes, cut banks, shrubs, trees, or in other elevated structures, natural or human-made. Requires large, open tracts of grasslands, sparse shrub, or desert habitats.	No	**Moderate**. There is suitable nesting and foraging habitat. This species is a winter resident.
Corynorhinus townsendii Townsend's big-eared bat	Fed: None CA: CCE	Species is found in all but subalpine habitats, and may be found at any season throughout its range. Requires caves, mines, tunnels, buildings, or other human-made structures for roosting.	No	**Presumed absent**. There is no suitable habitat for this species.
Danaus plexippus monarch butterfly	Fed: None CA: None	Occurs in open fields and meadows dominated by milkweed. In winter, species can be found on the coast of southern California in Eucalyptus groves and at high altitudes in central Mexico.	No	**Presumed absent**. There is no suitable habitat for this species.
Emys marmorata western pond turtle	Fed: None CA: CSC	Requires basking sites such as partially submerged logs, rocks, matts of floating vegetation, or open mud banks. Normally associate with permanent ponds, lakes, streams, irrigations ditches or permanent pools along intermittent streams.	No	**High**. There is suitable habitat for this species in San Simeon Creek, Van Gordon Creek, and San Simeon Creek Lagoon, and it has been previously documented on multiple occasions within the survey area.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Eucyclogobius newberryi tidewater goby	Fed: **END** CA: CSC	Inhabit the fresh-saltwater interface (brackish) where salinity is less than 10 to 12 parts per thousand. Typically found at the upper edges of tidal bays near the entrance of freshwater tributaries and in coastal lagoons. These areas provide relatively shallow, and still, but not stagnant, water.	Yes	**Present**. This species was observed during the habitat assessment in San Simeon Creek Lagoon.
Falco mexicanus prairie falcon	Fed: None CA: WL	Inhabits dry, open terrain such as plains, grasslands, and marshes. Terrain can be flat or hilly, though breeding occurs on cliffs. May forage far from its typical nesting habitat or roosts, including to ocean shores.	No	**Moderate.** There is suitable foraging habitat but no suitable nesting habitat.
Myotis thysanodes fringed myotis	Fed: None CA: None	Roosts and colonizes in caves, mines, buildings, or other types of crevices. Can otherwise be found in a large number of habitat types, though the most optimal ones include pinyon-juniper, valley foothill hardwood, and hardwood-conifer areas.	No	**Moderate**. There is suitable roosting habitat within the survey area, particularly on the south side of San Simeon Creek.
Myotis volans long-legged myotis	Fed: None CA: None	Colonizes under bark and in hollow trees, as well as in crevices or buildings. Usually roosts in trees during the day and caves and mines at night. Typically found within woodland and forest habitats that are above 4,000 feet in elevation.	No	**Low**. There is suitable diurnal roosting habitat but the project area is far outside of this species' preferred elevation range.
Myotis yumanensis Yuma myotis	Fed: None CA: None	Roosts in buildings, mines, caves, or crevices and also has been observed roosting in abandoned swallow nests and under bridges. Distribution is closely tied to bodies of water, which it uses as foraging sites and sources of drinking water. Open forest and woodlands are optimal habitat.	No	**Moderate**. There is suitable roosting habitat within the survey area, particularly on the south side of San Simeon Creek.
Oncorhynchus mykiss irideus steelhead – south/central California coast DPS	Fed: **THR** CA: CSC	Found in streams with gravelly bottoms. This distinct population segment is found from Santa Cruz County south to, but not including, the Santa Maria River. Adults spawn in coastal watersheds, while the young stay in freshwater or estuarine habitats for one to three years prior to migrating to the sea. After one to four years of maturing in the ocean, fish will return to their natal waters to spawn in freshwater.	No	**High**. There is suitable habitat for this species within San Simeon Creek and San Simeon Creek Lagoon and it has been previously documented on multiple occasions within the survey area.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Rana boylii foothill yellow-legged frog	Fed: None CA: CSC	Found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types.	No	**Moderate**. There is suitable habitat for this species within San Simeon Creek.
Rana draytonii California red-legged frog	Fed: **THR** CA: CSC	Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamside's with plant cover. Most common in lowlands or foothills. Breeds in permanent or ephemeral waters sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.	No	**High**. There is suitable habitat for this species in San Simeon Creek, Van Gordon Creek, and San Simeon Creek Lagoon. There is also suitable upland dispersal habitat in the percolation ponds. It has previously been documented in the hundreds in San Simeon Creek.
Taricha torosa Coast Range newt	Fed: None CA: CSC	Found in both aquatic and terrestrial habitats, but typically in coastal drainages between San Diego and Mendocino Counties. Will migrate over 1 kilometer to reach breeding habitat in ponds, reservoirs, and slow-moving streams.	No	**Moderate**. There is suitable habitat for this species in San Simeon Creek, Van Gordon Creek, and San Simeon Creek Lagoon
Thamnophis hammondii two-striped garter snake	Fed: None CA: CSC	Occurs in or near permanent fresh water, often along streams with rocky beds and riparian growth up to 7,000 feet in elevation.	No	**High**. There is suitable habitat for this species within San Simeon Creek, Van Gordon Creek, and San Simeon Creek Lagoon. It has been documented at this site in the past.
Plant Species				
Abies bracteata bristlecone fir	Fed: None CA: None CNPS: 1B.3	Occurs in rocky areas within lower montane coniferous forest, broadleafed upland forest, and chaparral. From 591 to 5,249 in elevation.	No	**Presumed absent**. The site is below the known elevation range of this species.
Allium hickmanii Hickman's onion	Fed: None CA: None CNPS: 1B.2	Found in sandy loam, damp ground, and vernal swales within closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland, and cismontane woodland. It is most often found in grassland. From 16 to 656 feet in elevation.	No	**Low**. There is marginal habitat for this species to occur.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Arctostaphylos cruzensis Arroyo de la Cruz manzanita	Fed: None CA: None CNPS: 1B.2	Occurs in sandy soils in a variety of habitat types including broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, chaparral, coastal scrub, and valley and foothill grassland. From 197 to 1,017 feet in elevation.	No	**Low**. There is marginal habitat for this species to occur.
Arctostaphylos hookeri* ssp. *hearstiorum Hearsts' manzanita	Fed: None CA: **END** CNPS: 1B.2	Typically found in sandy loam on terraces within chaparral, coastal prairie, coastal scrub, and valley foothill grassland. May also occur on stabilized dunes or on serpentine soils. From 180 to 656 feet in elevation.	No	**Low**. There is marginal habitat for this species to occur.
Baccharis plummerae* ssp. *glabrata San Simeon baccharis	Fed: None CA: None CNPS: 1B.2	Occurs in coastal scrub in areas where the habitat overlaps with grasslands. From 295 to 1,230 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Calochortus fimbriatus late-flowered mariposa lily	Fed: None CA: None CNPS: 1B.2	Found in dry, open coastal woodland and chaparral on serpentine soils. May also occur in riparian woodlands. From 902 to 6,250 feet in elevation.	No	**Presumed absent**. The site is below the known elevation range of this species.
Calochortus obispoensis San Luis mariposa lily	Fed: None CA: None CNPS: 1B.2	Most often found in serpentine grassland, but can also be found in chaparral and coastal scrub. From 164 to 2,395 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Calochortus simulans La Panza mariposa lily	Fed: None CA: None CNPS: 1B.3	Occurs in decomposed granite within valley and foothill grassland, cismontane woodland, chaparral, and lower montane coniferous forest. From 1,296 to 3,609 feet in elevation.	No	**Presumed absent**. The site is below the known elevation range of this species.
Calystegia subacaulis* ssp. *episcopalis Cambria morning-glory	Fed: None CA: None CNPS: 4.2	Found in chaparral and cismontane woodland from 197 to 1,640 feet in elevation.	No	**Low**. There is marginal habitat for this species to occur.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Carex obispoensis San Luis Obispo sedge	Fed: None CA: None CNPS: 1B.2	Usually found in transition zones on sand, clay, or serpentine soils, often in seeps. Associated with closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland. From 33 to 2,690 feet in elevation.	No	**Low**. There is marginal habitat for this species to occur.
Castilleja densiflora* var. *obispoensis San Luis Obispo owl's-clover	Fed: None CA: None CNPS: 1B.2	Occurs in valley and foothill grassland and in meadows and seeps, sometimes on serpentine soils. From 33 to 1,312 feet in elevation.	No	**Low**. There is marginal habitat for this species to occur.
Ceanothus hearstiorum Hearsts' ceanothus	Fed: None CA: Rare CNPS: 1B.2	Found in maritime chaparral, coastal prairie, grassland, and coastal scrub. May co-occur with Arroyo de la Cruz manzanita. From 246 to 804 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Ceanothus maritimus maritime ceanothus	Fed: None CA: Rare CNPS: 1B.2	Occurs in coastal bluff scrub, chaparral, and valley and foothill grassland, but usually at the edges of coastal sage scrub or scattered throughout grassland. Some populations grow on serpentine soils. From 33 to 492 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Chorizanthe pungens* var. *pungens Monterey spineflower	Fed: **THR** CA: None CNPS: 1B.2	Found growing in sandy soils in coastal dunes, chaparral, cismontane woodland, and coastal scrub. From 0 to 492 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Cirsium fontinale* var. *obispoense San Luis Obispo fountain thistle	Fed: **END** CA: **END** CNPS: 1B.2	Occurs in serpentine seeps in chaparral and cismontane woodland from 115 to 1,198 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Cirsium occidentale* var. *compactum compact cobwebby thistle	Fed: None CA: None CNPS: 1B.2	Found on dunes and in clay soils in chaparral and grassland. May also occur in coastal prairies and coastal scrub. From 16 to 492 feet in elevation.	No	**Moderate**. There is suitable habitat for this species to occur, especially on the eastern and western ends of the survey area. This species was previously documented in a 1991 survey on a bluff overlooking San Simeon State Beach, in the northwestern section of the survey area.
Delphinium parryi* ssp. *blochmaniae dune larkspur	Fed: None CA: None CNPS: 1B.2	Occurs in maritime chaparral and coastal dunes from 0 to 656 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Delphinium parryi* ssp. *eastwoodiae Eastwood's larkspur	Fed: None CA: None CNPS: 1B.2	Found in serpentine soils in openings within chaparral and valley and foothill grassland. From 246 to 1,640 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Dudleya blochmaniae* ssp. *blochmaniae Blochman's dudleya	Fed: None CA: None CNPS: 1B.1	Occurs in rocky, clay, or serpentine soils within coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland. From 16 to 1,476 feet in elevation.	No	**Low**. There is marginal habitat for this species to occur.
Eryngium aristulatum* var. *hooveri Hoover's button-celery	Fed: None CA: None CNPS: 1B.1	Found in alkaline depressions, vernal pools, roadside ditches, and other wet places near the coast. From 10 to 148 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Galium californicum* ssp. *luciense Cone Peak bedstraw	Fed: None CA: None CNPS: 1B.3	Occurs in forest duff or gravelly talus of broadleafed upland forest, lower montane coniferous forest, and cismontane woodland in areas dominated by pine and oak. Usually in partial shade. From 2,871 to 5,003 feet in elevation.	No	**Presumed absent**. The site is below the known elevation range of this species.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Galium hardhamiae Hardham's bedstraw	Fed: None CA: None CNPS: 1B.3	Found in serpentine soils in closed-cone coniferous forest. Often co-occurs with Sargent's cypress. From 1,280 to 3,199 feet in elevation.	No	**Presumed absent**. The site is below the known elevation range of this species.
Horkelia cuneata* var. *sericea Kellogg's horkelia	Fed: None CA: None CNPS: 1B.1	Occurs in closed-cone coniferous forest, coastal scrub, coastal dunes, and chaparral in sandy openings. From 33 to 656 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Layia jonesii Jones' layia	Fed: None CA: None CNPS: 1B.2	Found in clay or serpentine soils within chaparral and valley and foothill grassland from 16 to 1,312 feet in elevation.	No	**Moderate**. There is suitable habitat for this species to occur, particularly on the eastern side of the survey area.
Malacothamnus palmeri* var. *involucratus Carmel Valley bush-mallow	Fed: None CA: None CNPS: 1B.2	Occurs on serpentine soils on talus hilltops and slopes within cismontane woodland and chaparral. Requires burns. From 98 to 3,609 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Malacothamnus palmeri* var. *palmeri Santa Lucia bush-mallow	Fed: None CA: None CNPS: 1B.2	Found in chaparral on dry, rocky slopes. Usually found near summits but may occasionally be found growing in canyons down to sea level. From 197 to 1,198 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Microseris paludosa marsh microseris	Fed: None CA: None CNPS: 1B.2	Occurs in closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland. From 16 to 984 feet in elevation.	No	**Low**. There is marginal habitat for this species to occur.
Monardella sinuata* ssp. *sinuata southern curly-leaved monardella	Fed: None CA: None CNPS: 1B.2	Occurs in sandy soils in coastal dunes, coastal scrub, chaparral, and cismontane woodland from 0 to 984 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Monolopia gracilens woodland woolythreads	Fed: None CA: None CNPS: 1B.2	Found in sandy to rocky soils within grassy openings in chaparral, valley and foothill grasslands, cismontane woodland, broadleafed upland forests, and north coast coniferous forest. Often seen on serpentine soils after burns. From 328 to 3,937 feet in elevation.	No	**Low**. There is marginal habitat for this species to occur.
Pedicularis dudleyi Dudley's lousewort	Fed: None CA: Rare CNPS: 1B.2	Occurs in deep, shady woods of older coast redwood forests, including chaparral, north coast coniferous forest, and valley and foothill grassland. From 197 to 2,953 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Pinus radiata Monterey pine	Fed: None CA: None CNPS: 1B.1	Found on dry bluffs and slopes within closed-cone coniferous forest and cismontane woodland. From 82 to 607 feet in elevation.	Yes	**Present**. There is a small stand of Monterey pine in the center of the percolation ponds and a thicket of them on the south side of San Simeon Creek.
Streptanthus albidus* ssp. *peramoenus most beautiful jewel-flower	Fed: None CA: None CNPS: 1B.2	Occurs on serpentine outcrops on ridges and slopes, typically associated with chaparral, valley and foothill grassland, and cismontane woodland. From 394 to 2,395 feet in elevation.	No	**Presumed absent**. There is no suitable habitat.
Triteleia ixioides* ssp. *cookie Cook's triteleia	Fed: None CA: None CNPS: 1B.3	Found on streamsides and in wet ravines on serpentine soils and serpentine seeps. Associated with cismontane woodland and closed-cone coniferous forest. From 492 to 2,297 feet in elevation.	No	**Presumed absent**. The site is below the known elevation range of this species.
Sensitive Habitats				
Monterey Pine Forest	CDFW Sensitive Habitat	Only three natural stands occur in California, one of which is in Cambria. This community is dominated by Monterey pine (up to 80%), with coast live oak usually the next most abundant tree. Understories are variable. The canopy may be nearly 100 feet tall. Limited to well-drained, sandy soils within the limits of summer marine fog incursion.	Yes	**Present**. There is a Monterey pine forest located on the south side of San Simeon Creek. This is in the survey area but not within the boundaries of the project site. There are isolated Monterey pines located in the project site.

Scientific Name Common Name	**Status**	**Habitat**	**Observed Onsite**	**Potential to Occur**
Valley Oak Woodland	CDFW Sensitive Habitat	Usually found below 2,000 feet in the Sacramento and San Joaquin valleys adjacent to the Sierra Nevada foothills or in the Coast Range valleys between Lake County and western Los Angeles County. Typically consists of relatively open woodland with a grassy understory and an open canopy typically less than 30-40% canopy cover. Valley oak is typically the only tree present within the community. Occurs on deep, well-drained alluvial soils, usually in valley bottoms.	No	**Absent**.

U.S. Fish and Wildlife Service (USFWS) - Federal
END- Federal Endangered
THR- Federal Threatened

California Department of Fish and Wildlife (CDFW) - California
END- California Endangered
CCE- California Candidate Endangered
CSC- California Species of Concern
WL- Watch List
Rare

California Native Plant Society (CNPS)
California Rare Plant Rank
1B Plants Rare, Threatened, or Endangered in California and Elsewhere
4 Plants of Limited Distribution – A Review List

Threat Ranks
0.1- Seriously threatened in California
0.2- Moderately threatened in California
0.3- Not very threatened in California

Appendix B Site Photographs

Photograph 1: Facing northwest into a small stand of Monterey pines located in the center of the percolation ponds. An existing water extraction well proposed for use with this project is located just to the left of the open tree in the center.

Photograph 2: Facing southwest from the northeastern corner of the proposed advanced water treatment plant site that would treat water extracted from the well in Photograph 1. This area consists of a disturbed, ruderal field immediately adjacent to percolation ponds.

Photograph 3: Facing north from eastern side of Van Gordon Creek. The proposed pipeline leaving the advanced water treatment plant is currently sited on the east side of this road, in the uplands above the creek.

Photograph 4: Facing south. After treatment, 300 gpm of potable water would be sent to a proposed injection well in an existing large well extraction field. After being reinjected, the water would be available to be extracted for use in Cambria. San Simeon Creek is on the other side of the vegetation.

Photograph 5: Facing south. After treatment, 100 gpm of water would be sent along a proposed pipeline passing through a ruderal field. This area is currently used as a right-of-way for a distribution line.

Photograph 6: Facing south. After treatment, 100 gpm of water would be sent along the proposed pipeline in Photograph 5 to this existing well, where it would be injected back into the ground for recharge.

Photograph 7: Facing north. One alternative for disposing of unusuable brine left over from the water treatment is to send it to an open evaporation pond. This pond is currently a ruderal area with scrubby and non-native vegetation.

Photograph 8: Facing east. A second alternative for disposing of unusuable brine left over from the water treatment is to send it via an existing pipeline to be discharged into the ocean.

Photograph 9: Facing west. Much of the upper reaches of San Simeon Creek within the survey area were dry during the habitat assessment, with occasional small pools.

Photograph 10: Facing west. The lower reaches of San Simeon Creek are wetted at the time of the habitat assessment.

Photograph 11: Facing west. San Simeon Creek Lagoon extended a short distance past State Route 1 during the habitat assessment. The closed sandbar is visible in the background.

Appendix C Flora and Fauna Compendium

Flora Compendium

Scientific Name	Common Name
Anagallis arvensis	scarlet pimpernel
Artemisia douglasiana	mugwort
Avena fatua	wild oat
Baccharis pilularis	coyote brush
Brassica nigra	black mustard
Bromus catharticus	rescue grass
Bromus diandrus	ripgut brome
Bromus hordeaceus	soft chess
Carduus pycnocephalus	Italian thistle
Conium maculatum	poison hemlock
Convolvulus arvensis	field bindweed
Cyperus eragrostis	tall cyperus
Equisetum telmateia ssp. *braunii*	giant horsetail
Erodium sp.	filaree
Eschscholzia californica	California poppy
Festuca perennis	Italian rye grass
Foeniculum vulgare	fennel
Geranium dissectum	wild geranium
Helminthotheca echioides	bristly ox-tongue
Hirschfeldia incana	shortpod mustard
Hordeum brachyantherum	meadow barley
Hordeum murinum	mouse barley
Hotia macrostachya	California hemp
Lotus corniculatus	Bird's foot trefoil
Lupinus sp.	lupine
Malva parviflora	cheeseweed
Medicago polymorpha	bur clover
Mentha sp.	wild mint
Narcissus sp.	narcissus
Phalaris aquatic	canary grass
Pinus radiate	Monterey pine
Plantago sp.	plantain
Raphanus raphanistrum	wild radish
Rubus sp.	blackberry
Rubus sp.	raspberry
Rumex sp.	dock
Salix lasiandra	Pacific willow

Scientific Name	Common Name
Salix lasiolepis	arroyo willow
Sambucus nigra	Mexican elderberry
Senecio vulgaris	common groundsel
Silybum marianum	milk thistle
Sonchus asper	sowthistle
Taraxacum officinale	dandelion
Toxicodendron diversilobum	poison oak

Fauna Compendium

Scientific Name	Common Name
Amphibians	
Pseudacris sierra	Sierran chorus frog
Birds	
Agelaius phoeniceus	red-winged blackbird
Anas platyrhynchos	mallard
Aphelocoma californica	western scrub-jay
Ardea alba	great egret
Ardea herodias	great blue heron
Bombycilla cedrorum	cedar waxwing
Buteo jamaicensis	red-tailed hawk
Buteo lineatus	red-shouldered hawk
Butorides virescens	green heron
Callipepla californica	California quail
Calypte anna	Anna's hummingbird
Carduelis psaltria	lesser goldfinch
Cathartes aura	turkey vulture
Chamaea fasciata	wrentit
Charadrius vociferus	killdeer
Colaptes auratus	northern flicker
Corvus brachyrhynchos	American crow
Cyanocitta stelleri	Steller's jay
Egretta thula	snowy egret
Empidonax difficilis	Pacific-slope flycatcher
Euphagus cyanocephalus	Brewer's blackbird
Fulica americana	American coot
Geothlypis trichas	common yellowthroat
Haemorhous mexicanus	house finch
Icterus bullockii	Bullock's oriole
Larus californicus	California gull
Larus occidentalis	western gull
Melanerpes formicivorus	acorn woodpecker
Melospiza melodia	song sparrow
Melozone crissalis	California towhee
Mergus merganser	common merganser
Molothrus ater	brown-headed cowbird
Myiarchus cinerascens	ash-throated flycatcher
Oreothlypis celata	orange-crowned warbler
Passerina amoena	lazuli bunting
Petrochelidon pyrrhonota	cliff swallow
Phalacrocorax auritus	double-crested cormorant
Pheucticus melanocephalus	black-headed grosbeak
Picoides nuttallii	Nuttall's woodpecker
Pipilo maculatus	spotted towhee
Piranga ludoviciana	western tanager

Poecile rufescens	chestnut-backed chickadee
Psaltriparus minimus	bushtit
Quiscalus mexicanus	great-tailed grackle
Selasphorus sasin	Allen's hummingbird
Setophaga petechial	yellow warbler
Sialia Mexicana	western bluebird
Spinus tristis	*American goldfinch*
Stelgidopteryx serripennis	northern rough-winged swallow
Sturnus vulgaris	European starling
Tachycineta thalassina	violet-green swallow
Troglodytes aedon	house wren
Turdus migratorius	American robin
Vireo gilvus	warbling vireo
Wilsonia pusilla	Wilson's warbler
Zenaida macroura	mourning dove

Fish

Eucyclogobius newberryi	tidewater goby
Gasterosteus aculeatus	threespined stickleback

Mammals

Odocoileus hemionus	mule deer

Reptiles

Sceloporus occidentalis	western fence lizard
Thamnophis elegans terrestris	coast garter snake

Appendix C
Cultural Resources Assessment

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

CULTURAL RESOURCES ASSESSMENT FOR THE CAMBRIA EMERGENCY WATER PROJECT, SAN LUIS OBISPO COUNTY, CALIFORNIA

CONFIDENTIAL MAP INCLUDED; NOT FOR PUBLIC DISTRIBUTION

Prepared for:
RBF Consulting
14725 Alton Parkway
Irvine, CA 92618

Authors:
Dustin Keeler, Courtney Richards, and Sherri Gust

Principal Investigator:
Sherri Gust
San Luis Obispo County Certified Archaeologist and Paleontologist

June 2014

Project Number: 3017
Type of Study: Cultural and Paleontological Resources Assessment (Phase I including survey)
USGS 7.5' Quadrangles: Cambria
Sites: P-40-000187, P-40-000221, P-40-000378, P-40-001373, P-40-001374
Area: 25 acres
Key Words: Holocene alluvium, Pleistocene marine terrace deposits, Salinan, Chumash, positive survey

1518 West Taft Avenue
Orange, CA 92865
Office (714) 974-8300

Field Offices
San Diego • Riverside • Canyon Country
• Morro Bay • West Sacramento

cogstone.com
Toll free (888) 497-0700

Federal Certifications 8(a), SDB, 8(m) WOSB
State Certifications DBE, WBE, SBE, UDBE

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

MANAGEMENT SUMMARY

This purpose of this study was to determine the potential effects on paleontological, archaeological, and historic resources of the proposed Emergency Water Supply Project in an unincorporated area of San Luis Obispo County, California. The Cambria Emergency Water Supply Project will involve the construction and operation of emergency water supply facilities at the District's existing San Simeon Well Field and Effluent Percolation Ponds. The project construction activities will include grading, trenching and excavation as well as installation of equipment on structural footings and concrete housekeeping pads. The project will be constructed within existing CCSD boundaries. Ground disturbance activities for the construction of wells include drilling between 40 and 100 feet in depth. Additionally, installation of the impermeable liner at Van Gordon Reservoir will require removal of vegetation. Nominal excavation will be necessary for the proposed AWTP, since it will be within a container. Yard piping will be installed below ground, under the AWTP. Additionally, no excavation will be necessary for the proposed conveyance pipelines, since they will be above ground.
The surface of the Project site is mapped as Holocene alluvium and Pleistocene marine terrace deposits. Jurassic to Cretaceous Franciscan Assemblage is located immediately north of the Project site and may be encountered at depth. A search for paleontological records was performed on behalf of Cogstone by the University of California Museum of Paleontology. Cogstone staff conducted additional searches in the Paleobiology Database and literature. No fossils are recorded within or in the immediate vicinity of the Project site. However, fossils have been recovered from similar sediments in other areas of the County from the Franciscan Assemblage and Pleistocene marine terrace deposits. The Holocene alluvium is too young to contain fossil material, but may be underlain by older, paleontologically sensitive sediments at depth.

A search for archaeological and historical records was completed by the Central Coast Information Center (CCIC) of the California Historic Resources Inventory System (CHRIS) on April 28, 2014. The records search covered the entire Project site plus a half mile radius. The results indicate there are five cultural resources within the Project site. These include three prehistoric sites and two multi-component sites. A total of 15 cultural resources have been previously documented outside the Project site within the half-mile search radius.

A Sacred Lands File search was requested from the Native American Heritage Commission (NAHC) on April 24, 2014. On April 29th, the Commission replied that there are no known sacred lands in the immediate project site. Cogstone sent letters to the seven Native American contacts on April 30, 2014 requesting any information related to cultural resource or heritage sites within or adjacent to the Project site. Ms. Patti Dunton of the Salinan Tribe of Monterey and San Luis Obispo County responded on May 13, 2014, stating that the Tribe has concerns that the project has the potential to impact known cultural resources within the project site around San Simeon Creek. Ms. Dunton requests a monitor be present during any ground disturbance activities. No additional responses have been received.

Cogstone performed the intensive pedestrian survey of the Project site on May 9, 2014. The survey consisted of walking in parallel transects spaced at approximately 15-meter intervals over the Project site wherever possible, while closely inspecting the ground surface. The majority of

the ground visibility in the Project was poor (0 to 25%) and thus a partially effective survey was possible on only some of the Project site. Cultural resources were observed in five locations within the boundaries of four previously recorded sites within the project site. Nothing was collected.

While the well excavations could encounter fossil bones or other materials from any of the sensitive sediments identified in the Project site, due to the method of excavation, the specimens will lack context that is critical to scientific significance. These types of unprovenanced fossils will only be significant if they result in identification of new species that are currently not known in the area. If they are identified as already-known species, they will be suitable for educational uses. Excavation for the proposed AWTP is not anticipated to be deep enough to impact paleontological sensitive sediments.
Based on the results of this study, this project is anticipated to have a negligible impact on paleontological resources.

Cultural resources are known within the Project and the immediate vicinity. It is recommended that a qualified archaeologist and Native American monitor be present for drilling, grading, trenching, excavation and any other subsurface impacts within the boundaries of the previously recorded sites (CA-SLO-378, CA-SLO-187, CA-SLO-1373, and CA-SLO-221) in the areas of the AWTP and LIW. The project is anticipated to have a negligible impact on cultural resources outside of these areas.

Prior to the start of construction, earthmoving personnel should receive a cultural and paleontological sensitivity training detailing the types of artifacts and fossils that may be encountered and procedures to follow if finds occur. In the event that unanticipated cultural or paleontological resources are discovered during project construction activities, all work should immediately be halted within 50 feet of the find until it can be evaluated by a qualified archaeologist or paleontologist (County of San Luis Obispo LCP Policy 6, Sections 23.05.140 and 23.07.104 of the CZLUO).

INTRODUCTION

PURPOSE OF STUDY

The purpose of this study was to determine the potential effects on paleontological, archaeological, and historic resources of the proposed Cambria Emergency Water Project in an unincorporated area of San Luis Obispo County, California (Figure 1). This study was requested by the Cambria Community Services District (CCSD) to meet their responsibility as the lead agency under the California Environmental Quality Act (CEQA).

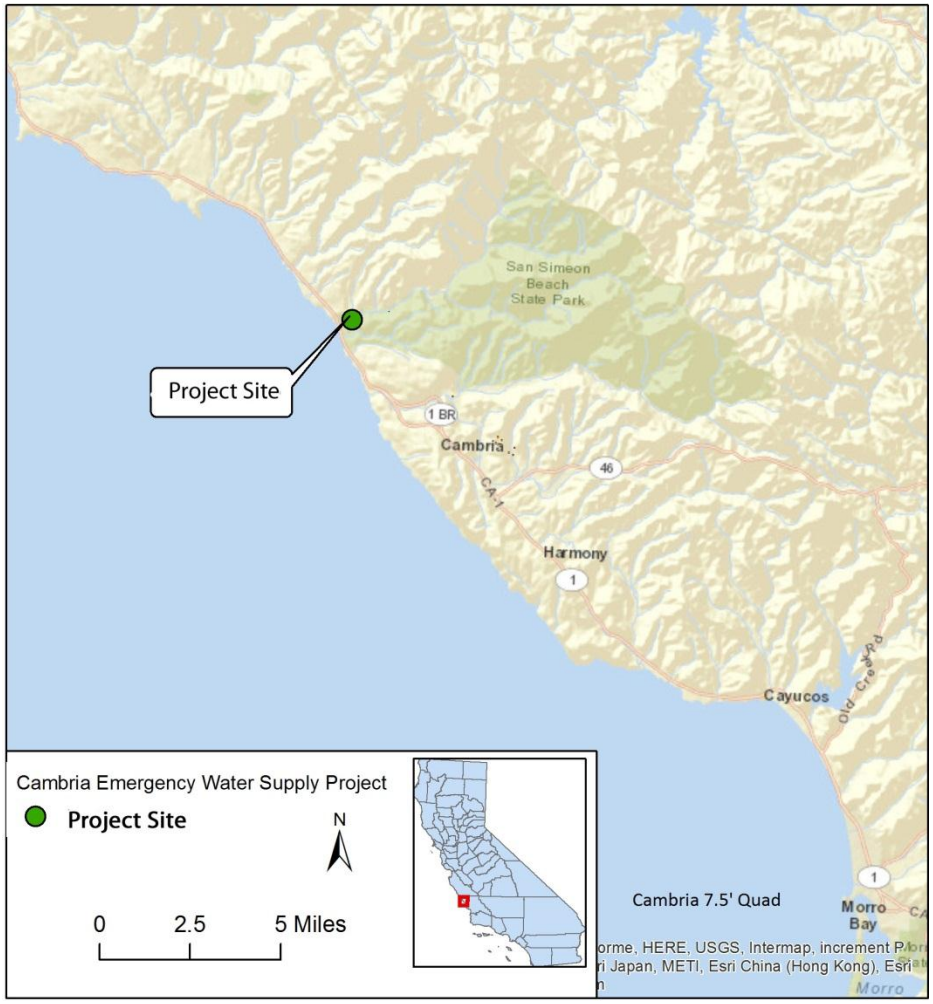


Figure 1. Project vicinity

PROJECT LOCATION AND DESCRIPTION

The proposed Project is located in central California's coastal region, the northwest portion of San Luis Obispo County. Cambria lies within the Santa Rosa Creek Valley, south of San Simeon. The Project site is located southeast ofthe San Simeon Monterey Creek Road/Van Gordon Creek Road intersection, at 990 San Simmeon-Monterey Creek Road, Campria. The apporixmately 96-acre Project site involves two parcels of land, APNs 013-051-024 and 013-051-008, which are owned by CCSD. The Project site t is located on the Cambria 7.5' quadrangle in Township 27 South, Range 08 East, Section 09 (Figure 2).

In response to the ongoing severe drought emergency, and in combination with very stringent water conservation measures, CCSD is proposing the Cambria Emergency Water Supply Project to construct and operate emergency water supply facilities at the District's existing San Simeon Well Field and Effluent Percolation Ponds. The Project would be used to treat reclaimed water to fully recharge one of the two coastal stream aquifers with advance treated water. The Project goals are to: avoid projected water supply shortages by the end of summer 2014; prevent seawater intrusion into groundwater aquifer and possible subsidence; and protect well pumps from losing suction. CCSD projects continued water shortages and drought conditions over the course of the next 20 years, as a result of climate change impacts, and the likely need for use of the emergency water supply facilities in 8 to 10 years of the next 20 years

Emergency Water Supply Project Facilities

The emergency water supply project facilities include the following components (see also Figure 3):

Existing Well 9P7 – The Project's source water is the San Simeon Creek aquifer from existing Well 9P7, which would provide reclaimed water to the AWTP.

Pipelines – An existing eight-inch pipeline and a new extension to this pipeline are proposed to transport the brackish water between Well 9P7 and the AWTP. A product water pipeline is proposed to transport the product water between the proposed AWTP and proposed Well RIW. A filtrate pipeline is proposed to transport the filtrate (product water) between the proposed AWTP and proposed LIW Wells). A brine disposal pipeline is proposed to transport the brine between the proposed AWTP and the existing Van Gordon Reservoir (evaporation pond).

Advanced water treatment plant (AWTP) – An AWTP is proposed to treat reclaimed water to advance treated water quality suitable for injection into the groundwater basin to augment the potable water supply. The AWTP's main treatment process would include membrane filtration

(MF), reverse osmosis (RO), and advanced oxidation process (AOP) utilizing ultraviolet (UV) light and hydrogen peroxide.

Recharge Injection Well (RIW) – To meet California Department of Public Health and Regional Water Quality Control Board regulations, the treated AWTP product water would be re-introduced/pumped for injection into the groundwater basin, and subsequently pumped by the existing San Simeon well field. Well RIW is proposed to inject advance treated water to the groundwater basin at the San Simeon well field. Monitoring Well MIW-1 is proposed immediately east of Well RIW.

Existing Van Gordon Brine Evaporation Pond – The AWTP generated waste stream (brine) would be disposed for evaporation in the existing Van Gordon Reservoir. The Reservoir would be modified/ rehabilitated as a brine evaporation pond with a new liner. The liner would provide containment of brine to protect soil and groundwater beneath. The brine evaporation would be aided with five mechanical spray evaporators. Monitoring Wells MIW-2, MIW-3, and MIW-4 are proposed around the evaporation pond.

Lagoon Injection Well (LIW) – AWTP product water would be pumped for discharge into the San Simeon Creek via three LIWs to maintain and improve fresh water conditions. As an alternative to the three LIWs, the existing Well 9P7 discharge pipeline and discharge structure may be utilized to discharge to Van Gordon Creek adjacent to the AWTP.

Monitoring Wells – A new monitoring well is proposed at the San Simeon well field in the vicinity of RIW, and three monitoring wells are proposed near Van Gordon evaporation pond.

The project construction activities would include construction and installation of the proposed facilities described above. Construction activities include grading, trenching and excavation as well as installation of equipment on structural footings and concrete housekeeping pads. The project would be constructed within existing CCSD boundaries.

Ground disturbance activities for the construction of wells include drilling between 40 and 100 feet in depth. Additionally, installation of the impermeable liner at Van Gordon Reservoir would require removal of vegetation. Nominal excavation would be necessary for the proposed AWTP, since it would be within a container. Yard piping would be installed below ground, under the AWTP. Additionally, no excavation would be necessary for the proposed conveyance pipelines, since they would be above ground.

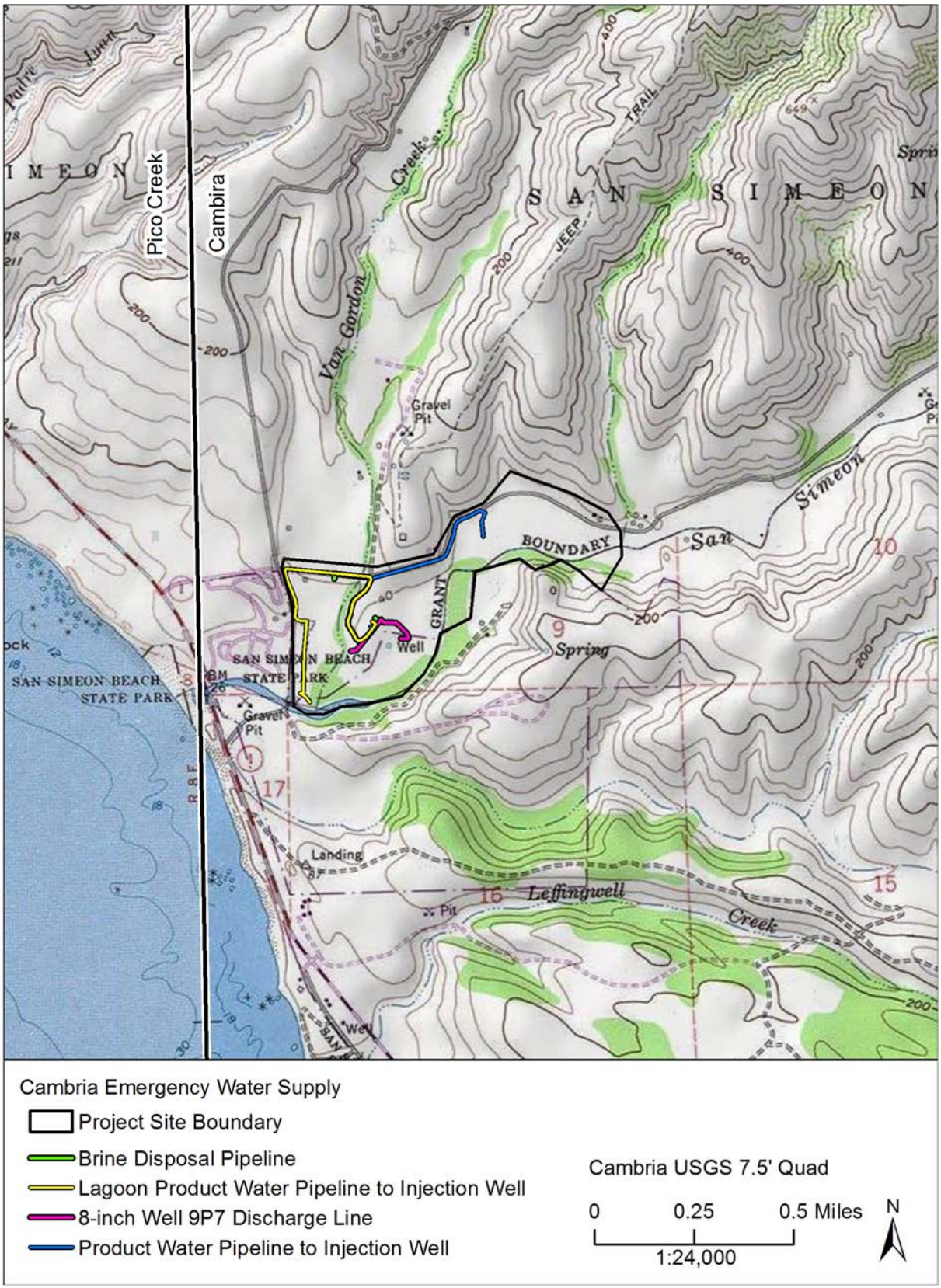


Figure 2. Project site

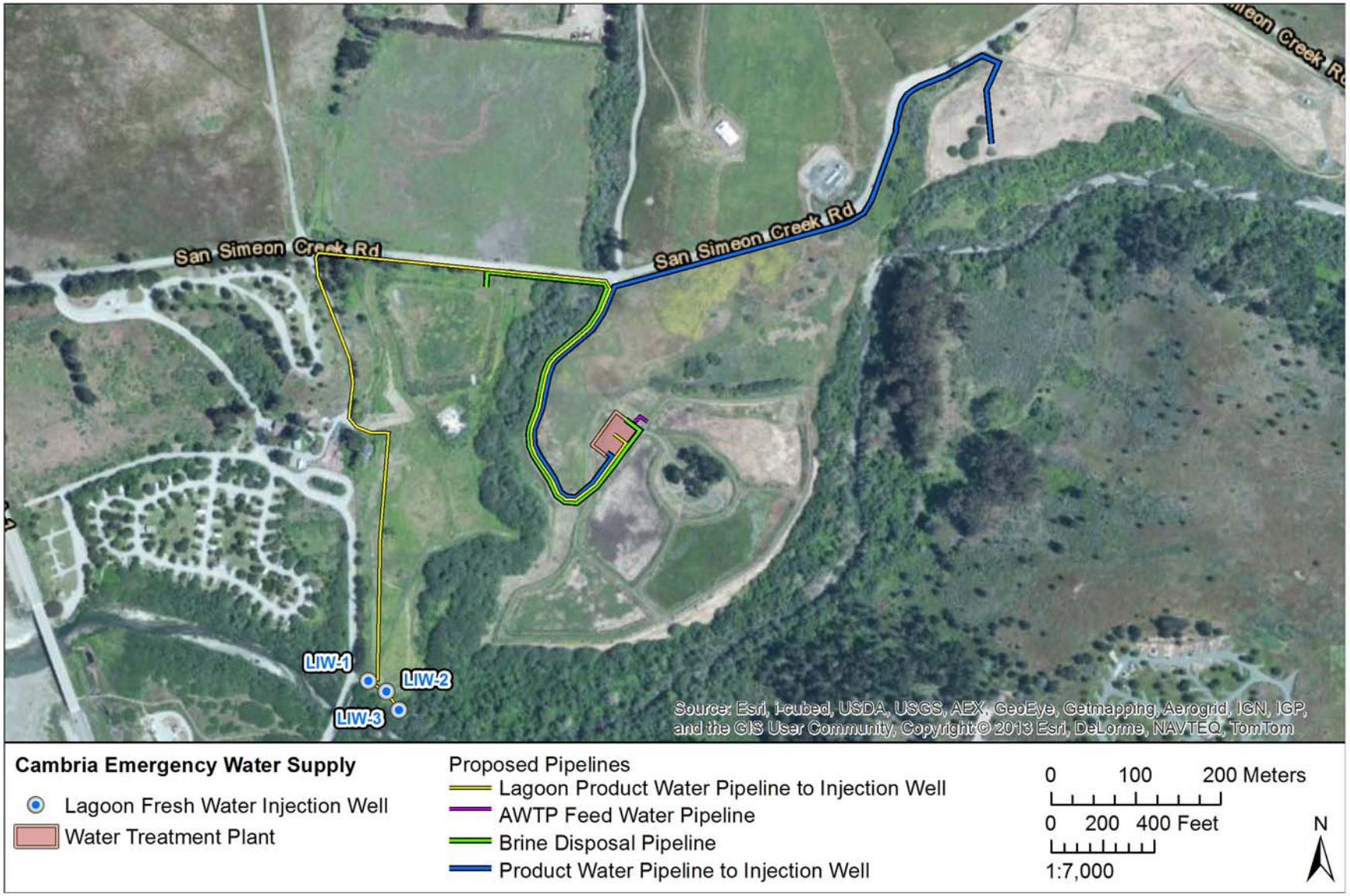


Figure 3. Project aerial

PROJECT PERSONNEL

Cogstone Resource Management Inc. (Cogstone) conducted this study. Sherri Gust served as Principal Investigator for the Project, supervised all work, wrote portions of and edited this report. Gust is a San Luis Obispo County Qualified Archaeologist. She has a M.S. in Anatomy (Evolutionary Morphology) from the University of Southern California, a B.S. in Anthropology from the University of California at Davis, and over 35 years of experience in California.

Dustin Keeler prepared the GIS maps and cultural resources sections of the report. Keeler is a RPA and has a Ph.D. and M.A. in Anthropology from State University of New York at Buffalo, a B.A. in Anthropology from Arizona State University, cross-training in paleontology, and over 12 years of experience. Courtney Richards prepared portions of this report pertaining to geology and paleontology. Richards has a M.S. in Biological Sciences with an emphasis in Paleontology from Marshall University, a B.S. in Earth and Space Sciences from the University of Washington, and two years of experience in California. Chad Jackson performed the pedestrian survey. Jackson has a BS in Earth Science with a concentration in geology and archaeology, a minor in anthropology, and nine years of experience.

REGULATORY ENVIRONMENT

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered.

CEQA includes historic and archaeological resources as integral features of the environment. If paleontological resources are identified as being within the proposed project site, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

PUBLIC RESOURCES CODE

Public Resources Code (PRC) Section 5097.5 states that no person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

CALIFORNIA REGISTER OF HISTORICAL RESOURCES

The State Historical Resources Commission has designed this program for use by state and local agencies, private groups and citizens to identify, evaluate, register and protect California's historical resources. The Register is the authoritative guide to the state's significant historical and archeological resources.

The California Register program encourages public recognition and protection of resources of architectural, historical, archeological and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding and affords certain protections under the California Environmental Quality Act.

To be eligible for listing in the California Register, a resource must meet at least one of the following criteria:

1. Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States
2. Associated with the lives of persons important to local, California or national history
3. Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation

In addition to having significance, resources must have integrity for the period of significance. The period of significance is the date or span of time within which significant events transpired, or significant individuals made their important contributions. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance. Alterations to a resource or

changes in its use over time may have historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register, if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data.

COUNTY OF SAN LUIS OBISPO

LCP Policies 1,3,5, and 6: Archaeological Resources

LCP 1 Protection of Archaeological Resources. The county shall provide for the protection of both known and potential archaeological resources. All available measures, including purchase, tax relief, purchase of development rights, etc., shall be explored at the time of a development proposal to avoid development on important archaeological sites. Where these measures are not feasible and development will adversely affect identified archaeological or paleontological resources, adequate mitigation shall be required. [THIS POLICY SHALL BE IMPLEMENTED AS A STANDARD.]

LCP 3 Identification of Archaeological Sites. ….. Development within an archaeological sensitive areas shall not occur until a preliminary site survey is conducted for the site, and if necessary, mitigation measures implemented. [THIS POLICY SHALL BE IMPLEMENTED PURSUANT TO SECTION 23.07.104 OF THE COASTAL ZONE LAND USE ORDINANCE.]

LCP 5 Mitigation Techniques for Preliminary Site Survey Before Construction. Where substantial archaeological resources are found as a result of a preliminary site survey before construction, the county shall require a mitigation plan to protect the site. Some examples of specific mitigation techniques include:

a. Project redesign could reduce adverse impacts of the project through relocation of open space, landscaping or parking facilities.

b. Preservation of an archaeological site can sometimes be accomplished by covering the site with a layer of fill sufficiently thick to insulate it from impact. This surface can then be used for building that does not require extensive foundations or removal of all topsoil.

c. When a project impact cannot be avoided, it may be necessary to conduct a salvage operation. This is usually a last resort alternative because excavation, even under the best conditions, is limited by time, costs and technology. Where the chosen mitigation measure necessitates removal of archaeological resources, the county shall require the evaluation and proper deposition of the findings based on consultation with a qualified archaeologist knowledgeable in the Chumash culture.

d. A qualified archaeologist knowledgeable in the Chumash culture may need to be on-site during initial grading and utility trenching for projects within sensitive areas. [THIS POLICY SHALL BE IMPLEMENTED PURSUANT TO SECTION 23.07.104 OF THE CZLUO.]

LCP 6 Archaeological Resources Discovered during Construction or through Other Activities. Where substantial archaeological resources are discovered during construction of new development, or through non-permit related activities (such as repair and maintenance of public works projects) all activities shall cease until a qualified archaeologist knowledgeable in the Chumash culture can determine the significance of the resource and submit alternative mitigation measures. [THIS POLICY SHALL BE IMPLEMENTED PURSUANT TO SECTIONS 23.05.140 AND 23.07.104 OF THE CZLUO.]

CZLUO Sections

23.04.200 - Protection of Archaeological Resources Not Within the Archaeologically Sensitive Areas Combining Designation. All development applications that propose development that is not located within the Archaeologically Sensitive Areas combining designation and that meets the following location criteria shall be subject to the standards for the Archaeologically Sensitive Areas Combining Designation in Chapter 23.07: development that is either within 100 feet of the bank of a coastal stream (as defined in the Coastal Zone Land Use Ordinance), or development that is within 300 feet of such stream where the slope of the site is less than 10 percent. [NOTE: Project is within 100 feet of stream; therefore subject to Chapter 23.07).

23.05.140 - Archeological Resources Discovery. In the event archeological resources are unearthed or discovered during any construction activities, the following standards apply:
a. Construction activities shall cease, and the Environmental Coordinator and Planning Department shall be notified so that the extent and location of discovered materials may be recorded by a qualified archeologist, and disposition of artifacts may be accomplished in accordance with state and federal law.
b. In the event archeological resources are found to include human remains, or in any other case when human remains are discovered during construction, the County Coroner is to be notified in addition to the Planning Department and Environmental Coordinator so that proper disposition may be accomplished.

23.07.104 - Archaeologically Sensitive Areas. To protect and preserve archaeological resources, the following procedures and requirements apply to development within areas of the coastal zone identified as archaeologically sensitive.
a. Archaeologically sensitive areas. The following areas are defined as archaeologically sensitive:
(1) Any parcel within a rural area which is identified on the rural parcel number list prepared by

the California Archaeological Site Survey Office on file with the county Planning Department.
(2) Any parcel within an urban or village area which is located within an archaeologically sensitive area as delineated by the official maps (Part III) of the Land Use Element.
(3) Any other parcel containing a known archaeological site recorded by the California Archaeological Site Survey Office.

b. Preliminary site survey required. Before issuance of a land use or construction permit for development within an archaeologically sensitive area, a preliminary site survey shall be required. The survey shall be conducted by a qualified archaeologist knowledgeable in local Native American culture and approved by the Environmental Coordinator. The County will provide pertinent project information to the Native American tribe(s).

c. When a mitigation plan is required. If the preliminary site survey determines that proposed development may have significant effects on existing, known or suspected archaeological resources, a plan for mitigation shall be prepared by a qualified archaeologist. The County will provide pertinent project information to the Native American tribe(s) as appropriate. The purpose of the plan is to protect the resource. The plan may recommend the need for further study, subsurface testing, monitoring during construction activities, project redesign, or other actions to mitigate the impacts on the resource. Highest priority shall be given to avoiding disturbance of sensitive resources. Lower priority mitigation measures may include use of fill to cap the sensitive resources. As a last resort, the review authority may permit excavation and recovery of those resources. The mitigation plan shall be submitted to and approved by the Environmental Coordinator, and considered in the evaluation of the development request by the Review Authority.

d. Archeological resources discovery. In the event archeological resources are unearthed or discovered during any construction activities, the standards of Section 23.05.140 of this title shall apply. Construction activities shall not commence until a mitigation plan, prepared by a qualified professional archaeologist reviewed and approved by the Environmental Coordinator, is completed and implemented. The County will provide pertinent project information to the affected Native American tribe(s) and consider comments prior to approval of the mitigation plan. The mitigation plan shall include measures to avoid the resources to the maximum degree feasible and shall provide mitigation for unavoidable impacts. A report verifying that the approved mitigation plan has been completed shall be submitted to the Environmental Coordinator prior to occupancy or final inspection, whichever occurs first.

CDP CONDITIONS 10 & 11

10. The applicant shall retain a qualified archaeological monitor, approved by the County Environmental Coordinator, to be present during all site disturbance activities. Monitoring reports shall be retained by the applicant and shared with the Environmental Coordinator's Office upon request.

11. In the event archaeological resources are unearthed or discovered during any site disturbance activities, the applicant, or the applicant's successor, shall be responsible to follow protocol and procedures described in Section 22.10.040 of the Land Use Ordinance.

DEFINITION OF SIGNIFICANCE FOR PALEONTOLOGICAL RESOURCES

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations (Scott and Springer 2003).

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important (Scott and Springer 2003).

BACKGROUND

GEOLOGICAL SETTING

The Project site is situated in the southern area of the Coast Range Province. The province consists of northwest-trending mountain ranges and valleys that run subparallel to the San Andreas Fault. A depression containing the San Francisco Bay separates the northern Coast Range from the southern. The Southern Coast Range is bounded by the Pacific Ocean to the west, Transverse Ranges to the south, Great Valley to the East, and Northern Coast Ranges to the north (Wagner 2002).

STRATIGRAPHY

The surface of the Project site is mapped as Holocene alluvium and Pleistocene marine terrace deposits. The Jurassic to Cretaceous Franciscan Assemblage is located immediately north of the Project site and may be encountered at depth (Figure 4; Dibblee 2007).

Jurassic to Cretaceous Franciscan Assemblage

Outcrops of late Jurassic and Cretaceous (161.2 - 65.5 million years old) Franciscan Assemblage in the vicinity of the Project site consist of a mélange of sheared rocks. Graywacke and sheared argillite are the most prevalent rock types. Tectonic fragments of chert, greenstone, serpentine, and blueschist are also present (Dibblee 2007).

Pleistocene Marine Terrace Deposits

The Pleistocene (2.59 million to 11.7 thousand years ago) marine terrace deposits consist of unconsolidated cobble-pebble gravel (Dibblee 2007).

Holocene Alluvium

These alluvial sediments were deposited during the Holocene epoch (11,700 years ago to present). Deposits are characterized by unconsolidated, undissected sand, silt, clay, and gravel (Dibblee 2007).

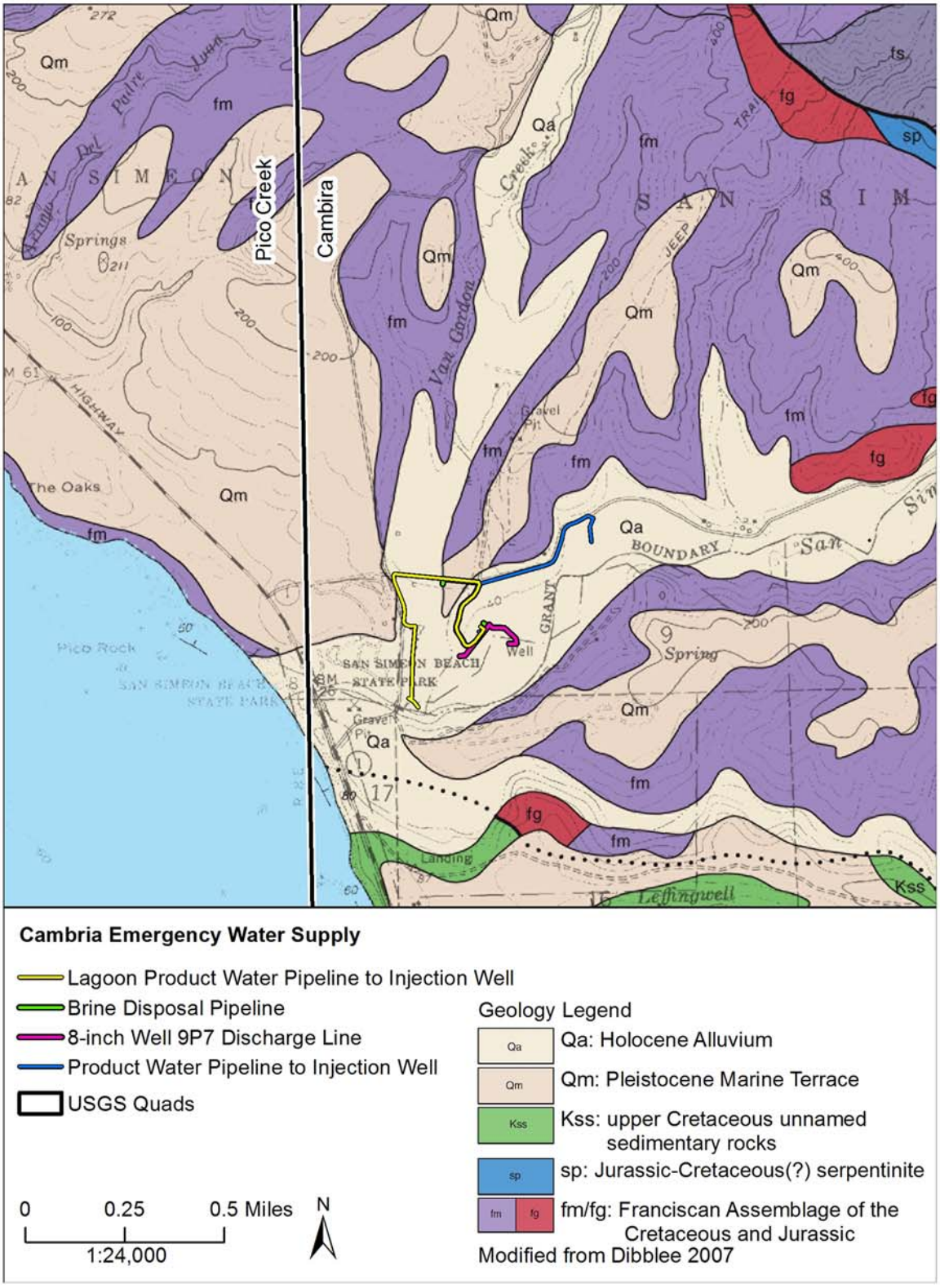


Figure 4. Geology of Project Site

NATURAL SETTING

The Project is situated in north of the San Simon Creek east of the San Simon Creek Lagoon. The climate of the general area falls within the Mediterranean regime, with hot dry summers and cool wet winters. The marine layer plays a mediating role in daily temperature fluctuation.

The Central Coast is dominated by an exposed shoreline with a mixture of rocky and sandy substrates that shifted in expanse through the Holocene (this section excerpted and summarized from Jones et al 2007). Lagoons and estuaries developed as the products of sea level rise and the drowning of river valleys during the Late Pleistocene through Middle Holocene that provided significant shelter from the open ocean. Archaeological findings from the Pismo Beach and Arroyo Grande areas indicate the presence of an extensive paleoestuary called Halcyon Bay, that had largely disappeared by Late Holocene as a result of rising sea levels and infilling of sediments.

The terrestrial environment of the Central Coast is marked by a series of relatively low (600–1,500 meters) northwest-southeast trending mountain ranges with the precipitous Santa Lucia Range causing a rain shadow effect on the interior ranges (Gabilan, Diablo, La Panza, and Temblor) and making them progressively more xeric to the east. Climate is solidly Mediterranean with rainfall coming almost exclusively between late fall and spring. Regional rainfall totals are heavily influenced by the El Niño–Southern Oscillation. El Niño events of moderate, strong, and very strong intensity occur every five to fifteen years and are generally associated with warm sea surface temperatures and increased storm activity. For the most part, Central Coast rivers provided little in the way of important aquatic resources.

Owing to its mid-latitude location, the Central Coast is marked by a complex mosaic of hardwood and relict closed-cone pine forests near the coast, blue oak–gray pine forest, valley oak savanna and chaparral in the interior valleys, and California prairie in the most xeric areas. Grassland and coastal sagebrush are more abundant in the south while resource-poor redwood forest occurs at moderate elevations in the north. Overall, the vegetative mosaic is slightly less complex than that to the south because of the linear patterning caused by parallel mountain ranges. Marshes comprised a significant proportion of the precontact landscape in the vicinity of estuaries and small inland lakes.

PREHISTORIC SETTING

Prehistoric Chronology and Culture History

The latest synthesis of information on Central Coast chronology and culture history presented here is excerpted and summarized from Jones, et al. (2007). Six cultural periods have been defined with representative and time-diagnostic artifacts (Figure 4). From oldest to youngest these are Paleo-Indian, Millingstone, Early, Middle, Middle/Late Transition and Late.

Paleo-Indian

Broader patterns in the regional prehistory, first recognized at Diablo Canyon, are reflected in three major cultural divisions marked by highly distinctive tool assemblages: the Millingstone Culture, the Hunting Culture and Late Period. This progression of three distinctive complexes can be readily detected over the whole Central Coast region. Earlier human presence in the area is suggested but no substantive components of this age have yet been identified.

Millingstone Culture

Millingstone is consistently marked by large numbers of well-made handstones and/or millingslabs, crude core and cobble-core tools and less abundant flake tools and large side-notched projectile points. In the Central Coast region few Millingstone components have been found farther than 25 kilometers inland from the shore and most interior Millingstone sites have produced marine shells indicating that site inhabitants also exploited coastal environments.

Faunal remains indicate that Millingstone peoples practiced broad-spectrum hunting and gathering, exploiting shellfish, fish, birds and mammals, although robust faunal assemblages are not common. In an extremely important study of Millingstone age burials, stable isotope analyses have revealed a diet composed of 70 to 84 percent marine food. Given the low frequency of fish and pinniped bones in most Millingstone assemblages, this suggests heavy use of shellfish, which is supported by dense concentrations of shells in many deposits and dietary reconstructions based on these and other faunal remains.

Hunting Culture

Hunting Culture was defined by the same basic yet striking pattern in which large projectile points become extremely abundant after ca. cal b.c. 3500/3000. Hunting Culture sites are often marked by highly visible accumulations of biface derived debitage and a range of site types has been recognized including middens, flaked and ground stone scatters and scatters of flaked stone only that include lithic procurement stations/quarries.

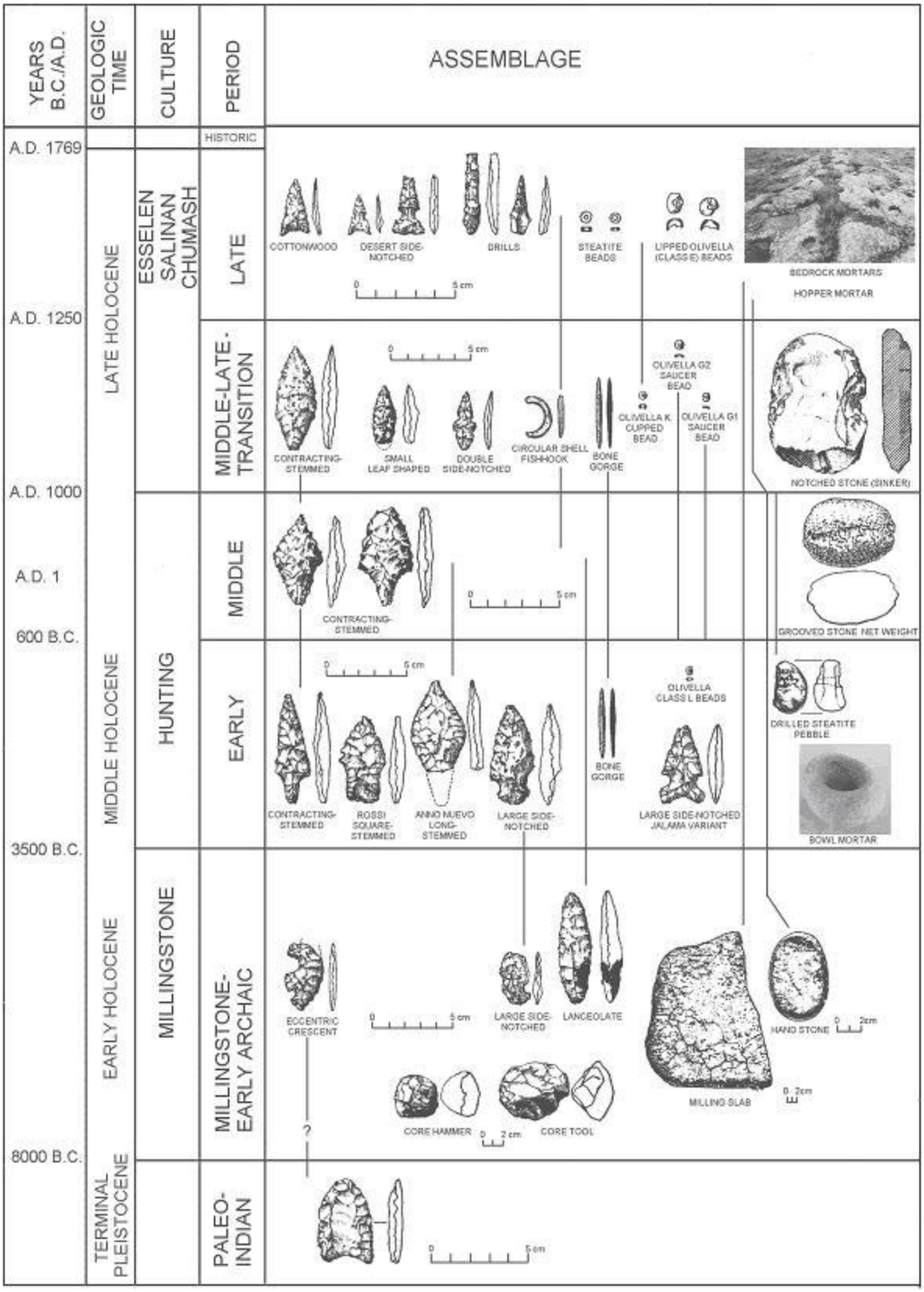


Figure 5. Prehistoric culture chronology (Jones, et al. 2007)

The Early Period of the Hunting Culture is marked by co-occurrence of contracting-stemmed and Rossi square-stemmed (Central Coast Stemmed Series) points and large side-notched variants (as a holdover from Millingstone). Cobble-core tools occur in lower frequencies than in earlier times. Line fishing implements are limited to bi-pointed bone gorges. Early Period burials show a preference for flexed position and grave associations that commonly included Rossi square-stemmed projectile points, fish gorges and Class L beads. Hunting Culture faunal assemblages show variability; while most Early Period components emphasize deer, some show focus on rabbits or sea otters. Fish remains from the Early Period components show increases over the Millingstone Culture. Shellfish were part of the diet at all coastal sites.

Middle Period expressions of the Hunting Culture show retention of contracting-stemmed points and disappearance of square-stemmed and large side-notched variants. Beads are dominated by G2 saucers, replacing L2 thick rectangles and ground stone assemblages show continued use of both slabs/handstones and portable mortars/pestles. Circular shell fishhooks appear for the first time but bone gorges persist. Pitted stones are often the most abundant artifacts in Middle Period sites. Grooved stone net sinkers are common as well. Well-made bone flutes are occasionally found as burial accompaniments. Graves from all of these sites show continued preference for the flexed burial position. Other common Middle Period burial accompaniments include bone tubes and large quantities of *Olivella* G2 beads.

Toward the end of the Middle Period the appearance of small leaf-shaped projectile points marks the arrival of bows and arrows, although this new weapon seems to have been relatively unimportant at first. Animal resources exploited are similar to those of the Early Period although there is a change of emphasis with more fish and less shellfish. Radiocarbon-dated acorn remains from Morro Bay suggest that this important resource was exploited to some unknown degree by Hunting Culture people.

Salinan and Chumash Cultures

The Middle/Late Transition or terminal phases of the Hunting Culture represent dramatic changes in assemblages and settlement sometime after ca. cal a.d. 1000, highlighted by the appearance of large numbers of arrow points, disappearance of most stemmed points and changes in bead types.

Late Period assemblages are easily distinguished from the Hunting Culture throughout the region by profusions of Desert Side-notched and Cottonwood arrow points, small bifacial bead drills, bedrock mortars, hopper mortars, Class E (lipped) and K (cupped) *Olivella* beads and steatite disk beads. Most Late Period sites produce a few bead drills and small amounts of *Olivella* bead manufacturing debris, suggesting that low-level bead production was common and widespread. This contrasts significantly with the Santa Barbara Channel, where bead industries were profuse.

Circular shell fishhooks were still used and there is some evidence for persistence of contracting-stemmed points in low frequencies.

The Late Period is marked by a profusion of single-component sites in the interior and on the coast with a decided focus on the former. Typical Late Period occupations are marked by small middens with associated or nearby bedrock mortars. As with earlier periods, residential features are uncommon, but circular house floors roughly three to four meters in diameter are known. While expansive sites have been documented at some locations, Late Period middens are often fairly small (30 to 40 meters in diameter) with several discrete deposits clustered in one area. For the most part, the Late Period shows strong if not remarkable consistency in assemblages, site types and settlement patterns across the region despite linguistic variability.

NATIVE AMERICANS AT CONTACT

While Spanish seafarers made brief stops on the Central Coast as early as 1542, long-term contact was initiated in 1769 by the Portolá overland expedition (this section excerpted and summarized from Jones et al 2007). At that time most of the central California coast was occupied by a large number of small, autonomous tribelets. Actual ethnographic observations of these societies were afforded only to the earliest Spanish explorers and missionaries, and the documentation resulting from these early contacts is woefully incomplete. Attempts at more systematic anthropological description were not initiated until early in the twentieth century following at least 150 years of precipitous population decline. Speakers of Native languages were still present in the early 1900s, and the earliest salvage ethnographies emphasized documentation of dying languages.

Analysis of records from the Spanish missions has provided the names of tribelets and other communities for the areas in which the Salinan and Northern Chumash (Obispeño) languages were spoken. Actual village locations and tribelet boundaries remain poorly documented, and there are remarkably few firm associations between named villages and archaeological sites, and even fewer cases where village sites have been excavated.

The manner in which subsistence was accomplished within tribelet communities in terms of systems of seasonality and settlement is frustratingly unclear, but the accounts of the earliest Spanish explorers consistently allude to relatively small groups that moved seasonally and exploited a wide range of terrestrial and marine resources. Early observers noted that the local inhabitants “do not have fixed places for their villages, but wander here and there wherever they can find provisions at hand.” This type of description is common in early Spanish accounts throughout the region. These sources repeatedly mention the use of tule balsas and bows and arrows, and the exploitation of acorns, pine nuts, buckeye nuts, seeds, strawberries, blackberries,

sardines and other fish, shellfish, deer, antelope, rabbits, and quail. Early accounts also refer to regular controlled burning.

While the early historic accounts imply band like mobility and subsistence, certain aspects of the ethnohistoric record suggest a higher level of sociopolitical complexity. The greatest conundrum in Central Coast ethnohistory is reconciling apparent bandlike subsistence practices with early accounts of ascribed political power, highly formalized leadership statuses, economic redistribution, and widespread warfare. Most historic accounts allude to groups of 40 to 60 people, which is a typical size for mobile bands. However, one early encounter at Avila Beach near San Luis Obispo suggested as many as 300 people aggregated in one place, while another in the Nacimiento Valley by the Portolá expedition suggested as many as 600 people harvesting pine nuts.

More intriguing signs of complexity include suggestions of significant concentrations of political power and prestige especially among the Obispeño (Northern Chumash), where early accounts repeatedly describe one exceptionally prestigious chief, Buchon, who traveled with an entourage, directed attacks on other groups, and was able to command tribute even after his death. The repeated references to Buchon's power and influence have been commonly interpreted as an ethnically based (Chumash) sociopolitical system more complex than that of the Salinan, Esselen, or Ohlone tribelets. There are, however, clear suggestions of formal leadership status, hereditary chiefly power, and accumulation of wealth by chiefs among the Ohlone and Salinan as well. Other hallmarks of significant complexity represented in the Santa Barbara Channel (e.g., craft specialization in the form of bead and canoe manufacture, full sedentism, and an intensive maritime economy) were absent from the Central Coast.

HISTORIC SETTING

The earliest European explorers to land in San Luis Obispo County were Pedro de Unamuno in 1587 and Rodriguez Cermeño in 1595. After Sebastián Vizcaíno charted the Central Coast in 1602 and 1603, there were no explorations of the area until 1769, when the overland expedition of Gaspar de Portolá and the Franciscan Father Crespí traveled through the area. Portola's group camped on the banks of Santa Rosa Creek near present day Coast Union High School in Cambria (Krieger 1990:20). Mission San Luis Obispo de Tolosa, the fifth in California's chain of missions, was established by Father Junípero Serra on September 1, 1772. The mission prospered, with an assistancia, or assistant mission rancho established at Santa Margarita in the 1790s. Another granary and chapel were constructed near present-day Avila Beach in 1808. Twenty-five years later, on July 25, 1797, Mission San Miguel Arcángel was founded. Cambria was part of mission grazing lands during these years.

After California's annexation by Mexico in 1822, Mexican government officials and retired Army officers, with their eyes on the huge tracts of Mission lands, pushed for secularization of the missions. Cambria is within the 13,184 acre Santa Rosa Rancho granted to Julian Estrada in 1841 by Mexican Governor Juan Alvarado (Krieger 1990:43). The Great Drought of 1862-65 killed most of the livestock (sheep and cattle) in the area and most Rancho owners were forced to sell their lands.

Fledgling Cambria began near Leffingwell Cove but was later moved to the present location and was a center for lumber, ranching and mining. By 1870 dairy interests were developing with a strong Portuguese and Swiss Italian presence (Krieger 1990:67-74). Modern day Cambria is community known for tourism and its artistic community.

RECORDS SEARCHES

PALEONTOLOGICAL RESOURCES

A search for paleontological records was performed on behalf of Cogstone by the University of California Museum of Paleontology (UCMP). Cogstone staff conducted additional searches in the Paleobiology Database (PBDB) and literature. No fossils are recorded within or in the immediate vicinity of the Project site (Finger 2014, UCMP 2014). However, fossils have been recovered from similar sediments in other areas of the County. While the majority of the Franciscan Assemblage is unfossiliferous, it has produce rare, scientifically significant fossils. An example is the type specimen of an extinct marine reptile, *Plesiosaurus hesternus*, which was collected from the Franciscan Assemblage in San Luis Obispo County (UCMP 2014; Scott and Gust 2006). Ice age taxa known from Pleistocene marine sediments in the County include dolphin (Delphinidae), whale (Cetacea), sea cow (*Hydrodamalis* sp.), sea otter (*Latax lutris*), mammoth (*Mammuthus* sp.), Western horse (*Equus* cf. *occidentalis*), ancient bison (*Bison antiquus*), extinct camel (*Camelops* cf. *hesternus*), and ground sloth (*Paramylodon harlani*) (PBDB 2014). Holocene alluvium is too young to contain fossilized material.

ARCHAEOLOGICAL AND HISTORICAL RECORDS SEARCH

California Historic Resources Inventory System

A search for archaeological and historical records was completed by the Central Coast Information Center (CCIC) of the California Historic Resources Inventory System (CHRIS) on

April 28, 2014. The records search covered the entire Project site plus a half mile radius. The record search indicates a total of eight cultural resources investigations have been completely previously within parts of the Project Site (Table 1).

The results of these studies indicate there are five cultural resources within the Project site. These include three prehistoric sites and two multi-component sites. A total of 15 cultural resources have been previously documented outside the Project site within the half-mile search radius (Table 2). These include ten prehistoric sites, two historic sites, two multi-components sites, and one historic built environment resource (Table 2).

Table 1. Previous studies

Author	Doc No. (E-)	Title	Date	Quad	Distance from Project
Hoover, R.	45	Archaeological Component for the Cambria Wastewater and Sewage Disposal Project Environmental Impact Report	1974	Cambria	Within project site
Greenwood, R.	76	Culture Resource Management Study for the Hearst Ranch	1976	Pico Creek, Cambria	Within project site
Gibson, R.	171	Archaeological investigations at SLO-187B; A Mitigation for Cambria Water Transmission Facilities at San Simeon Creek/Van Gordon Road, San Luis Obispo County, CA	1979	Cambria	Within project site
Gibson, R.	732	Archaeological investigations at SLO-187B, a mitigation project for Cambria water transmission facilities at San Simeon Creek/Can Gordon Road, San Luis Obispo County	1983	Cambria	Within project site
Gibson, R.	2183	Results of the Archaeological Subsurface Testing at SLO-221 and SLO-1373, San Simeon Creek, San Luis Obispo County	1992	Cambria	Within project site
Breschini, G.	2305	Impact Assesment of Expanded Waste Water Facilities Adjacent to San Simeon Creek, San Luis Obispo County, CA. Subsurface Testing: Cambria Community Services District Waste Water Treatment Facility	1991	Cambria	Within project site
Gibson, R.	3722	Archaeological Resources Inventory for the Cambria Community Services District Effluent Disposal Field Improvements, San Simeon Creek, San Luis Obsipo County, California	1994	Cambria	Within project site
Jones, D. et al.	4753	San Simeon State Park Archaeological Site Assessment:2001	2002	Pico Creek, Cambria	Within project site

Table 2. Archaeological and historical resources

Trinomial (CA-SLO-)	Primary No. (P-40-)	Description	Quad	Distance from Project
72	72	Prehistoric shallow midden with sparse shell, tempory camp area	Pico Creek, Cambria	Within ½ mile
185	185	Prehistoric bedrock mortars and small midden deposit	Cambria	Within ½ mile
186	186	Prehistoric midden deposit (village site)	Cambria	Within ½ mile
187	187	Prehistoric open village site as indicated by midden deposit	Cambria	Within project site
188	188	Prehistoric bedrock mortar on outcrop of hard metamorphic rock	Cambria	Within ½ mile
221	221	Multi-component agricultural area showing surface indications of roofing tile fragments, and many lithic artifacts (Mission San Miguel Estancia?)	Cambria	Within project site
229	229	Prehistoric large occupation site	Pico Creek, Cambria	Within ½ mile
378	378	Prehistoric large permanent camp site	Cambria	Within project site
383	383	Prehistoric sparse lithic scatter	Pico Creek, Cambria	Within ½ mile
799	799	Prehistoric bedrock mortar	Cambria	Within ½ mile
800	800	Multi-components foundation with historic and prehistoric artifact scatters	Cambria	Within ½ mile
966	966	Historic cabin foundation and associated retaining walls	Cambria	Within ½ mile
967H	967	Historic foundation, trail markers and historic scatter (Whitaker Ranch complex)	Cambria	Within ½ mile
1373	1373	Multi-components extensive midden deposit with shellfish remains, lithics, groundstone and bone. Proto-Historic adobe and Historic scatters	Cambria	Within project site
1374	1374	Prehistoric bedrock mortars and shell fragments	Cambria	Within project site
1551	1551	Multi-component sparse historic and prehistoric scatter of shell, glass, porcelain, brick and few lithics	Cambria	Within ½ mile
1554	15534	Prehistoric sparse lithic scatter	Cambria	Within ½ mile
2197	2197	Prehistoric lithic and groudstone scatter including one steatite pendant	Cambria	Within ½ mile
	38036	Prehistoric unifacially worked cobble, core tool	Cambria	Within ½ mile
	40842	Historic steel bridge	Cambria	Within ½ mile

NATIVE AMERICAN CONSULTATION

A Sacred Lands File search was requested from the Native American Heritage Commission (NAHC) on April 24, 2014. On April 29th, the Commission replied that there are no known sacred lands within half a mile of the Project site. and the NAHC provided a list of seven Native

American tribes or individuals to contact for further information regarding the general Project vicinity (Appendix B).

Cogstone sent letters to the seven Native American contactson April 30, 2014 requesting any information related to cultural resource or heritage sites within or adjacent to the Project site. Ms. Patti Dunton of the Salinan Tribe of Monterey and San Luis Obispo County responded on on May 13, 2014, stating that the Tribe has concerns that the project has the potential to impact known cultural resources within the project site around San Simeon Creek. Ms. Dunton requests a monitor be present during any ground disturbance activities (Appendix B). No additional responses have been received.

SURVEY

SURVEY METHODS

The reconnaissance stage is important to verify the exact location of each cultural resource, the condition or integrity of the resource, and the proximity of the resource to areas of sensitivity. Chad Jackson, Cogstone Staff Archeologist, completed an intensive-level pedestrian survey of the Project site on May 9, 2014. The survey consisted of walking in parallel transects spaced at approximately 15-meter intervals over the Project wherever possible, while closely inspecting the ground surface.

SURVEY RESULTS

Ground surface visibility was nonexistent to poor in portions of the Project site due to dense vegetation (Figure 6). Locating previously recorded sites within these areas was impossible. In areas of fair ground surface visibility, cultural materials were observed at the surface at archaeological sites CA-SLO-187, CA-SLO-221, CA-SLO-378, and CA-SLO-1373.

Ground surface visibility at CA-SLO-187 was poor due to extremely dense vegetation. A small number of flakes were observed at the surface. Previous site records describe the site as a prehistoric open village site as indicated by midden deposit. The Water Pipeline to Injection Wells and the AWTP Feed Water Pipeline to the LIW Well will both pass through the site from north to south.

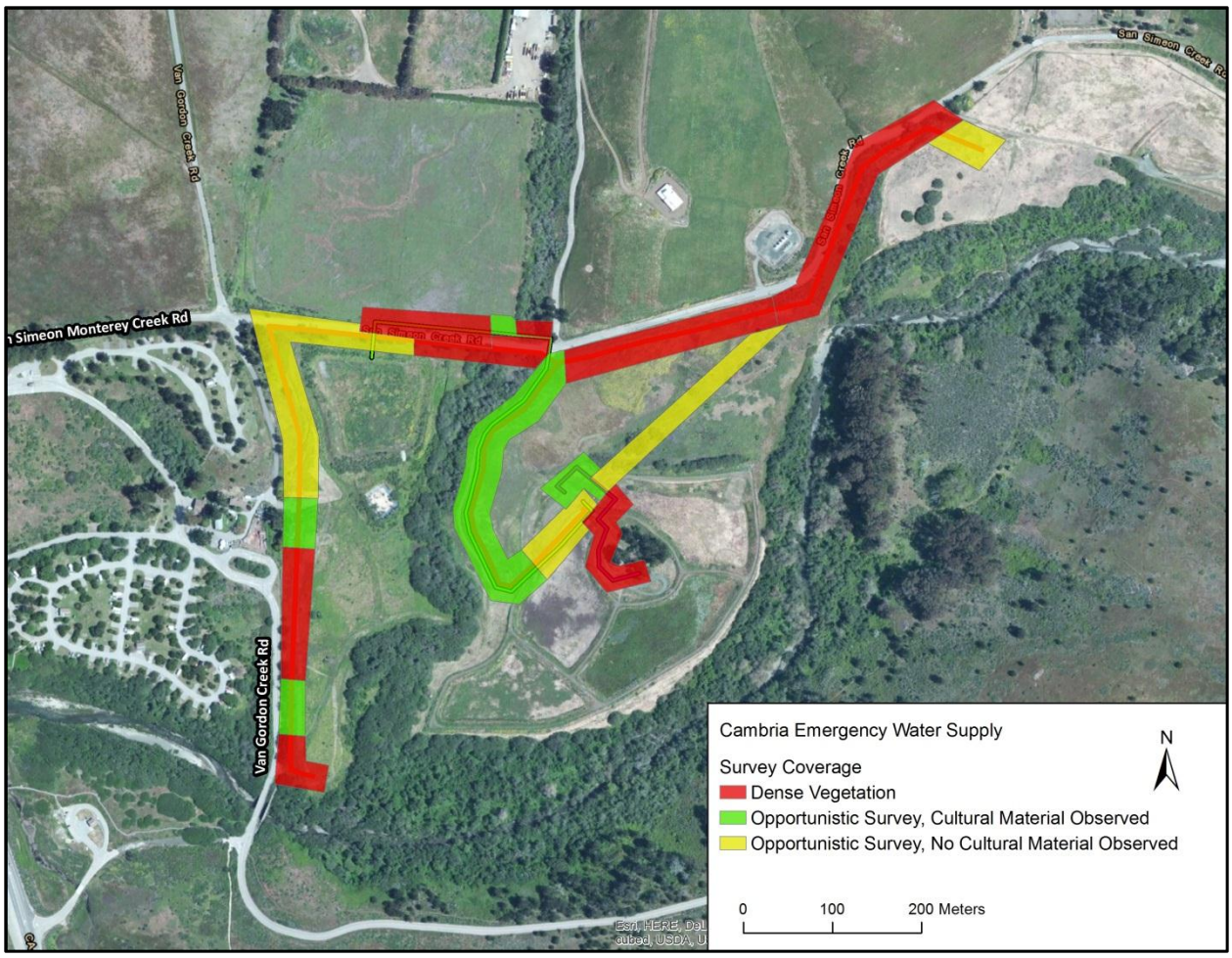


Figure 6. Survey coverage

Ground surface visibility at CA-SLO-221 was poor due to extremely dense vegetation. One adobe brick fragment was found within the site boundary adjacent to the AWTP Feed Water Pipeline. Previous site records describe CA-SLO-221 as a protohistoric site with an outpost from Mission San Miguel. The site has been disturbed by roads, levees, and artificial ponds or basins. The AWTP Feed Water Pipeline will pass through the site from northwest to southeast.

Ground surface visibility at CA-SLO-378 was poor due to extremely dense vegetation. A small number of flakes were observed at the surface along the Product Water Pipeline to Injection Wells and the AWTP Feed Water Pipeline to the LIW Well. CA-SLO-378 is a large permanent prehistoric campsite. A large amount of material including choppers, scrapers, broken bowls, and manos have previously been recovered from the site but no subsurface testing has been conducted. The area has been previously disturbed by roads, a house and the Van Gordon Reservoir.

Ground surface visibility at CA-SLO-1373 was fair and the site appears to be relatively intact. A small amount of ceramic, glass, clams and faunal bone was visible at the surface (Figure 9). Previous site records describe the site as a multi-component site with an extensive midden deposit containing lithics, marine shell, Fire Affect Rock, soapstone, and olivella shells. Other site components include a Proto-Historic adobe and Historic artifact scatters. The Brine Disposal pipeline will pass directly through the site from north to south.

Ground surface visibility at CA-SLO-1374 was fair but no cultural materials were observed. Previous site records describe the site as a Prehistoric site consisting of bedrock mortars and shell fragments. The site will not be impacted by the proposed Project facilities.

Figure 7. View of CA-SLO-1373 from western edge of CA-SLO-221

Figure 8. Limited surface visibility along two-track going through CA-SLO-187

Figure 9. Midden soil at site CA-SLO-1373 with lithic debitage and shell remains

IMPACT ANALYSIS

The Holocene alluvial deposits are not sensitive for fossil resources due to their young age and are given a PFYC sensitivity ranking of 2 or low. Vertebrate fossils are known to occur intermittently but with low predictability in the Franciscan Assemblage and Pleistocene marine terrace deposits resulting in a PFYC ranking of 3a or moderate sensitivity.

Ground disturbance activities for the construction of wells include drilling between 40 and 100 feet in depth. Additionally, installation of the impermeable liner at Van Gordon Reservoir would require removal of vegetation. Nominal excavation would be necessary for the proposed AWTP, since it would be within a container. Yard piping would be installed below ground, under the AWTP. Additionally, no excavation would be necessary for the proposed conveyance pipelines, since they would be above ground.

While the well excavations could encounter fossil bones or other materials from any of the sensitive sediments identified in the Project site, due to the method of excavation, the specimens will lack context that is critical to scientific significance.These types of unprovenanced fossils will only be significant if they result in identification of new species that are currently not known in the area. If they are identified as already-known species, they will be suitable for educational uses. Excavation for the proposed AWTP is not anticipated to be deep enough to impact paleontologically sensitive sediments.

Archaeological and historical resources are considered to be significant if they possess integrity and may contribute information important in prehistory or history. Based on the prior research and survey results, the potential to impact resources is discussed below.

There are five previously recorded archaeological resources within the Project site. The construction of the above ground pipelines is not anticipated to substantively impact these cultural resources. The Advanced water treatment plant (AWTP) is at the northern edge of CA-SLO-221 and the western portion of the AWTP is within the boundary of site CA-SLO-1373. The proposed location of the Lagoon Fresh Water Injection Well (LIW) is within the boundary of site CA-SLO-378 and is expected have an impact on this site. The construction access road to the LIW area passes through sites CA-SLO-187 and CA-SLO-378. The construction access road to the AWTP passes through sites CA-SLO-1373 and CA-SLO-221 (Figure 10). Grading, trenching and excavations in these areas may adversely impact the sites. Site SLO-1374 is located adjacent to the existing CCSD Water Supply Pipeline and is not expected to be impacted.

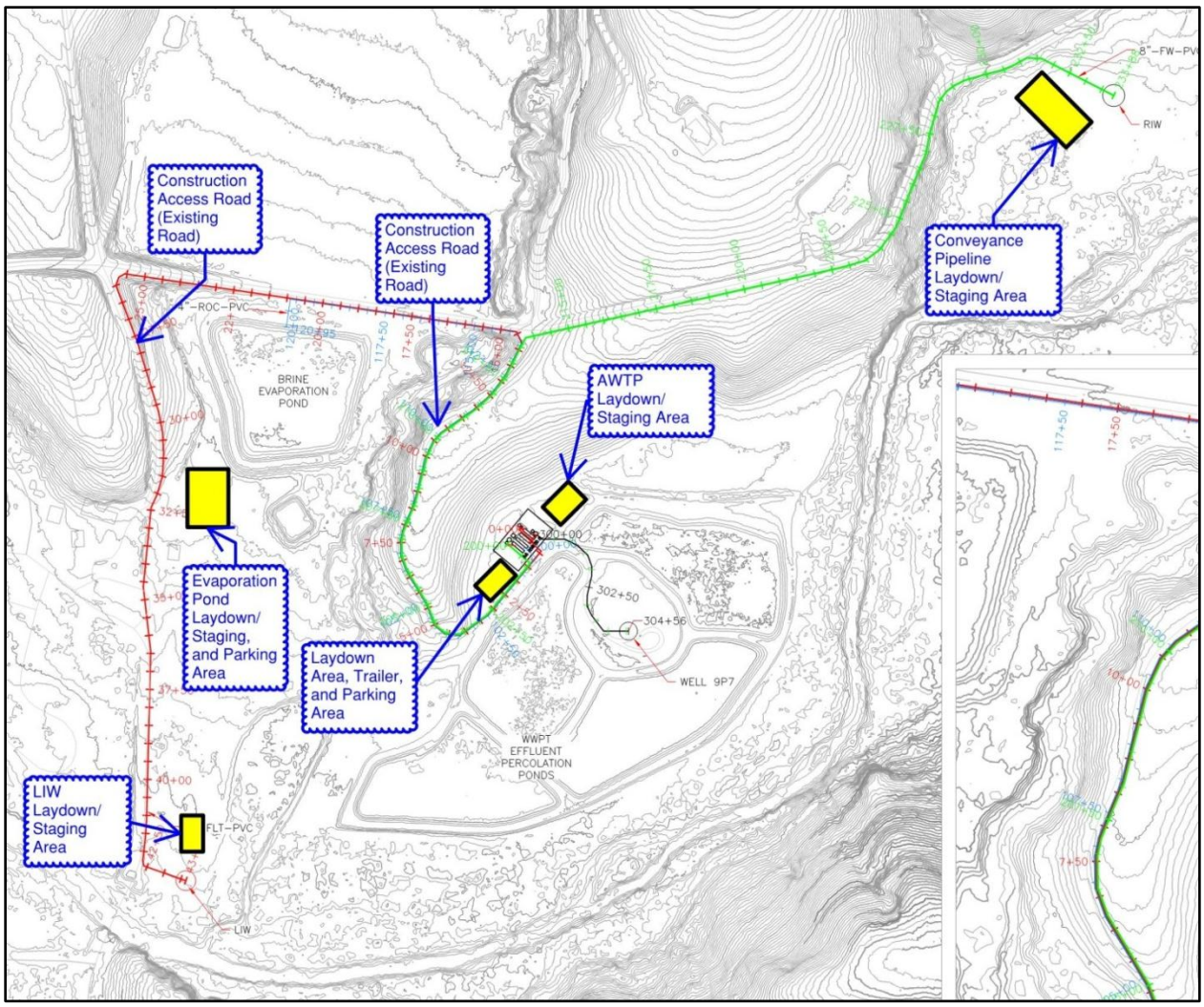


Figure 10. Access road and laydown/staging areas for construction

RECOMMENDATIONS

No paleontological resources are known within the Project or the immediate vicinity. However, the Franciscan Assemblage, which may be encountered at depth, and Pleistocene marine deposits similar to those within the Project site have produced significant paleontological resources within San Luis Obispo County. The Holocene alluvium is not sensitive for fossils, but may be underlain by older, paleontologically sensitive sediments at depth. No fossils meeting significance criteria are anticipated from the deep well excavations due to lack of context of any recovered material. All other excavations are anticipated to be shallow and will not impact paleontologically sensitive sediments. Based on the results of this study, this project is anticipated to have a negligible impact on paleontological resources.

Cultural resources are known within the Project and the immediate vicinity. It is recommended that a qualified archaeologist and Native American monitor be present for drilling, grading, trenching, excavation and any other subsurface impacts within the boundaries of the previously recorded sites (CA-SLO-378, CA-SLO-187, CA-SLO-1373, and CA-SLO-221) in the areas of the AWTP and LIW (County of San Luis Obispo LCP Policy 5d, Section 23.07.104 of the CZLUO). The project is anticipated to have a negligible impact on cultural resources outside of these areas.

Prior to the start of construction, earthmoving personnel should receive a cultural and paleontological sensitivity training detailing the types of artifacts and fossils that may be encountered and procedures to follow if finds occur. In the event that unanticipated cultural or paleontological resources are discovered during project construction activities, all work should immediately be halted within 50 feet of the find until it can be evaluated by a qualified archaeologist or paleontologist (County of San Luis Obispo LCP Policy 6, Sections 23.05.140 and 23.07.104 of the CZLUO).

REFERENCES CITED

BLM
2007 Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/20080/im_2008-009.html

Dibblee, T.W. Jr.
2007 Geologic Map of the Cambria Quadrangle, San Luis Obispo County, California. Edited by John A. Minch. Dibblee Geology Center Map #DF 364. Scale 1:24000.

Finger, K.
2014 Cambria Emergency Water Supply Project paleontological record search. Email dated 5/6/2014.

Jones, T., N. Stevens, D. Jones, R. Fitzgerald and M. Hylkema
2007 The Central Coast: a midlatitude milieu. In *California Prehistory: Colonization, Culture and Complexity*, T. Jones and K. Klar (eds), Altamira Press, Lanham, pages 125-146.

San Luis Obispo Historical Museum
2003 History of San Luis Obispo County. Available online: http://www.ci.san-luis-obispo.ca.us/history.asp, accessed November 4, 2009.

Scott, E. and K. Springer
2003 CEQA and fossil preservation in southern California. *The Environmental Monitor*, Winter 4-10, 17.

Scott, K. and S. Gust
2006 Paleontological Survey and Evaluation of Camp Roberts and Camp San Luis Obispo, California Army National Guard Facilities, Central California. Prepared by Cogstone Resource Management. Prepared for the California Army National Guard Environmental Office, Camp Roberts. On file at Cogstone, Orange, CA.

UCMP
2014 Online database search of the University of California, Museum of Paleontology.

Wagner, D.L.
2002 California geomorphic provinces. California Geological Survey note 36. Website: http://www.consrv.ca.gov/cgs/information/

APPENDIX A: QUALIFICATIONS

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

SHERRI GUST
Principal Investigator for Archaeology and Paleontology

EDUCATION

1994 M. S., Anatomy (Evolutionary Morphology), University of Southern California, Los Angeles
1979 B. S., Anthropology (Physical), University of California, Davis

SUMMARY QUALIFICATIONS

Ms. Gust has 35 years of experience in California, acknowledged credentials for meeting national standards, and is a certified/qualified principal archaeologist and paleontologist in the County of San Luis Obispo. Ms. Gust is an Associate of the Natural History Museum of Los Angeles County in the Vertebrate Paleontology and Rancho La Brea Sections. She is a Member of the Society of Vertebrate Paleontology, Society for Archaeological Sciences, Society for Historical Archaeology, and the Society for California Archaeology.

SELECTED PROJECTS

3807 Broad Street, SESLOC FCU, San Luis Obispo, San Luis Obispo County. Archaeological and Native American monitoring during ground disturbing activities for construction of a new administrative building for the credit union. Provided final compliance report. Principal Archaeologist. 2013

Montclair Place Subdivision, Arroyo Grande, San Luis Obispo County. Paleontological and cultural resources assessment of the proposed 5-acre site. Records search, pedestrian survey, and assessment report. Principal Archaeologist. 2013

Paso Robles Gateway Project, unincorporated San Luis Obispo County. Conducted a technical study to determine the potential effects on paleontological, archaeological and historic resources of the proposed project. Principal Investigator. 2012

Cantinas Camp, Cayucos, San Luis Obispo County. Determined the potential effects on archaeological and paleontological resources within the proposed project site. The proposed project is located off Lynch Canyon Road on the north shore of Nacimiento Reservoir. It consists of the construction of a faith-based performing arts camp. Principal Investigator. 2010

Cayucos Bluff, Cayucos, San Luis Obispo County. Performed archaeological record search, background research, phase I survey, Native American consultation, and prepared final assessment report to the City under contract to the developer. 2009-2010

Updated Cultural Resource Assessment and Mitigation Plan for La Quinta Ranch, plus Testing of Site CA-SLO-2066, San Luis Obispo County. Performed archaeological and paleontological record searches and pedestrian survey, testing of previously-recorded site, collection and identification of several prehistoric artifacts, evaluation of resources, and prepared final assessment report for the County under contract to Kirk Consulting. Principal Archaeologist. 2007

Cold Canyon Landfill 12-Acre Expansion EIR, Arroyo Grande, San Luis Obispo County. Archaeological and paleontological evaluation of expansion plans. Performed paleontological and archaeological record searches, Native American consultation, research, survey and prepared assessment, impact analysis and EIR section for the County. Principal Investigator. 2006-2009

Cultural Resources Testing at 345 to 367 Stimson Avenue (APN 005-133-009), Pismo Beach, San Luis Obispo County. Performed field assessment, excavation of testing trenches, shovel test probes, recovery of artifacts, identification and analysis of historic and prehistoric artifacts, evaluation of resources and prepared final testing report for the City under contract to the developer. Principal Archaeologist. 2007

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

DUSTIN KEELER
Archaeologist and Cross-Trained Paleontologist/GIS Specialist

EDUCATION

2010	Ph.D., Anthropology (Archaeology), State University of New York at Buffalo
2003	M.A., Anthropology (Archaeology), State University of New York at Buffalo
2001	B.A., *magna cum laude*, Anthropology, Arizona State University

SUMMARY QUALIFICATIONS

Dr. Keeler is a qualified archaeologist and cross-trained paleontologist with more than 12 years of experience in cultural resources management. He has experience excavating Pleistocene fossils on Paleolithic sites in France and Belgium and five years of experience working on projects in California and adjacent areas. Keeler has more than 8 hours of paleontology training and experience as a paleontological monitor. He regularly serves as a dual archaeological/paleontological monitor. His background includes field surveys and GIS mapping.

SELECTED PROJECTS

3807 Broad Street, SESLOC FCU, San Luis Obispo, San Luis Obispo County, CA. Archaeological monitoring and coordination with Native American monitor during ground disturbing activities for construction of a new administrative building for the credit union. Archaeological Monitor. 2013

Chuckwalla Valley Emergency Response, Southern California Edison, Desert Center, Riverside County, CA. Cultural resources survey and monitoring to support the emergency removal, replacement and repair of poles damaged or destroyed by a flash flood located on land administered by the BLM and on private land. Assessed the potential for adverse effect to historic properties, per Section 106 of the NHPA, and impacts to cultural resources under CEQA. Archaeological Field Technician. 2013

Eldorado-Ivanpah Transmission Project, Southern California Edison, Eldorado, NV to Ivanpah, CA. Performed archaeological and paleontological monitoring for a project that involves construction of 195 miles of new transmission lines and associated fiber optic lines across BLM and private lands connecting the Ivanpah Solar Project. Archaeological/ Paleontological Monitor. 2012-2013

Cascade Renewable Interconnection Project, Southern California Edison, Sunfair, San Bernardino County, CA. Conducted archaeological and paleontological awareness training for SCE crew. Performed monitoring during ground disturbing activities for installation of new poles, removing and replacing poles, and transferring conductor and facilities to new poles. Archaeological/ Paleontological Monitor. 2013

Supporting Studies for Renewable Energy Development Environmental Assessment (EA), U.S. Army, Yuma Proving Grounds, Archaeological Survey, Yuma AZ. Completed a pedestrian survey of approximately 3,200 acres for a proposed solar renewable energy development project. Field Crew Chief. 2012

Metropole Vault Replacements, Southern California Edison, Avalon, Catalina Island, Los Angeles County, CA. Archaeological monitoring and coordinating with Native American monitors during ground disturbing activities of a 30,000 s.f. APE for replacement of two underground electrical vaults. The site is located in proximity to the original Tongva tribal village on the island. Archaeological/ Paleontological Monitor. 2014

SR 178 at Morning Drive Widening Project, Caltrans District 6, Bakersfield, Kern County, CA. Conducted paleotological mitigation monitoring in compliance with the Preliminary Paleontological Mitigation Plan (PMP) prepared by Cogstone. Sub to TY Lin. Paleontological Monitor. 2012-13

Fulbright Scholar Fellowship, Northeastern State University, Magadan, Russia. Personally created a complete Geographic Information Systems database of archaeological sites in Far Eastern Russia. January-April 2013

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

COURTNEY RICHARDS

Paleontologist and Assistant Field Director

EDUCATION

2011 M.S., Biological Sciences, Marshall University
2006 B.S., Earth and Space Science, University of Washington

SUMMARY QUALIFICATIONS

Ms. Richards is a qualified paleontologist with extensive research, field, and laboratory experience. She serves as Paleontology Supervisor and Assistant Field Director at Cogstone. She supervises field crews, performs paleontological surveys, mapping, monitoring, and sample processing in accordance with project-related paleontological mitigation plans. Ms. Richards has personal expertise in fossil salvage, stratigraphy, fossil preparation, database analysis and identification. She has published papers on dinosaur and marine reptile paleontology research. She is a member of the Society of Vertebrate Paleontology.

SELECTED PROJECTS

Montclair Place Subdivision, Arroyo Grande, San Luis Obispo County, CA. Paleontological and cultural resources assessment of the proposed 5-acre site. Records search, pedestrian survey, and assessment report. Co-Author and Paleontologist. 2013

Integrated Facilities Master Plan Update, Camrosa Water District, Ventura County, CA. Prepared paleontology sections of a technical study in support of an Environmental Impact Report (EIR) that involved evaluation of potential impact, sensitivity mapping and mitigation measures for 19,300-acre district. Proposed projects include potable water reservoirs, pump stations, pipelines and recharge ponds; non-potable water reservoirs, pump stations, pressure regulating stations, and pipelines; and sanitary service facilities including pipelines and a water reclamation facility. Paleontology Technician. 2011-2012

Sunpower Interconnection, Southern California Edison, Rosamond, Kern County, CA. Provided paleontological monitoring, sensitivity training for construction personnel and prepared compliance report. The project involved removal of old power poles and excavation of holes for new power poles for transmission lines that will provide connection to the Antelope Valley Solar Project. Paleontologist/Report Author. 2013

SR 99, Arboleda Drive Freeway Project, Caltrans District 10, Merced, Merced County, CA. Conducted and supervised paleontological monitoring, fossil recovery, fossil preparation, and prepared portions of the monitoring compliance report for the 5-mile long SR 99 expansion project. Some 128 localities and 1667 fossils were recovered in five months of excavation for detention basins. Assistant Field Director. 2012

Regional Express Lanes Network Phase I Project Approval/Environmental Document, Metropolitan Transportation Commission and Caltrans District 4, Alameda, Contra Costa, and Santa Clara Counties, CA Prepared portions of a Paleontological Identification Report (PIR) for a 2,472-acre HOV lane to toll lane conversion project along portions of Interstates 580/ 680/ 880. Report Contributor. 2012-present

Caltrans Fossil Sensitivity Mapping for Central California. Performed geology research for an extensive project to map paleontological sensitivity characteristics for over 3000 miles of proposed construction activities along major freeways in 15 Counties. Paleontology Technician. 2011-2012

California High Speed Rail Project, Bakersfield to Palmdale Segment, Kern and Los Angeles Counties, CA. Participated in five-day paleontological survey of project study area that was determined sensitive for fossils. Paleontology Technician. 2011

State Route 41 Rehabilitation Project, Kettleman City, Kings County, CA. Prepared and identified fossils recovered from construction monitoring project. Paleontology Technician. 2011-2012

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

CHAD KAIMANU JACKSON

Archaeological Monitor

EDUCATION

2005 B.S., Earth Science (concentration in geology/archaeology), Cal Poly State University, San Luis Obispo

SUMMARY QUALIFICATIONS

Mr. Jackson is a qualified archaeologist and crew chief with nine years of experience. He conducts compliance monitoring, performs surveys, mapping, data recovery, testing, excavations, cataloguing, and site recording. He coordinates monitoring activities with Chumash and Salinan Native American monitors, among others. His experience includes surveys and monitoring for energy, water, and park projects along the Central and Southern California coastal region and the Central Valley.

SELECTED PROJECTS

Cambria Emergency Water Supply, Cambria, San Luis Obispo County, CA. Conducted a field survey, including a surface inspection and the relocating of five sites within the project site. The project involves construction of four underground pipelines and three new wells. Ground disturbance for well construction is 40-100 feet in depth in an area sensitive for cultural resources. Archaeologist. 2014

Los Osos Wastewater Project, San Luis Obispo County, CA. Performed data recovery during construction of a new wastewater treatment system including pipelines, appurtenances, pump stations and a water recycling facility. Archaeologist. 2012-1014

Paso Robles WWTP Renovation, Paso Robles, San Luis Obispo County, CA. Conducted monitoring during ground disturbing activities. Archaeological Monitor. 2013

Camp Roberts. California National Guard, Monterey and San Luis Obispo counties, CA. Conducted archaeological data recovery and excavations during ground disturbing activities. Archaeologist. 2012

Residential Development, Pismo Beach, San Luis Obispo County, CA. Conducted monitoring during ground disturbing activities. Archaeological Monitor. 2013

Pacific Gas & Electric, Mendocino and Sonoma Counties, CA. Conducted an archaeological survey and performed monitoring for a transmission line project. Archaeologist. 2012- 2013

North Sky River Wind Energy Project, Tehachapi, Kern County, CA. Performed data recovery during construction activities. Archaeologist. 2012

Twitchell Dam Reservoir Project, Santa Maria, Santa Barbara County, CA. Performed monitoring, mapping, new site identification and recording for this Bureau of Reclamation project that was transferred to the Santa Maria Valley Water Conservation District after construction. The dam captures seasonal floodwaters used to recharge regional groundwater. Senior Archaeological Monitor. 2010-2011

California Department of Parks and Recreation San Luis Obispo Coast District, San Luis Obispo County, CA. Performed surveys, assessments, monitoring, excavations, GIS mapping, site recording, cataloguing for various projects along the Coast district from Oceano north to San Simeon and Lime Kiln including construction of pipelines, trail work, historical restoration, and landscaping; GIS mapmaking for Morro Bay and San Simeon Natural Resource Inventory; GPS data collection, GIS analysis of resources and habitat, working with Chumash and Salinan Tribal members and site conservation management. Archaeological Project Leader and Crew Chief. 2006-2009

APPENDIX B: NATIVE AMERICAN HERITAGE COMMISSION

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

April 29, 2014

Sherri Gust
Cogstone
1518 W. Taft Ave.
Orange, CA 92865

Sent by Fax: (714) 974-8303
Number of Pages: 2

Re: Cambria Emergency Water Supply Project, San Luis Obispo County.

Dear Ms. Gust,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Government Program Analyst

Native American Contac
San Luis Obispo County
April 28, 2014

Judith Bomar Grindstaff
63161 Argyle Road Salinan
King City , CA 93930
(831) 385-3759-home

Salinan Nation Cultural Preservation Association
Gregg Castro, Administrator
5225 Roeder Road Salinan
San Jose , CA 95111
glcastro@pacbell.net
(408) 219-2754

Salinan Tribe of Monterey, San Luis Obispo Counties
Patty Dunton, Tribal Administrator
7070 Morro Road, Suite A Salinan
Atascadero , CA 93422 Chumash
salinantribe@aol.com
805-460-9202
805 235-2730 Cell
805-460-9204

Salinan-Chumash Nation
Xielolixii
3901 Q Street, Suite 31B Salinan
Bakersfield , CA 93301 Chumash

408-966-8807 - cell

Xolon-Salinan Tribe
Johnny Eddy, Council Chairperson
950 Coral Ridge Circle Salinan
Rodeo , CA 94572
831-210-9771

Salinan Nation Cultural Preservation Association
Cultural Resources Coordinator
PO Box 56 Salinan
Lockwood , CA 93932
fabbq2000@earthlink.net

Salinan Nation Cultural Preservation Association
Robert Duckworth, Environmental Coordinator
4777 Driver Rd. Salinan
Valley Springs , CA 95252
dirobduck@thegrid.net
831-578-1852

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Cambria Emergency Water Supply Project, Project # 3017, San Luis Obispo County.

From: info@salinantribe.com
To: Dustin Keeler
Subject: Comments concerning Cogstone Project No. 3017-001, Cambria emergency Water supply Project.
Date: Tuesday, May 13, 2014 4:37:33 PM

Dear Dustin, We have much concern that the proposed project has the potential to impact cultural resources. I personally monitored work near San Simeon Creek a few years ago for the Cambria Community
Services District. They should have a copy of my report with the findings. I am sending you a copy of Gibson's 1994 report prepared for the CCSD many of his recommendations were to avoid or mitigate the sites there. We have also included information we have located on the project area, which explains the Salinan connection to the location as an out post for Mission San Miguel which is Salinan. San Simeon is the Playano Salinan village of Tsilakak where the Salinan have worked and lived for thousands of years not he Chumash. We would request that there be a Salinan monitor on site during all ground disturbing activities in undisturbed and previously disturbed areas.

Xayatspanikan (Thank You),
Patti Dunton, Tribal Administrator for John Burch, Traditional Lead

APPENDIX C: PFYC

FEDERAL POTENTIAL FOSSIL YIELD CLASSIFICATION SYSTEM

The PFYC System was developed by the United States Department of Agriculture (USDA) Forest Service and refined by the BLM (2007). Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of paleontological resources.

Using the PFYC system, geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification is applied to the geologic formation, member, or other distinguishable unit, preferably at the most detailed mapable level. It is not intended to be applied to specific paleontological localities or small areas within units. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class; instead, the relative abundance of significant localities is intended to be the major determinant for the class assignment.

The PFYC system is meant to provide baseline guidance for predicting, assessing, and mitigating paleontological resources. The classification should be considered at an intermediate point in the analysis, and should be used to assist in determining the need for further mitigation assessment or actions.

The descriptions for the classes below are written to serve as guidelines rather than as strict definitions. Knowledge of the geology and the paleontological potential for individual units or preservational conditions should be considered when determining the appropriate class assignment. Assignments are best made by collaboration between land managers and knowledgeable researchers.

CLASS 1 – VERY LOW. Geologic units that are not likely to contain recognizable fossil remains. The probability for impacting any fossils is negligible. Assessment or mitigation of paleontological resources is usually unnecessary. The occurrence of significant fossils is non-existent or extremely rare. This class includes:

- Units that are igneous or metamorphic, excluding reworked volcanic ash units.
- Units that are Precambrian in age or older.

Class 1 Management notes:

1) Management concern for paleontological resources in Class 1 units is usually negligible or not applicable.
2) Assessment or mitigation is usually unnecessary except in very rare or isolated circumstances.

CLASS 2 – LOW. Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils. The probability for impacting vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Assessment or mitigation of paleontological resources is not likely to be necessary. Localities containing important resources may exist, but would be

rare and would not influence the classification. These important localities would be managed on a case-by-case basis. This class includes:

• Vertebrate or significant invertebrate or plant fossils not present or very rare.
• Units that are generally younger than 10,000 years before present.
• Recent aeolian deposits.
• Sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration).

Class 2 Management notes:

(1) Management concern for paleontological resources is generally low.
(2) Assessment or mitigation is usually unnecessary except in rare or isolated circumstances.

CLASS 3 – MODERATE OR UNKNOWN. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential. This classification includes a broad range of paleontological potential. It includes geologic units of unknown potential, as well as units of moderate or infrequent occurrence of significant fossils. Management considerations cover a broad range of options as well, and could include pre-disturbance surveys, monitoring, or avoidance. Surface-disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action, and whether the action could affect the paleontological resources. These units may contain areas that would be appropriate to designate as hobby collection areas due to the higher occurrence of common fossils and a lower concern about affecting significant paleontological resources. This class includes:

• Formations with sporadic known occurrences of vertebrate fossils - often marine in origin.
• Vertebrate fossils and scientifically significant invertebrate or plant fossils known to occur intermittently; predictability known to be low.
• Poorly studied and/or poorly documented formations. Potential yield cannot be assigned without ground reconnaissance.

Class 3 Management notes:

(1) Management concern for paleontological resources is moderate; or cannot be determined from existing data.
(2) Surface-disturbing activities may require field assessment to determine appropriate course of action.

Class 3a – Moderate Potential. Units are known to contain vertebrate fossils or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for hobby collecting. The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.

Class 3b – Unknown Potential. Units exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may uncover significant finds. The units in this Class may eventually be placed in another Class when sufficient survey and research is performed. The unknown potential of the units in this Class should be carefully considered when developing any mitigation or management actions.

CLASS 4 – HIGH. Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface disturbing activities may adversely affect paleontological resources in many cases. The probability for impacting significant paleontological resources is moderate to high, and is dependent on the proposed action. Mitigation considerations must include assessment of the disturbance, such as removal or penetration of protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the surface disturbing action will usually be necessary. On-site monitoring or spot-checking may be necessary during construction activities. This class includes:

• Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
• Areas of exposed outcrop are smaller than two contiguous acres.
• Outcrops from cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.
• Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

Class 4 Management notes:

(1) Management concern for paleontological resources in Class 4 is moderate to high, depending on the proposed action.
(2) A field survey by a qualified paleontologist is often needed to assess local conditions.
(3) Management prescriptions for resource preservation and conservation through controlled access or special management designation should be considered.
(4) Class 4 and Class 5 units may be combined as Class 5 for broad applications, such as planning efforts or preliminary assessments, when geologic mapping at an appropriate scale is not available. Resource assessment, mitigation, and other management considerations are similar at this level of analysis, and impacts and alternatives can be addressed at a level appropriate to the application.

Class 4a – High and exposed. Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two acres. Paleontological resources may be susceptible to adverse impacts from surface disturbing actions. Illegal collecting activities may impact some areas.

Class 4b – High and Unexposed. These are areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

CLASS 5 – VERY HIGH. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation. The probability for impacting significant fossils is high. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be

expected to occur in the impacted area. On-the-ground surveys prior to authorizing any surface disturbing activities will usually be necessary. On-site monitoring may be necessary during construction activities. This class includes:

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
- Areas of exposed outcrop are smaller than two contiguous acres.
- Outcrops from cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.
- Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

Class 5 Management notes:

(1) Management concern for paleontological resources in Class 5 areas is high to very high.
(2) A field survey by a qualified paleontologist is usually necessary prior to surface disturbing activities or land tenure adjustments. Mitigation will often be necessary before and/or during these actions.
(3) Official designation of areas of avoidance, special interest, and concern may be appropriate.

Class 5a – Very High and Exposed. Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two contiguous acres. Paleontological resources are highly susceptible to adverse impacts from surface disturbing actions. Unit is frequently the focus of illegal collecting activities.

Class 5b – very high and unexposed. These are areas underlain by geologic units with very high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has very high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/20080/im_2008-009.html

APPENDIX D: MITIGATION MONITORING PLAN

Archaeology Mitigation Monitoring Plan

Prior to issuance of construction permits, the applicant shall submit for the review and approval of the Environmental Coordinator, the following County-required Archaeological Monitoring and Recovery Plan.

a. List of Personnel involved in the monitoring activities: The principal investigator will be Sherri Gust of Cogstone, a San Luis Obispo County Qualified Archaeologist. Potential Cogstone supervisors and monitors personnel include Chad Jackson and Kacey Hadick. Both have bachelor's degrees and more than two years of experience. Another San Luis Obispo County Qualified Archaeologist with a graduate degree and a minimum of five years of experience as a principal investigator and other qualified supervisors and monitors with bachelor's degrees and a minimum of two years of experience may be substituted with permission of the County Environmental Coordinator.

b. Clear identification of what portions of the project (eg phases, areas of the site, types of activities): There are five previously recorded archaeological resources within the project site. The construction of the above ground pipelines is not anticipated to substantively impact these cultural resources. The proposed location of the Lagoon Fresh Water Injection Well (LIW) is within the boundary of site CA-SLO-378 and is expected have an impact on this site. The Advanced water treatment plant (AWTP) is at the northern edge of CA-SLO-221 and the western portion of the AWTP is within the boundary of site CA-SLO-1373. The construction access road to the LIW area passes through sites CA-SLO-187 and CA-SLO-378. The construction access road to the AWTP passes through sites CA-SLO-1373 and CA-SLO-221 (Figure 10). Grading, trenching and excavations in these areas may adversely impact the sites. Site SLO-1374 is located adjacent to the existing CCSD Water Supply Pipeline and is not expected to be impacted.

c. Description of how the monitoring shall occur: All ground disturbing activities, including vegetation removal, require full time monitoring within the boundaries of the archaeological sites. The archaeological monitor will work closely but safely with heavy equipment to observe the ground surface being cut. The monitor has the authority to temporarily divert equipment to evaluate and/or recover potentially significant archaeological resources.

Prehistoric resources may be observed or recovered from any of the archaeologically sites. Isolated prehistoric resources observed will be collected and isolate site records filed. If prehistoric features are observed, work in that vicinity will halt until the principal investigator retains Native American observers with Chumash heritage to participate in the testing and evaluation of those features. If testing determines that the features meet significance criteria under CEQA, then the principal investigator must submit a data recovery plan to the County Environmental Coordinator which meets all elements of the County Archaeology Phase III Mitigation requirements and obtain approval before implementing the plan.

Isolated historical archaeological resources observed will be collected and isolate site records filed. If historical archaeological features are observed, work in that vicinity will halt until the feature is evaluated. If testing determines that the features meet significance criteria under CEQA, then the principal investigator must submit a data recovery plan to the County Environmental Coordinator which meets all elements of the County Archaeology Phase III Mitigation requirements and obtain approval before implementing the plan.

d. Description of frequency of monitoring (eg full-time, part-time, spot checking): All ground disturbing activities, including vegetation removal, require full time monitoring within the boundaries of the archaeological sites. The schedule will be determined from the construction schedule when it becomes available.

e. Description of what resources are expected to be encountered:

Trinomial (CA-SLO-)	Primary No. (P-40-)	Description
187	187	Prehistoric open village site as indicated by midden deposit
221	221	Multi-component agricultural area showing surface indications of roofing tile fragments, and many lithic artifacts (Mission San Miguel Estancia?)
378	378	Prehistoric large permanent camp site
1373	1373	Multi-components extensive midden deposit with shellfish remains, lithics, groundstone and bone. Proto-Historic adobe and Historic scatters
1374	1374	Prehistoric bedrock mortars and shell fragments

f. Description of circumstances that would result in the "work diversion" at the project site: Discovery of potentially significant resources will result in temporary diversion of machinery to allow recovery.

g. Description of procedures for diverting work on the site and notification procedures: The monitor will have authority to divert grading away from exposed resources temporarily in order to recover specimens. Discovery of potentially significant features will result in halt of work in the immediate vicinity and use of flagging to establish an exclusion zone (excluding heavy equipment) to allow the archaeologist to safely evaluate the find. Features determined to meet significance criteria under CEQA will require work to remain halted until approval for, and implementation of, a data recovery plan is completed. Cooperation and assistance from on-site personnel will greatly assist timely resumption of work in the area of the fossil discovery.

h. Description of monitoring reporting procedures: The principal investigator will prepare monthly progress reports to be filed with the District and the County Environmental Coordinator. The principal investigator will prepare a final report at the conclusion work to be filed with the District and the County Environmental Coordinator summarizing all monitoring and mitigation activities and confirming that all recommended mitigation measures have been met. The report will include a list of specimens recovered, documentation of each site, interpretation of resources recovered and will include all specialist's reports as appendices. If this report cannot be completed within 60 days of conclusion of earthmoving due to time required for identification and interpretation or other causes, the principal investigator will obtain agreement from the District and the County Environmental Coordinator on the revised deadline.

i. Disposition of collected materials: Significant archaeological materials will be accessioned into the San Luis Obispo County Archaeological Society repository. Resources which do not meet significance criteria will be donated for educational purposes.

j. Proposed analysis of results of data recovery and collected materials, including timeline of final analysis results: Artifacts require cleaning, stabilization, identification, cataloging and analysis. The time period necessary for the work will depend on the number of specimens recovered.

Significant archaeological materials recovered will be identified and analyzed by expert archaeologists. A comprehensive catalog including all provenience and identification information will be prepared. Artifact dates of manufacture and use will provide information of time period. Information from the anticipated domestic features will be compared to previously known deposits and interpreted within the framework of current knowledge. If possible, given the data recovered, the local archaeological framework will be revised to include the new discoveries.

All identification and analysis will be complete and the monitoring report submitted to the District and County Environmental Coordinator for review within sixty days of completion of laboratory work including identifications.

k. Project Proponent's Responsibilities: The project proponent is responsible to bear all costs associated with this mitigation plan including preparation of specimens to the curation standards of the repository and curation fees.

l. Research Questions: The prehistoric and historical archaeological materials which may be encountered can contribute to (1) better information on how the four prehistoric sites are related to one another, (2) whether they represent the same or different time periods, (3) better information on later historic uses, and (4) relationship of the area to local missions. Detailed and accurate horizontal location (GPS using UTM) and vertical location (elevation tied to levels)

information is essential. Mapping should utilize a total station or Trimble-type high resolution GPS device for accuracy, rather than hand held GPS.

Figure 11, Cultural Resources Impacts Map, was intentionally omitted.

Appendix D
Groundwater Modeling Report

Cambria Community
Services District

Cambria Emergency Water Supply Project
San Simeon Creek Basin Groundwater Modeling Report

Cambria, California
May 2014

CDM Smith

The information contained in the document titled "Cambria Emergency Water Supply Project San Simeon Creek Basin Groundwater Modeling Report" dated May 2014 has received appropriate technical review and approval. The conclusions and recommendations presented represent professional judgments and are based upon findings from the investigations and sampling identified in the report and the interpretation of such data based on our experience and background. This acknowledgement is made in lieu of all warranties, either expressed or implied. The activities outlined in this report were performed under the supervision of a California Registered Professional Engineer.

Prepared by:

Michael Smith, P.G.
Technical Director

Reviewed and Approved by:

Sava Nedic, PE, PMP, BCEE
Project Manager

Sava Nedic, PE, PMP, BCEE
Project Manager

Contributing Authors

Mike Smith
Mike Hoffman
Mark McCluskey
Sava Nedic
Whitney Treadway

Technical Advisors QA/QC Review

Robert Fitzgerald
Gus Yates, Todd Groundwater

Graphics and Production

Wendy Coyne
Juan Ramirez
Kimberly Scheller

Table of Contents

List of Figures

List of Tables

This page intentionally left blank.

Acronyms/Abbreviations

AF	acre-feet
CCSD	Cambria Community Services District
MGD	million gallons per day
MSL	mean sea level
NAVD 1988	North American Vertical Datum
NOAA	National Oceanic and Atmospheric Administration
TDS	total dissolved solids
USGS	Unites States Geological Survey
VDF	Variable-Density Flow Process
WRIR	Water Resources investigation Report

This page intentionally left blank.

Section 1
Introduction

1.1 General Setting

This investigation is being conducted for the Cambria Community Services District (CCSD), which provides water, and collects and treats wastewater for the town of Cambria and adjacent service areas. The area of specific interest in this investigation is the lower portion of the San Simeon Creek valley, extending about 3.5 miles upstream from the Pacific Ocean. The study area and major features are shown on **Figure 1-1**.

The study area includes areas underlain by a significant alluvial aquifer along San Simeon Creek, including the Van Gordon Creek tributary. Near the headwaters, the creek valley forms a steep, narrow canyon. Along the final three to five miles before reaching the ocean, the valley widens to a floodplain that is up to approximately one thousand feet wide. The floodplain is underlain by the groundwater basin and is flanked by steep hillsides that rise 200 to 800 feet above the valley floor. A fresh water lagoon is present in the lower portion of the valley that serves as an important ecological resource. This lagoon forms behind an ocean beach berm and is supported by groundwater discharge and surface water inflows.

CCSD and agricultural water users along San Simeon Creek use wells in the alluvial aquifer. Groundwater occurs in the alluvial deposits beneath the creek, which drains the western flanks of the Santa Lucia Range in San Luis Obispo County and discharges into the Pacific Ocean. The alluvial deposits form flat valley floors, which are used for irrigated agriculture. The alluvial aquifer is recharged primarily by seepage from San Simeon Creek, which typically flows during the winter and spring rainy season.

The CCSD has a well field consisting of four potable water supply wells located approximately one mile inland from the ocean. They also utilize a series of percolation ponds between the well field and the ocean where secondary treated waste water is recharged back to the aquifer. Pumping during the dry season results in seasonal declines in groundwater levels since production is supported by removal of water from storage in the aquifer when the stream is not flowing.

Numerous private wells are present that irrigate farmlands on flat areas adjacent to the creek bottoms. Native vegetation consists of trees, grass, and shrubs that grow along the creeks and field borders. Grassy hillsides along the sides of the valleys are used for grazing. San Simeon State Park occupies the western extent of the basin and includes a large campground, which obtains its water supply from the CCSD.

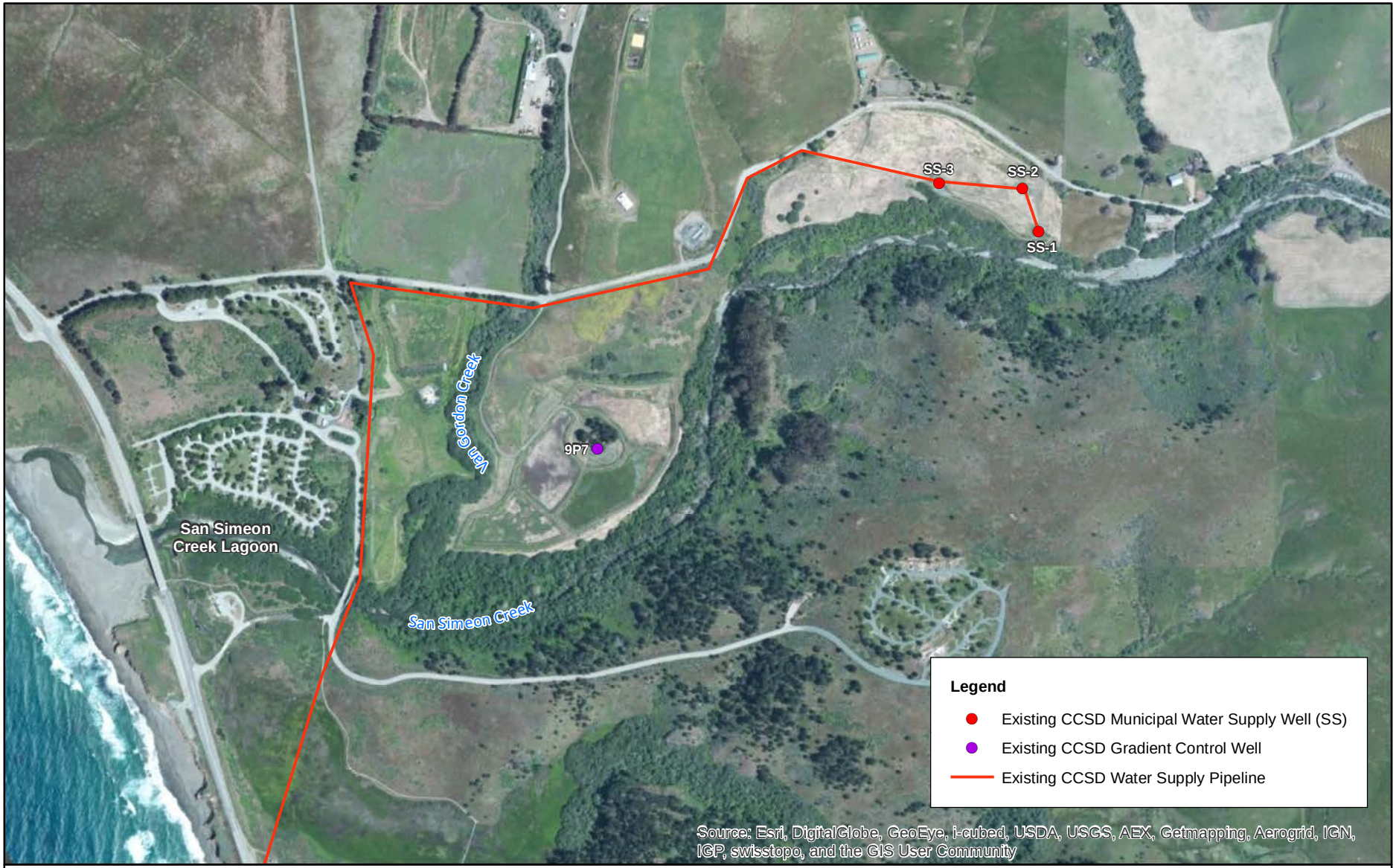
1.2 Study Objectives

Extended drought conditions in the central coastal area of California have persisted over the past year, which have resulted in a limited water supply for the CCSD well field. Studies have been ongoing to identify additional water sources for the CCSD including indirect potable reuse of the percolated secondary effluent. However, the persistent drought conditions have elevated concern on availability of a reliable water supply since water levels continue to decline as aquifer storage is depleted. This groundwater modeling study has been developed to support evaluation of the basin water management alternatives to develop additional water supplies for CCSD to meet the emergency

conditions. The specific objectives of this San Simeon Basin Groundwater Modeling study are provided below.

1. Develop a groundwater model that is consistent with data from the United States Geological Survey (USGS) WRIR 98-4061 model (Yates and Van Konyenburg, 1998) and the 2007 modeling analysis (Yates, 2007) to allow assessment of potential emergency water supply alternatives focusing on recovery of brackish basin water near the current percolation ponds.
2. The evaluation will consider the impacts of vertical flow and density driven flow in the evaluation of alternatives.
3. The evaluation will assess residence times prior to recovery of treated wastewater effluent as part of the alternatives evaluation.
4. The model will evaluate impacts of emergency water supply alternatives on San Simeon Creek, and the fresh water lagoon area.

The evaluation will be based on available existing data, as supplemented by stream elevation survey and select water quality data that are currently being collected.



0 250 500 1,000
Feet

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 1-1
Location of Study Area with Significant Site Features

CDM Smith

ramirezjj O:\51115_USACE-KansasCity\102849\Figure1-1_Location of Study Area with Significant Site Features.mxd 4/28/2014

This page intentionally left blank.

Section 2
Conceptual Model

The basin conceptual model documents the current understanding of the aquifer system at the site and includes the data that are available to support this interpretation. This site conceptual model is based on the 1998 USGS report (Yates and Van Konynenburg, 1998), supplemented by additional data that have been collected since the late 1980s. This conceptual model is used to support development of the groundwater model that will be used for assessment of emergency water supply alternatives. Subsequent sections describe the nature and extent of the aquifer system, sources of recharge and discharge, current aquifer use and a water budget.

2.1 Aquifer System Framework

The aquifer system framework describes the physical configuration of the alluvial aquifer, including its areal extent, thickness and the lithology of the aquifer materials. The alluvial aquifer in the San Simeon valley consists of sands and gravels with interbedded finer grain lithologies filling the bedrock valley of San Simeon Creek and the lower portion of Van Gordon Creek. This alluvial aquifer extends to approximately elevation -120 feet or deeper in its western extent, and likely extends to the off-shore area, since the extent of the bedrock valley was influenced by lower sea level elevations in the geologic past.

Figure 2-1 shows the location of wells and borings for which geologic information is available, with the path of the cross-section provided on **Figure 2-2**, which show information based on boring logs, with generalized interpretation of lithology between the boring locations. The alluvium west of the confluence with Van Gordon Creek contains a larger percentage of fine grain material interbedded with more permeable zones and may act as a confining to semi-confining unit for the deeper zones.

Figure 2-3 provides a geologic map produced by the US Geological Survey (Hall, et. al., 1979). This map shows the extent of alluvial deposits in the San Simeon valley and adjacent areas, along with the bedrock geology. Several faults have been mapped or inferred in the bedrock units, however, the USGS concluded that they do not impact the alluvial deposits, so they are not expected to impact the hydrogeology of the alluvial aquifer (Yates and Van Konynenburg, 1998).

The Hosgri fault zone is located sub-parallel to the coastline is this area and is about two miles off-shore. This zone was identified as seismically active (Yates and Van Konynenburg, 1998). However, due to its distance from the San Simeon valley alluvial aquifer, it is not anticipated to impact the hydrology of the basin.

Bedrock units consist of highly fractured Franciscan rocks that are hydraulically connected to the alluvial basin, however, their permeability is much lower than the alluvial aquifer and the bedrock has a limited role in the hydrology of the basin, providing a limited amount of recharge to the alluvium that is described in a later section.

Figure 2-4 shows the elevation of the bedrock surface that was interpreted from borings in the basin in the 1998 USGS report (Yates and Van Konynenburg, 1998). This bedrock surface forms the lower boundary of the alluvial groundwater system.

2.2 Groundwater Occurance and Flow

The alluvium in the San Simeon basin is saturated, with groundwater near the ground surface at its western extent. During the periods when water is present in San Simeon Creek, groundwater levels are similar to those observed in the creek. The depth to groundwater increases away from the creek, since in many areas of the valley the creek is incised below the adjacent terrace areas.

Groundwater levels decline during the dry periods of the year and in response to pumping. Water levels are mounded in the vicinity of the percolation ponds that are operated by the CCSD. A generalized water table configuration for the winter of 1989 is provided on **Figure 2-5**, showing the down valley flow direction.

The average hydraulic gradient down the valley is about 0.006 ft/ft, with increased gradients in areas where the width of the bedrock valley narrows (Yates and Van Konynenburg, 1998). Water level elevations monitored at wells range from about 52 feet (NAVD 1988) to slightly above sea level at the western extent. Vertical head differences can be observed at two locations, near the shoreline at well 8R3, and at adjacent shallow and deep piezometers at 9N2 and 9N3.

The 8R3 well has one interval screened in bedrock at depth of 130 to 140 feet, and a shallower zone screened in the deep portion of the alluvial aquifer from 92 to 102 feet. Water levels in the two intervals at 8R3 were very similar and do not suggest the presence of a significant gradient between the fractured bedrock and the alluvial aquifer.

Water levels at the 9N2/9N3 location showed a significant downward gradient present, with the shallow well showing an elevation of 18.37 feet, while the deep well had a water level elevation of 8.29 feet (NAVD 1988). The water table elevation at the shallow well is considerably higher than other wells, suggesting that this is a perched interval that is affected by the nearby percolation pond or Van Gordon Creek and not representative of the principal aquifer system. This is consistent with the inter-bedded lithology logged in the adjacent well in the upper 20 feet, where well 9N3 is screened.

A fresh water lagoon is present at the western extent of the valley that appears to be in hydraulic communication with groundwater, since it has water present through most years and has a water level similar to the adjacent well 8R3.

2.3 Hydraulic Properties

Hydraulic characteristics of interest include the hydraulic conductivity, storage coefficient, specific yield and effective porosity. Limited characterization has been conducted in past studies, primarily quantifying hydraulic conductivity using pumping tests at seven wells located along the length of the valley. **Figure 2-6** shows the location of aquifer tests and the hydraulic conductivity that was reported in the 1998 USGS report (Yates and Van Konynenburg, 1998).

Responses of water levels in wells to stream stage changes were also used to estimate hydraulic properties, however, these estimates yield a composite of storage coefficient and transmissivity, so it is difficult to estimate hydraulic conductivity due to the highly variable storage coefficient, which could range from the specific yield to a confined or semi-confined range.

The results of the stream interaction estimates did indicate that the aquifer is highly permeable. The horizontal hydraulic conductivity estimated from pumping tests ranged from 99 to 413 ft/day. The geometric mean of the hydraulic conductivity is 220 ft/day. **Figure 2-7** shows the statistical distribution of hydraulic conductivity values.

The reported storage coefficients in the USGS Study were low compared to typical estimates for an unconfined sand and gravel aquifer. This is likely due to the short term nature of the aquifer tests, use of the pumping well response for analysis and the presence of finer grain interbeds, which would lead to a confined to semi-confined response rather than physical drainage of pore space in the aquifer. Based on the lithology of the aquifer, an estimate of 0.1 to 0.2 is estimated for the specific yield and the effective porosity of the aquifer at the site, based on typical values estimated for this type of aquifer.

Estimating the effective porosity from the specific yield is a conservative approach, since the effective porosity is likely to be higher than specific yield, which is the drainable portion of the pore space. Some moisture will be retained under gravity drainage that will contribute to groundwater flow. A lower effective porosity will result in a higher groundwater velocity, which is conservative for this analysis.

2.4 Boundary Conditions

Boundary conditions describe sources of water inflow and outflow to the basin, and include recharge, subsurface inflow from surrounding bedrock areas, pumping, stream inflows, outflows and seepage, evapotranspiration from groundwater, interaction with the ocean and percolation from wastewater treatment plant effluent disposal ponds. This section describes each of these elements, while the following section presents estimates of each of the water budget components.

2.4.1 Recharge

2.4.1.1 Recharge from Precipitation

Precipitation is estimated using the data from the San Luis Obispo–Poly Station, which was selected for use in the 1998 USGS report (Yates and Van Konynenburg, 1998). Mean annual precipitation for the period 1870–2013 was 21.93 inches. Rainfall increases with distance from the shoreline in this area, estimates increasing to 40 to 50 inches in headwater areas east of the basin of interest.

Figure 2-8 shows the long term precipitation trend near the site, indicating that precipitation has been significantly lower than the long term average for the last decade. The majority of the annual rainfall occurs between November and April. Deep percolation of precipitation past the root zone will recharge the aquifer and only occurs during significant precipitation events when soil moisture is above field capacity and available moisture exceeds evapotranspiration demands.

Most recharge from precipitation occurs in irrigated areas, since the native vegetation areas only meet these conditions during periods of average or greater precipitation. Evaluations during the USGS study period for the 1998 report, using data from 1988 and 1989, indicated no significant recharge occurred in the native vegetation areas (Yates and Van Konynenburg, 1998). This report estimated that the quantity of recharge under average conditions originating from precipitation within the basin at 50 acre-feet (AF)/year, which corresponds to 0.75 inches of recharge, or 3.4 percent of the precipitation.

2.4.1.2 Recharge from Irrigation Return Flows

Irrigated agriculture is practiced within a significant portion of the basin. The 1998 USGS report estimated that 37 percent of the applied water returned to the groundwater system as deep percolation, which is reasonable for the flood irrigation practices in the late 1980s. Since that period, irrigation practices have changed and more efficient sprinkler and drip systems are now used. A return flow percentage of 15 percent of the applied water for current irrigation practices is estimated, based on professional judgment.

2.4.1.3 Lateral Boundary Inflow

An additional source of water entering the system originates as discharge from surrounding fractured bedrock. This term is difficult to determine from field measurements, but was estimated in the 1998 USGS report at 150 AF/year (Yates and Van Konynenburg, 1998). This term was estimated from the contributing tributary areas of bedrock adjacent to the study area and modified downward based on the calibration conducted by the USGS.

2.4.1.4 Stream Channel Seepage

The most significant source of recharge to the aquifer system is seepage from the San Simeon Creek channel during runoff periods. Water levels in the basin recover rapidly with the onset of stream flow in the fall and winter and decline when stream flow ceases in the spring. Stream flows during the 2009 to 2013 time period are shown on **Figure 2-9.** The quantity of recharge from the stream is a function of the period of time that the stream is flowing and the amount of pumping that is occurring in the aquifer.

2.4.1.5 Waste Water Percolation Pond Recharge

Much of the water that is produced by the CCSD is returned after receiving secondary treatment to the lower part of the basin by discharging to a series of four percolation ponds. The quantity of water discharged to the percolation ponds during the period 2009–2013 is shown on **Figure 2-10**. This water infiltrates to the alluvial aquifer except for a small percentage that is lost to evaporation. The average discharge during the 2009 to 2013 period was 0.56 million gallons per day (MGD).

2.4.2 Discharge

2.4.2.1 Municipal Pumping

The CCSD maintains a potable water supply well field in the San Simeon basin that provides a significant portion of the water to the Cambria community. Additional water for the CCSD system is obtained from the Santa Rosa basin. In addition to the water supply pumping, a gradient control well is periodically pumped as needed to maintain an adequate westerly gradient from the CCSD well field toward the percolation ponds to avoid inducing flow of treated wastewater back toward the well field. **Figure 2-11** shows the average monthly pumping rates from the CCSD well field during 2009–2013. The average production rate from the San Simeon well field over this period was 0.51 MGD.

2.4.2.2 Agricultural Pumping

The alluvial aquifer is used for irrigation within the valley. The agricultural pumping during the late 1980s was estimated in the USGS report at 450 AF/year (Yates and Van Konynenburg, 1998). During an update to this analysis in 2007, this production was estimated at 180 AF/year, based on changes in irrigation practices and interviews with water users. (Yates, 2007)

2.4.2.3 Evapotranspiration from Groundwater

Limited evapotranspiration from groundwater occurs in areas where groundwater levels are near the surface in riparian areas near the channel of San Simeon Creek. This term was estimated at 30 AF/year in the USGS report (Yates and Van Konynenburg, 1998).

2.4.2.4 Discharge to Surface Water

Water in the aquifer will discharge to the surface water system during periods when the groundwater levels are higher than adjacent stream levels. This occurs primarily in the lower extent of the basin extending from the location of the percolation ponds to the ocean. **Figure 2-12** shows the locations where water was present in the San Simeon Creek channel during February 2014, indicating that groundwater discharge was occurring in these reaches. Elevations of the water surface (NAVD 1988) are shown on the figure.

These observations were made during a period when there had been no precipitation for multiple months. In addition, there is significant subsurface outflow to the ocean that occurs from the basin. This quantity was estimated by the USGS at 320 AF/year by calibration of their model (Yates and Van Konynenburg, 1998). Mean sea level in this area is 2.82 feet referenced to the NAVD 1988 datum used in this report. Mean seawater level was interpolated between the primary NOAA tidal stations at Port San Luis and Monterey (Yates, 2014 personal communication).

2.5 Water Budget

A basin water budget summarizes the components of inflow and outflow to the aquifer at the project site. The water budget from the 1998 WRIR report is summarized on **Table 2-1** and represents averages for the late 1980s period that was used in the USGS analysis.

Current practices have decreased agricultural pumping and return flows, and the CCSD now uses percolation ponds rather than the spray irrigation that was used in the late 1980s. The net inflows and outflows were balanced using estimates of the uncertain terms, primarily ocean outflow, resulting in an overall net inflow to the basin of 1760 AF/year with an equivalent outflow of the same quantity. The USGS estimates of areal recharge and lateral boundary inflow were retained for the current study, the remaining components were based on updates from the 2007 study (Yates, 2007), and flow records maintained by the CCSD. Components that cannot be measured with available field data, such as the ocean outflow and stream gains and losses were calculated in the model.

Table 2-1 Alluvial Aquifer Annual Water Budget Estimates from 1988 USGS Study

Budget Item	Inflow (AF)	Outflow (AF)	Net flow (AF)
Rainfall recharge	50		50
Stream Seepage	950	-410	540
Subsurface Inflow and Outflow			
Lateral Boundary Inflow	150		150
Ocean Boundary Outflow		-320	-320
Agricultural Water Use			
Pumping		-450	-450
Irrigation Return Flow	170		170
Nonagricultural Water Use			
CCSD Pumping		-550	-550
Rural Pumping		<-10	<-10
CCSD Percolation	440		440
Septic Tanks	<10		<10
Evapotranspiration		-30	-30
Change in Storage			0
Totals:	**1760**	**-1760**	**0**

Note: From Yates(1998)

0 380 760 1,520

Feet

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

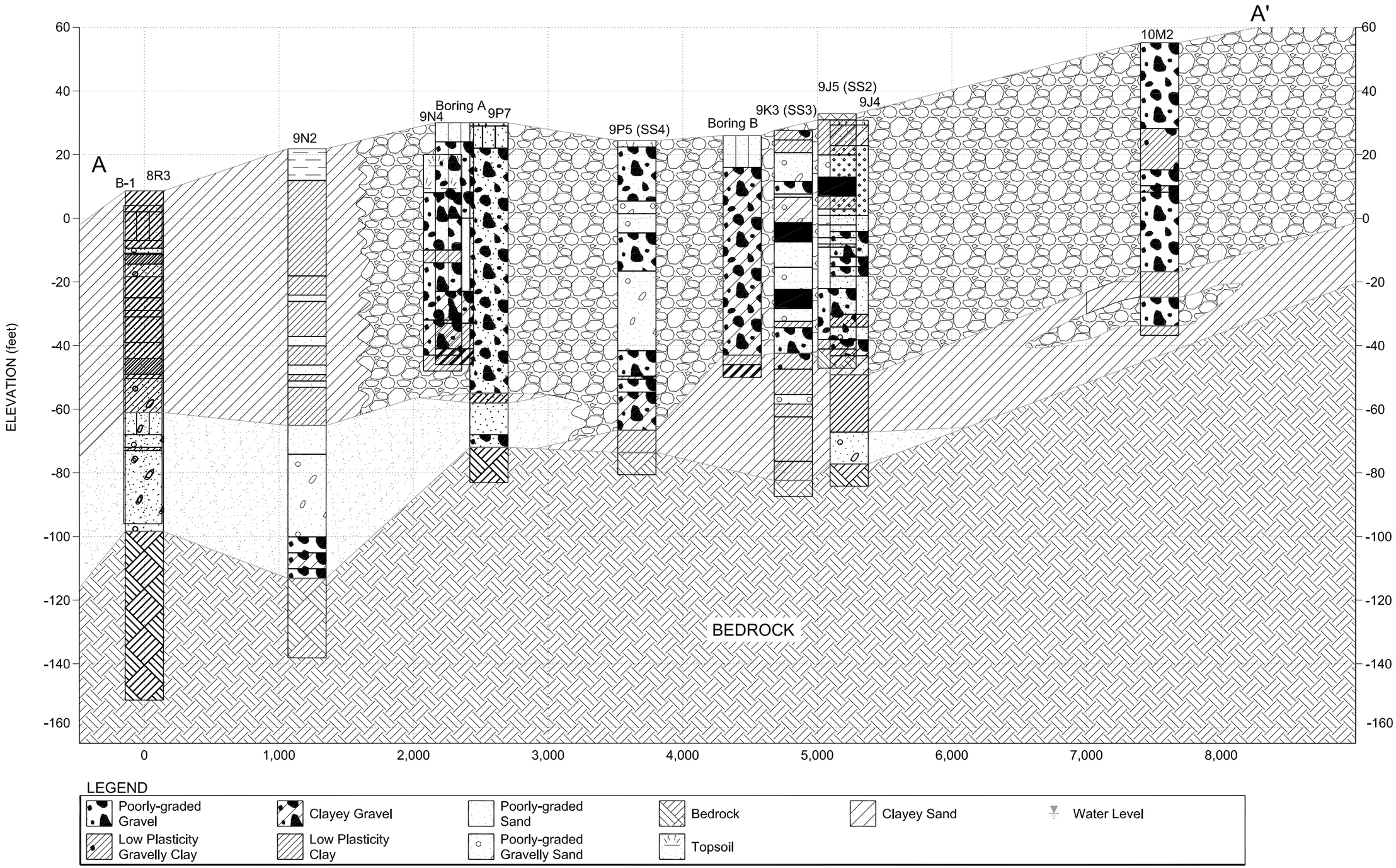
Figure 2-1

Location of Wells and Borings with Lithologic Data

CDM Smith

hoffmanmj L:\51115_USACE-KansasCity\102849\Figure2-1_Location of Wells and Borings with Available Lithologic Data.mxd 4/3/2014

This page intentionally left blank.



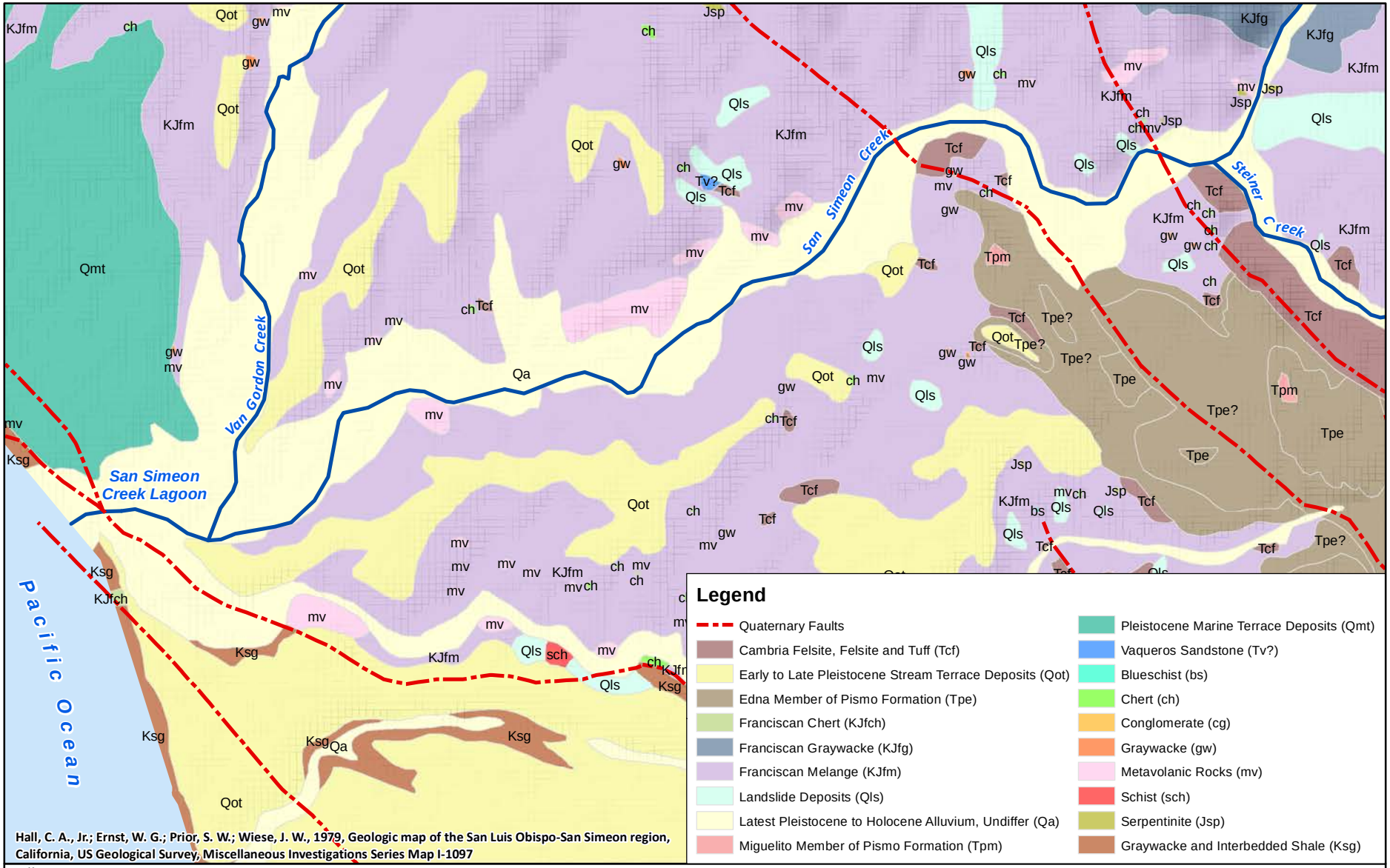
Note: Geologic interpretation based on boring logs developed by the USGS and from Drillers logs.

CDM Smith

Cambria Emergency Water Supply Project
T01: Geo-Hydrological Model

NOT TO SCALE

Figure 2-2
Geologic Cross-Section of San Simeon Valley Alluvium



Hall, C. A., Jr.; Ernst, W. G.; Prior, S. W.; Wiese, J. W., 1979, Geologic map of the San Luis Obispo-San Simeon region, California, US Geological Survey, Miscellaneous Investigations Series Map I-1097

0 600 1,200 2,400
Feet

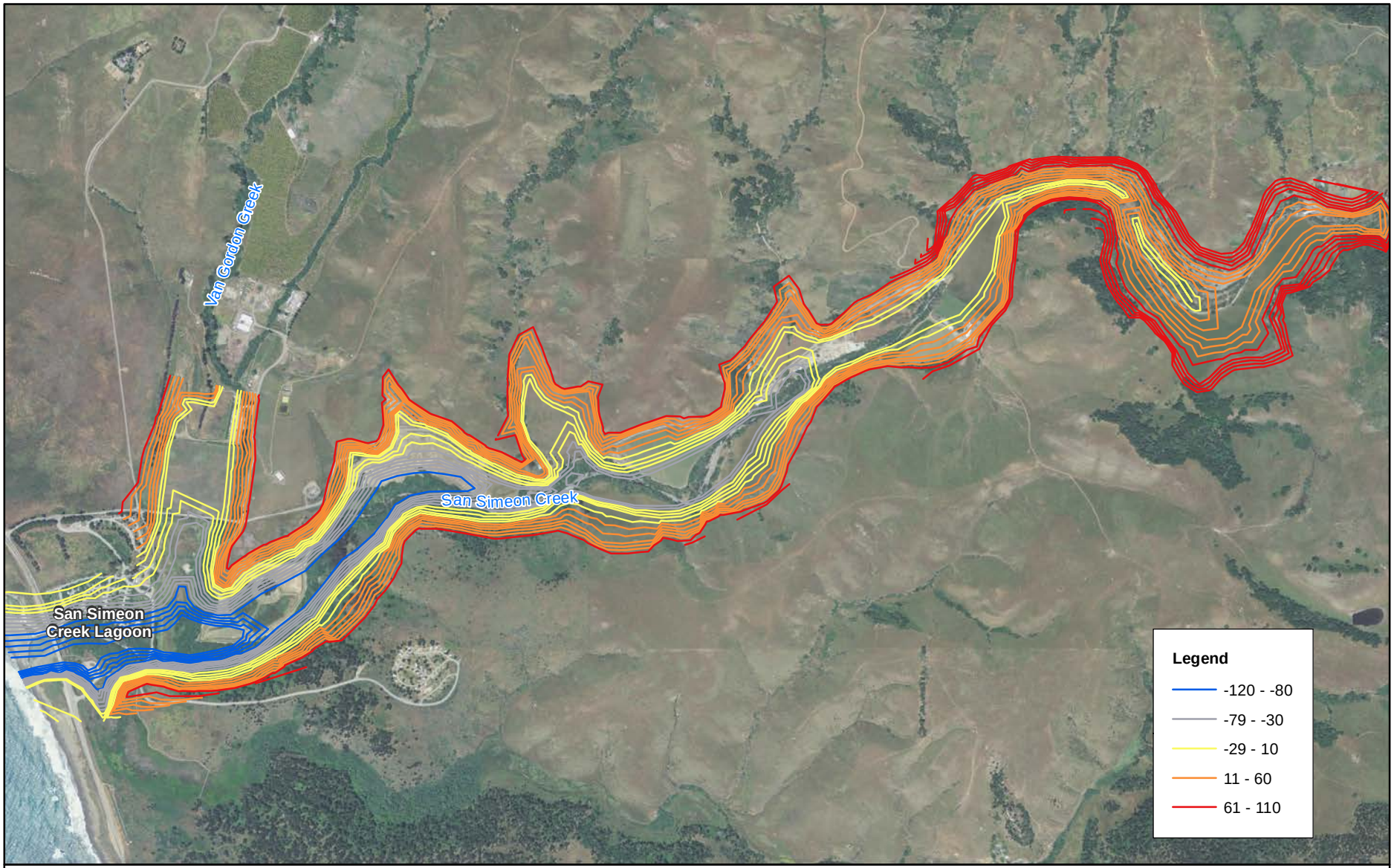
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 2-3
Geologic Map of the San Simeon Creek Area

CDM Smith

ramirezjj O:\51115_USACE-KansasCity\102849\Figure2-3_GeologicMapoftheSanSimeonCreek Area.mxd 4/28/2014

This page intentionally left blank.



0 500 1,000 2,000
Feet

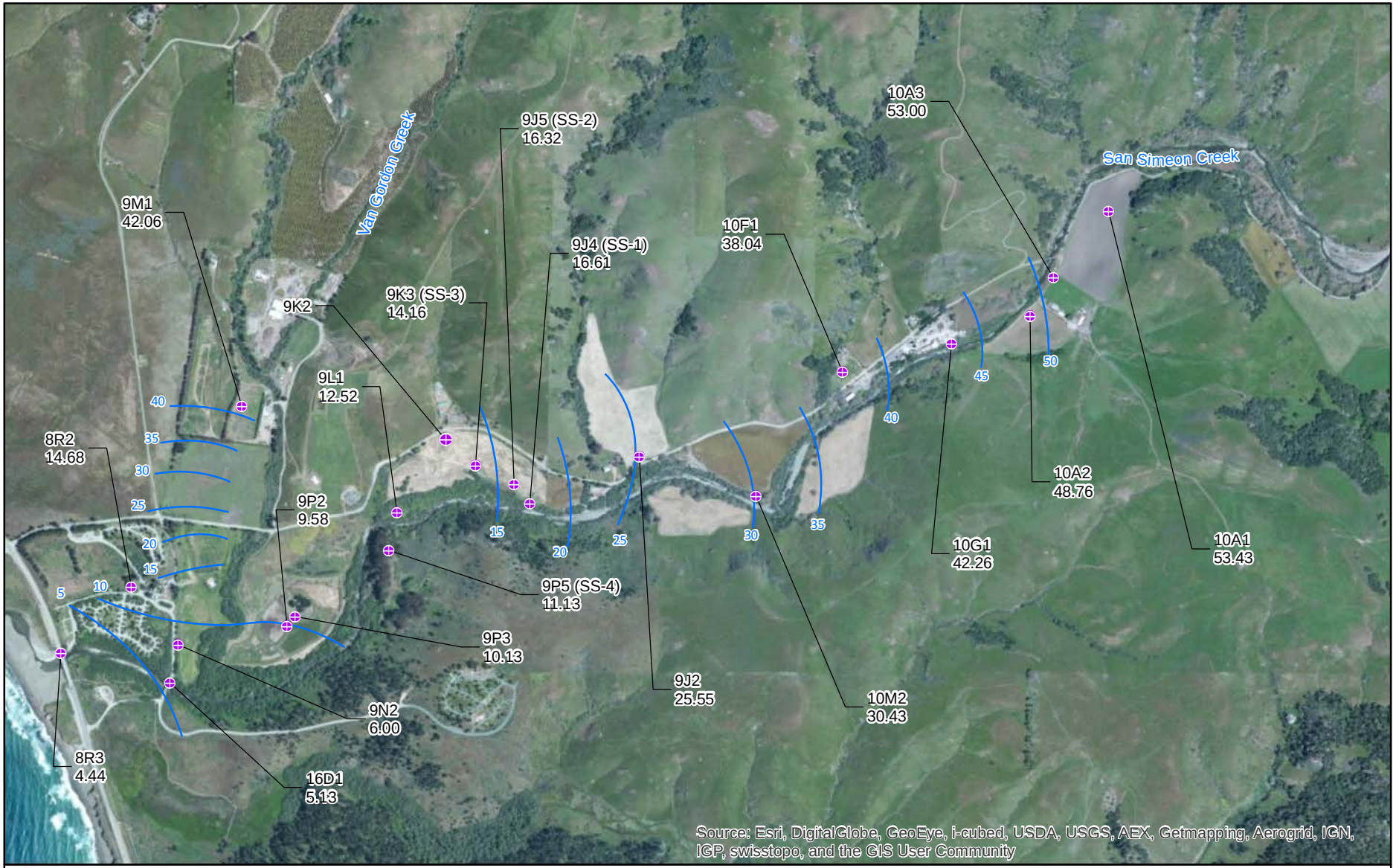
CDM Smith

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 2-4
Interpreted Bedrock Surface Elevation
below the San Simeon Basin Alluvial Aquifer

ramirezjj C:\Users\ramirezjj\Desktop\Figure 2-4_Interpreted Bedrock Surface Elevation.mxd 3/21/2014

This page intentionally left blank.



0 500 1,000 2,000

Feet

CDM Smith

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

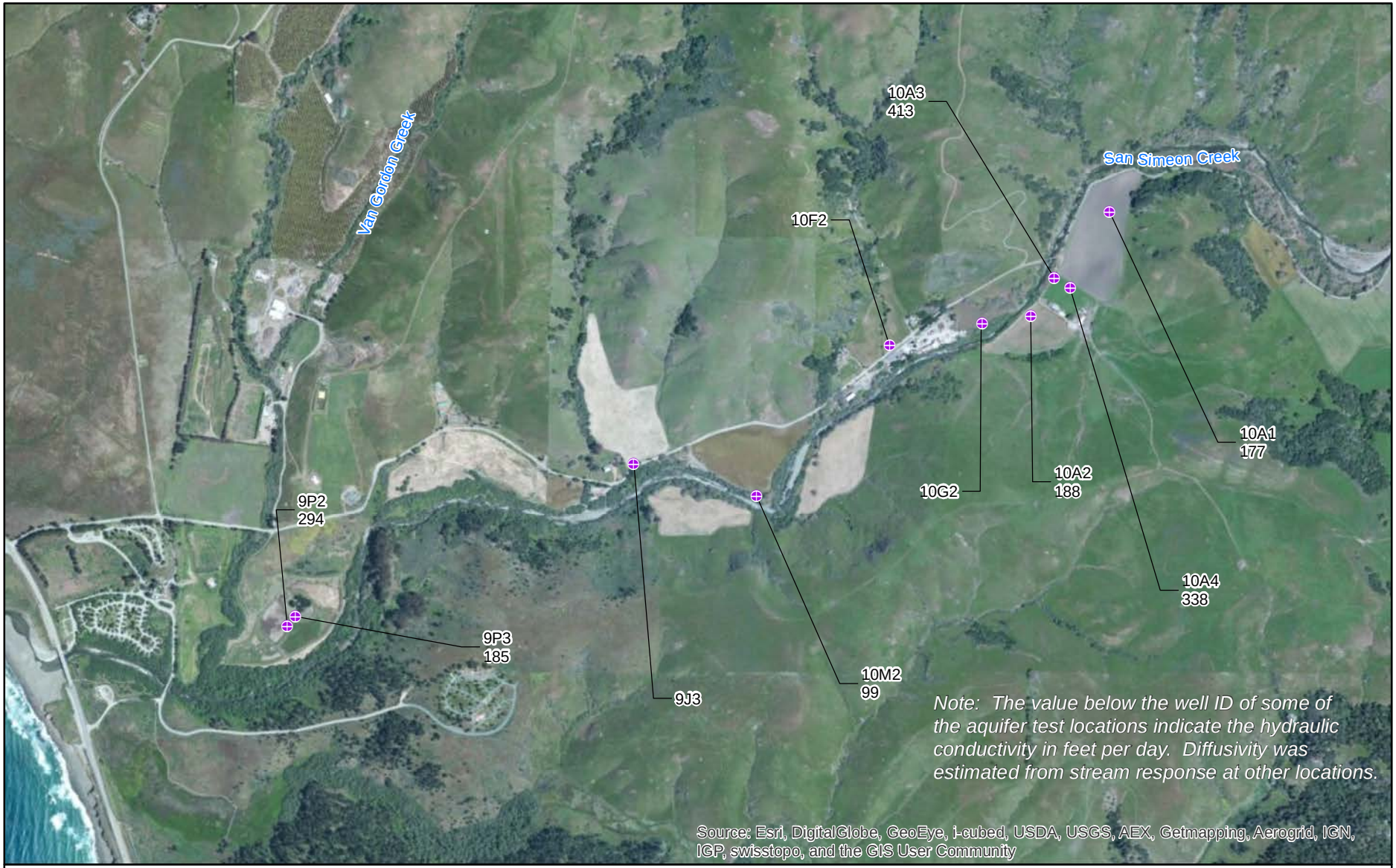
Elevations are in NAVD88 datum.

Figure 2-5

Generalized Water Table – Winter 1989

ramirezjj O:\51115_USACE-KansasCity\102849\Figure2-5_Generalize Water Table – Winter 1989.mxd 4/28/2014

This page intentionally left blank.



0 500 1,000 2,000

Feet

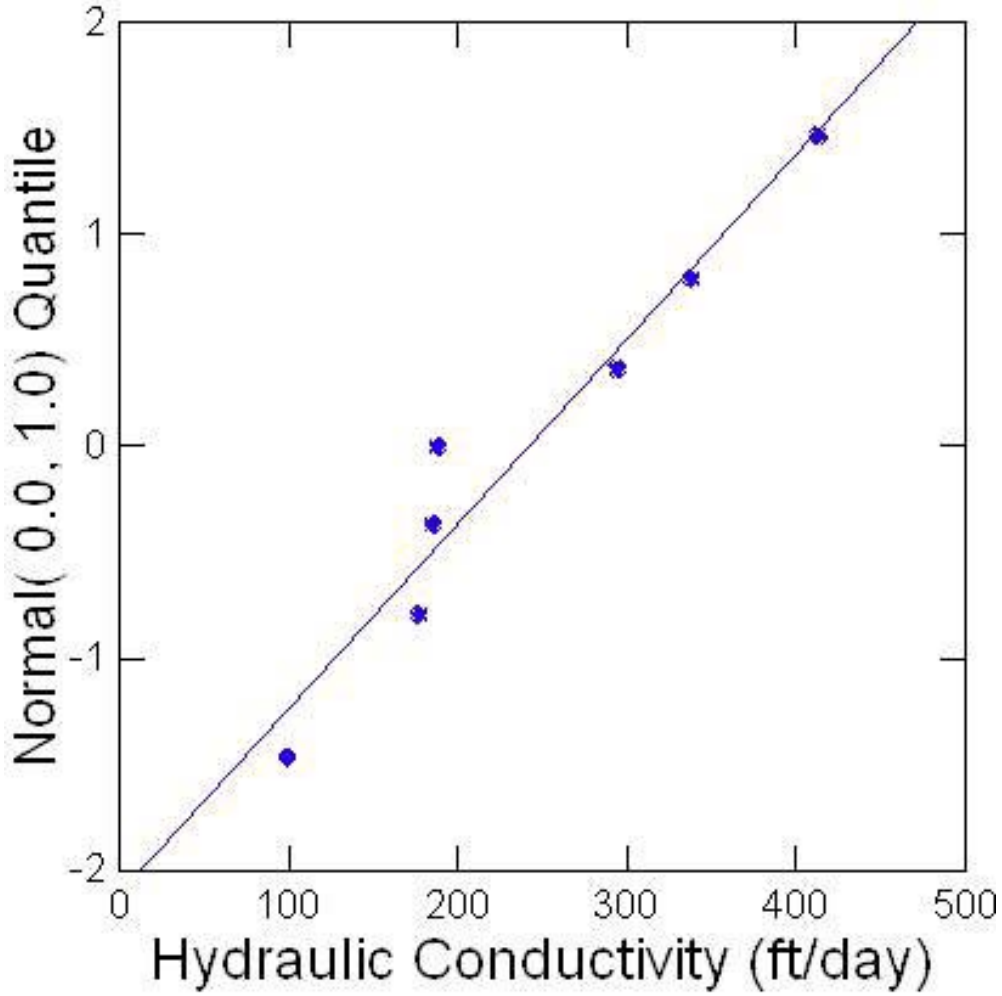
CDM Smith

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 2-6
Location of Aquifer Tests

hoffmanmj L:\51115_USACE-KansasCity\102849\Updated 4.3.14\Figure2-6_Location of Aquifer Tests.mxd 4/3/2014

This page intentionally left blank.



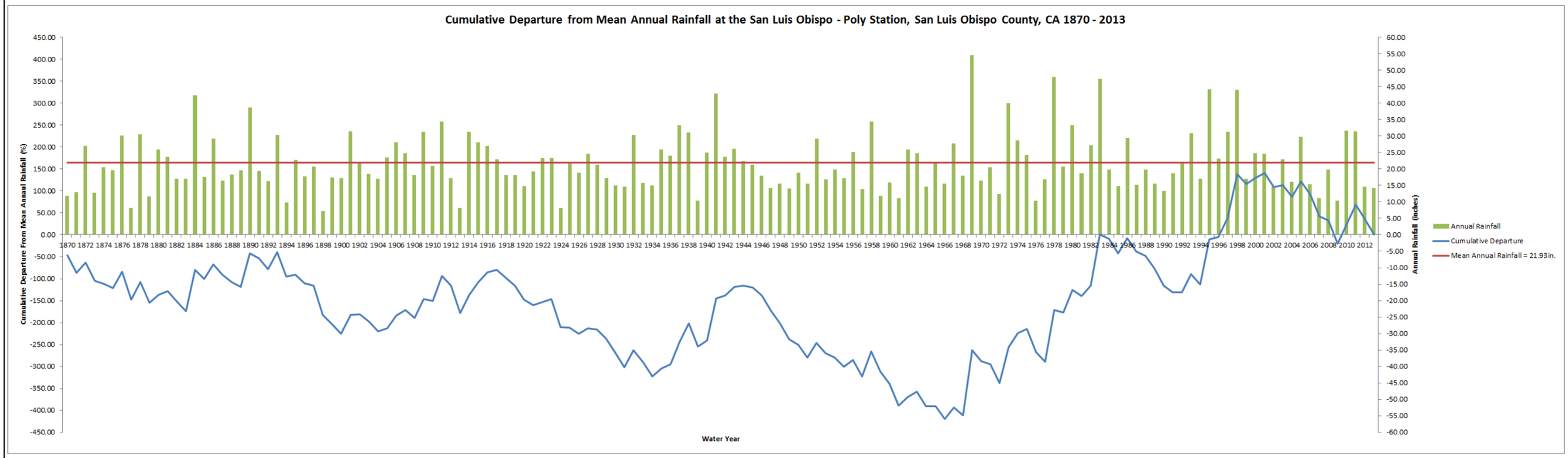
Note: Blue dots represent conductivity value from the 1998 USGS Report.

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 2-7
Hydraulic Conductivity Statistical Distribution

CDM Smith

This page intentionally left blank.

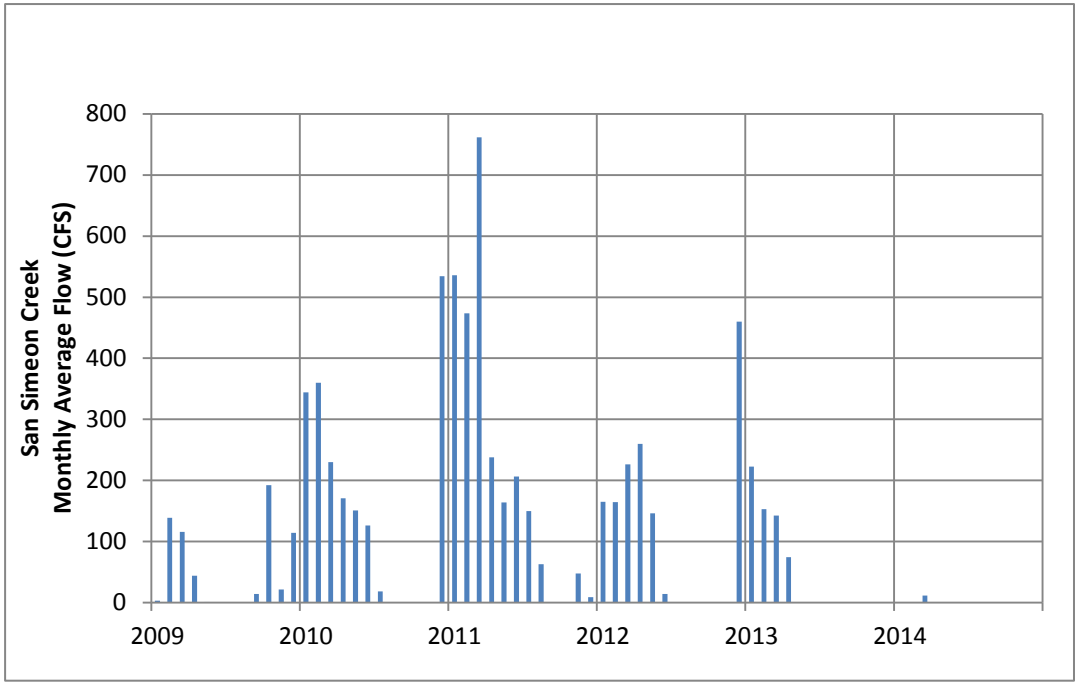


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 2-8
Precipitation and Cumulative Departure
from the Long Term Average at San Luis Obispo - Poly Station

CDM Smith

ramirezjj O:\51115_USACE-KansasCity\102849\Figure2-2_Geologic Cross-Section of San Simeon Valley Alluvium.mxd 4/28/2014



Cambria Emergency Water Supply Project

TO1: Geo-Hydrological Model

Figure 2-9

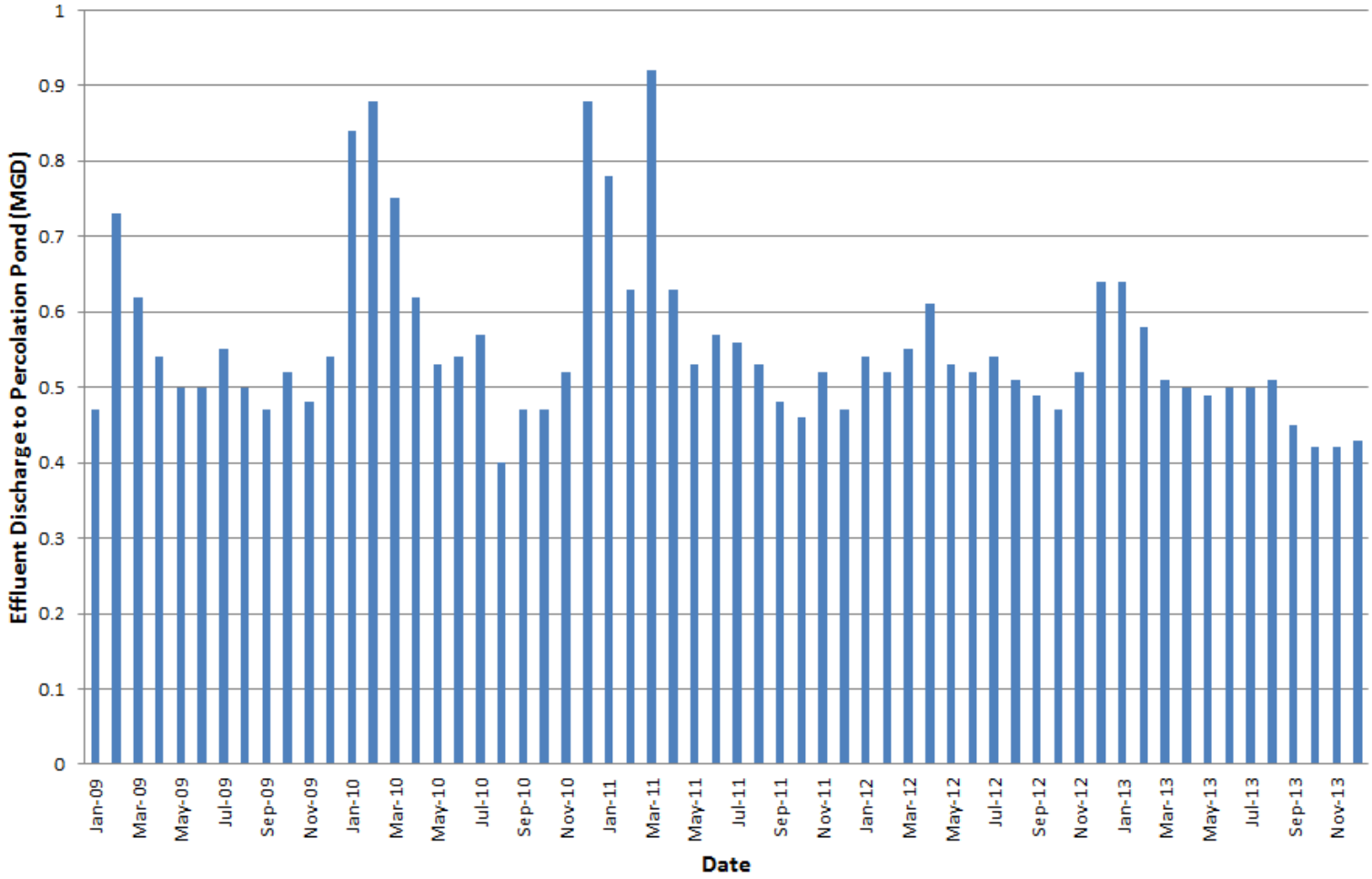
Streamflow in San Simeon Creek and Groundwater Level Hydrographs in the 2009 - 2013 Period

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-6_Location of Aquifer Tests.mxd 3/28/2014

This page intentionally left blank.

Percolation Pond Discharge
2009 to 2013

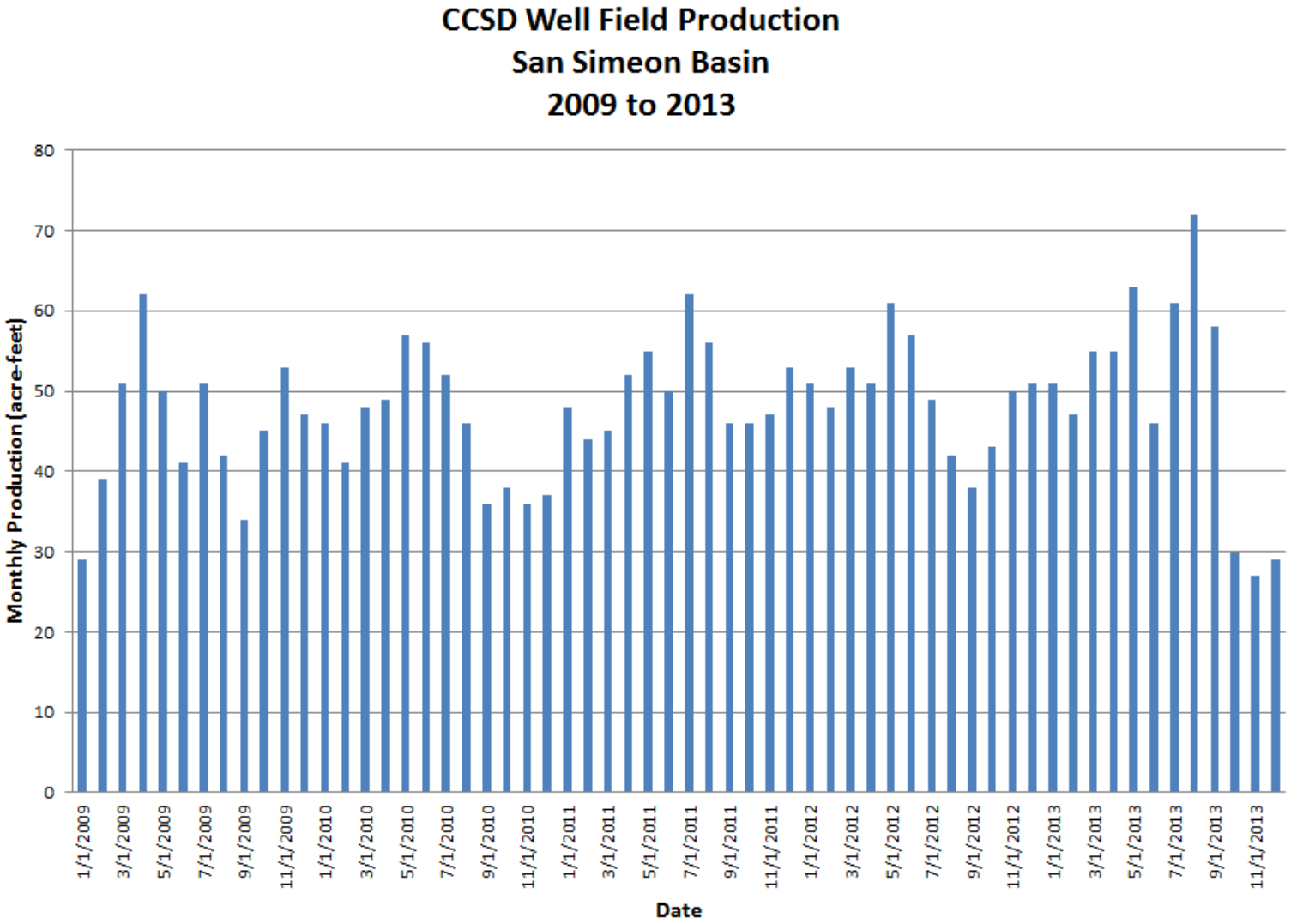


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 2-10
Pecolation Pond Secondary Effluent Discharge 2009 to 2013

This page intentionally left blank.



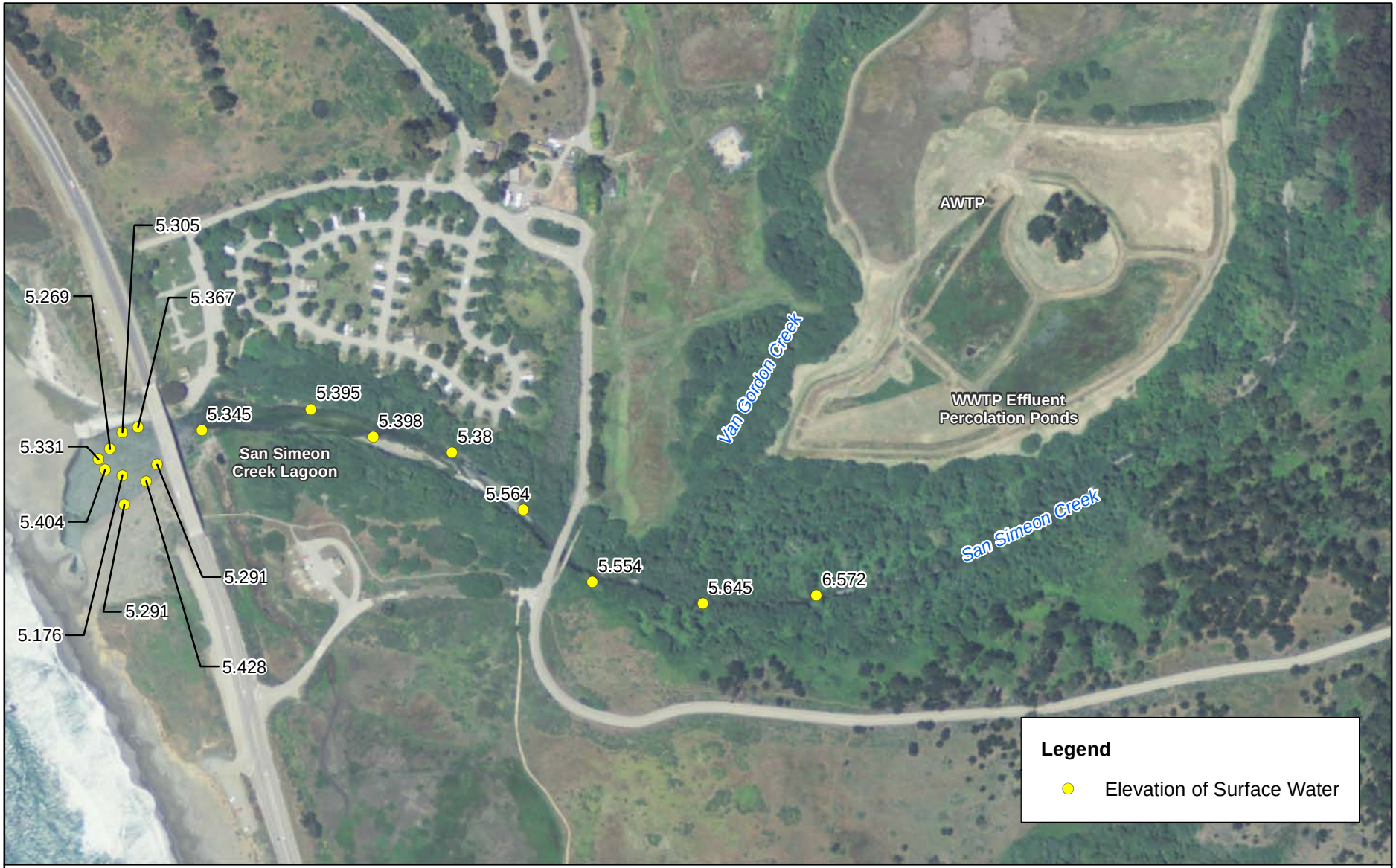
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 2-11
CCSD San Simeon Basin Well Field Production 2009 to 2013

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-6_Location of Aquifer Tests.mxd 3/28/2014

This page intentionally left blank.



Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 2-12
Location of Surface Water - February 2012

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-12_Location of Surface Water.mxd 3/28/2014

This page intentionally left blank.

Section 3
Computer Model Code Selection

This modeling evaluation has been conducted using industry standard, open source, government developed computer programs that are able to mathematically represent the processes of interest. Detailed descriptions of these modeling programs are provided in the cited references and will not be repeated. The specific elements that are used in this application are described in the model development section. In addition, preparation of model data sets and post processing of model output was facilitated through use of a commercial graphical user interface. The selected programs are listed below.

MODFLOW-2000 (Harbaugh, 2000), this finite difference model is the most widely used program for modeling of groundwater flow and serves as the basis for flow calculations in the additional programs that are used in the analysis. This program was developed by the US Geological Survey and includes capabilities for simulation of all of the components of interest in this investigation, except for density driven flow, which is handled in the companion program SEAWAT. MODFLOW-2000 is well documented by the USGS.

MT3DMS. (Zheng, 1999), this code was developed under contract from the US Environmental Protection Agency and the US Army Corps of Engineers. This model is an industry standard model used for simulation of transport of dissolved constituents in groundwater. This code is incorporated into the SEAWAT model.

SEAWAT. (Langevin, 2003), SEAWAT is a modification of MODFLOW-2000 and MT2DMS that allow simulation of groundwater flow, including the effects of variable density and transport of solutes. This industry standard model was developed by the USGS. This model was used to assess the importance of density driven flow for comparison with the primary simulations in MODFLOW and MT3DMS.

This page intentionally left blank.

Section 4
Ground-Water Flow Model Construction

The basin conceptual model described in Section 2 was used to configure a numerical flow model in MODFLOW-2000 and to set up transport capabilities in MT3DMS and SEAWAT. This section describes the configuration of the model framework, selection of simulation packages to represent the site processes and parameter selection.

4.1 Model Grid

A very fine computational grid was defined to represent the aquifer system at the site, since a major concern is the simulation of transport and consideration of vertical movement of recharge or injected water. The alluvial aquifer is represented by 18 vertical layers at the western limit of the site, decreasing to 8 active layers in the eastern portion of the site where the aquifer is thinner and more distant from the area of interest. The horizontal spacing for grid cells was maintained at a uniform size of 40 by 40 feet, resulting in a grid with 120 rows and 460 columns.

The grid was rotated to approximately parallel the trend of the San Simeon basin. Cells outside of the aquifer footprint and in deeper portions of the grid in the eastern part of the model were inactivated. **Figure 4-1** shows the extent of the model, while **Figure 4-2** shows the model grid in the area of primary concern between the CCSD well field and the wastewater percolation ponds.

4.2 Hydraulic Parameters

A groundwater model must define hydraulic characteristics for each active cell in the grid in order to evaluate flow and transport. These hydraulic characteristics include horizontal and vertical hydraulic conductivity and storage characteristics of the aquifer material. A detailed calibration of hydraulic characteristics was done for a model of the basin in 2007 (Yates, 2007) that was used as the basis for initial configuration of hydraulic characteristics for the alluvial aquifer.

This model was configured in a similar manner to leverage the calibration that was done at that time. Minor refinements were incorporated in some areas, however, variation in hydraulic conductivity during the evaluation of calibration did not result in significant improvements, so the hydraulic conductivity distribution remained very similar to the 2007 configuration. A detailed calibration for development of specific yield, which is important in assessing the volume of water in storage, for assessment of groundwater velocities and estimation of residence time of injected fluids was done.

The hydraulic properties were grouped vertically for definition of hydraulic properties, with an upper zone incorporating layers 1–8, and intermediate zone represented by layers 9–12, and a deep zone for layers 13–18. Properties within each of the layer groupings were uniform. The base of the upper zone was set at an elevation-20, or the bedrock elevation for cases where bedrock was above this elevation. The intermediate zone extended from elevation -20 to elevation -60, again truncating at the bedrock contact if it was shallower. The deep zone extended from -60 to the bedrock contact. In cases where the bedrock contact was above the noted elevations, then underlying layers were inactivated in the model. The active extent of the model grid therefore extended from the water table to the bedrock contact.

Figure 4-3, thru **Figure 4-5** show the distribution of horizontal hydraulic conductivity for the upper, middle and deep zones respectively. The distribution of hydraulic conductivity incorporates the conceptual model characteristic of a lower permeability zone in shallow materials in the western extent of the model down-gradient of the confluence of Van Gordon Creek. A constant ratio of horizontal to vertical hydraulic conductivity of 10:1 was used throughout the model domain. The initial specific yield was set to 0.12, with changes that were incorporated during calibration described in subsequent sections.

4.3 Boundary Conditions

Boundary conditions describe characteristics that control inflow and outflows of water to and from the aquifer system. As described in the conceptual model, the primary sources of water entering the system are recharge from stream seepage, infiltration of precipitation and irrigation return flows, waste water percolation and lateral boundary inflow.

The primary discharge from the aquifer includes stream seepage in the western portion of San Simeon Creek, municipal and agricultural pumping and subsurface discharge to the ocean. These boundary conditions are configured in standard packages within MODFLOW-2000, as described below.

Boundary conditions are specified for individual stress periods, which are a duration over which a given stress is assumed to be constant. For this model, the stress periods for both calibration and assessment of alternatives was specified as a calendar month. These stress periods are subdivided during computations into smaller time increments to facilitate the calculations.

4.3.1 Recharge Package

The recharge package in MODFLOW-2000 allows specification of a time variant rate of flow, expressed as a depth of water per unit of time that is applied to the model at the highest active layer. This model package was used to represent the following sources of recharge:

- Recharge from native precipitation,
- Recharge from irrigation return flows,
- Recharge from lateral boundary inflows, and
- Waste water percolation.

Waste water percolation was the only parameter in the recharge package that incorporated time variation, annual averages for the other parameters were used, since transport time through the unsaturated zone will tend to even out the small surface recharge sources. The recharge from native precipitation and irrigation return flows was evenly allocated through the basin, with an estimated 50 AF of recharge from precipitation, and the irrigation return flows estimated at 15 percent of the applied water. This recharge quantity was set to a constant value of 2.05 inches/year. The lateral boundary inflow component, representing subsurface inflows from surrounding bedrock areas was estimated at 150 AF/year (Yates and Van Konynenburg, 1998), and this quantity was distributed to the outermost cells in the model. During drought simulations, described in later sections, these recharge quantities were reduced.

The CCSD maintains records of discharge to the waste water percolation ponds, see **Figure 4-6**, that were used to determine the recharge quantity infiltrating to the aquifer. These recorded quantities were applied to the entire footprint of the ponds. Some consumptive use of this water would occur due to evaporation, however, it is a relatively small percentage of the applied water, so this was not included. Previously presented Figure 2-10 shows the quantity of wastewater that was discharged to the ponds during the 2009 to 2013 period. This quantity of flow was converted to a depth for use in the model, allocating the flow over the entire area of the pond. Actual operations tend to use only a single pond, moving the discharge to different ponds to maintain infiltration capacity.

4.3.2 Stream Flow Routing Package

The stream flow routing package in MODFLOW-2000 is used to simulate the surface water component in the model. This package maintains a mass balance between the stream flow and gains and losses to groundwater. When the groundwater level is below the stream stage, as occurs during the beginning of the runoff season, water will infiltrate from the stream into groundwater. Conversely, during times when the groundwater level is above the stream stage, groundwater will discharge to the stream. This occurs in the lower reaches of San Simeon Creek as a result of operations at the percolation pond.

Water level observations show that groundwater is rapidly replenished when runoff begins in San Simeon Creek. **Figure 4-7** shows the groundwater elevations at wells 9K2 and 9L1 compared with flows in San Simeon Creek demonstrating this rapid recharge. The stream flow routing package is configured to provide little resistance to flow between groundwater and surface water. **Figure 4-8** shows the location of the stream boundary conditions. Channel and water surface elevations were surveyed to obtain accurate information for the model. Flow rates for San Simeon Creek were obtained from a stream gage maintained by San Luis Obispo County located near the CCSD well field. This flow was assumed to be representative of inflow at the upper reach of the model, since during times when the stream is flowing the discharge rates are significantly higher than potential seepage rates. The stream conductance term was set to a high value based on the observed rapid response of water levels to stream flow. No calibration was done for this parameter.

4.3.3 Lake (Fresh Water Lagoon) Package

The fresh water lagoon is highly connected with the groundwater and surface water systems at the site. Flow in San Simeon Creek discharges to the upper extent of the lagoon. When groundwater is higher than the lagoon stage, discharge will occur from the aquifer to the lagoon. Since the berm impounding the lagoon is periodically breached during higher flow periods or storms, low permeability sediment is potentially eroded from the base of the lagoon, resulting in probable high connectivity between the lagoon and groundwater in some areas.

The lake package was configured to reflect a high degree of connection between the lake and groundwater. Figure 4-8 shows the location of the fresh water lagoon and associated streams. An outlet stream was used to simulate conditions when the lagoon discharges to the ocean. The water surface and lagoon bottom was surveyed to obtain accurate location and elevation information. No data were available to allow calibration of leakage parameters for the lagoon. During transport and variable density simulations the stream package was used to represent this feature to maintain compatibility with the model codes.

4.3.4 Constant Head Package

The hydraulic connection with the ocean is simulated using constant head boundary conditions in the off-shore area. The boundary associated with the ocean was simulated using the equivalent fresh

water head to account for the density difference with sea water. For the SEAWAT simulations, the density is internally accounted for in the program. **Figure 4-9** shows the location of the constant head boundaries. The constant head in layer 1 was set over the off-shore portion of the model, while deeper zones were represented as line sources at the western extent of the model. Since sea water is denser than fresh water, the pressure in deeper zones is greater than would be present if the overlying water were fresh. For example, the equivalent fresh water head in the aquifer at a depth of 100 feet in the sea water saturated portion of the aquifer would be 2.57 feet higher.

4.3.5 Well Package

Pumping of groundwater for irrigation and municipal use is simulated using the MODFLOW-2000 well package. This package removes a specified quantity of water that is distributed across model layers corresponding to well screen intervals. The flow was specified proportional to the hydraulic conductivity and thickness of individual layers that correspond to the reported screen intervals.

Estimates of agricultural pumping were developed in the 2007 study based on land use and water user interviews (Yates, 2007). Production records from CCSD were used for the municipal pumping rates. **Figure 4-10** shows the location of pumping wells that were included in the model. Total agricultural pumping occurs during the growing season from June through October, with an average of 180 AF per year of groundwater produced. The CCSD production from the San Simeon basin is limited to 454 gpm (0.635 MGD) during the dry season. The recent pumping was previously presented on Figure 2-11. Well 9P7, located in the percolation pond area, is periodically pumped to maintain a seaward gradient from the well field. However, detailed records of pumping from this well are not available.

4.4 Transport Packages

Analysis of transport of dissolved constituents was conducted using MT3DMS, which uses information from MODFLOW to define flow terms and physical characteristics. The primary additional parameters necessary for transport analysis include effective porosity, which is important in determine groundwater velocity, and dispersivity. Dispersivity is a parameter used to describe the spread of a solute in three dimensions due to small scale variations in groundwater velocity and localized flow directions.

Literature data were used to estimate the dispersivity parameter as a function of transport distance for sensitivity analysis. The selected value for longitudinal dispersivity was 67 feet, 6.7 feet for transverse dispersivity and .67 feet for vertical dispersivity. Effective porosity, which is a measure of the open pore space through which water actively flows, was estimated based on specific yield, which provides a lower limit estimate of the effective porosity.

Simulation of the selected emergency water supply alternative using the variable density package in SEAWAT was also conducted to assess the importance of variable density flow to confirm results of fresh water equivalent head simulations.

4.5 Selection of Calibration Targets

Model calibration is the process of adjustment of model parameters to match model results with field observations. The available information at the site was assessed to identify field measurements that can be used to assess model calibration. The model is configured with known information, as identified in the site conceptual model and in the descriptions provided above.

Parameters in the model that have the greatest uncertainty are selected for adjustment in the process of calibration. The principal data available for comparisons between field measurements and model calculated results are water levels at wells. The CCSD has a comprehensive water level monitoring program in place that records water levels twice per month at available wells. Climatic information was examined to select a period that encompassed a range in rainfall quantity during a period where information on pumping and wastewater discharge was available, along with water level measurements.

The 2001–2002 period was selected for this analysis. **Figure 4-11** shows the location of wells with water level measurement. The water level records were screened to remove wells that had been recently pumped to obtain a data set representative of aquifer conditions for use in the calibration process. This resulted in a total of 411 water level measurements at 13 wells distributed in the San Simeon basin.

This page intentionally left blank.

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 4-1
Model Grid

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.

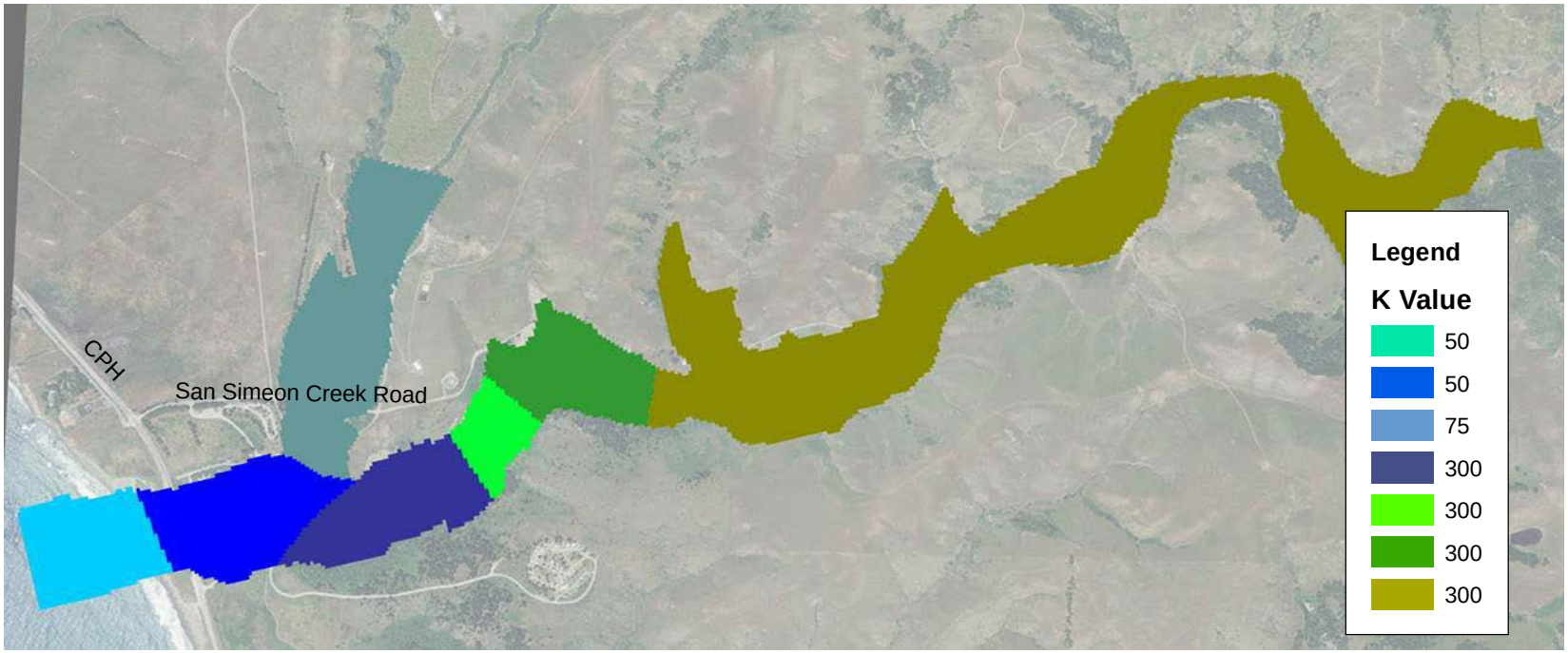
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 4-2
Detail Area Showing Model Grid

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.



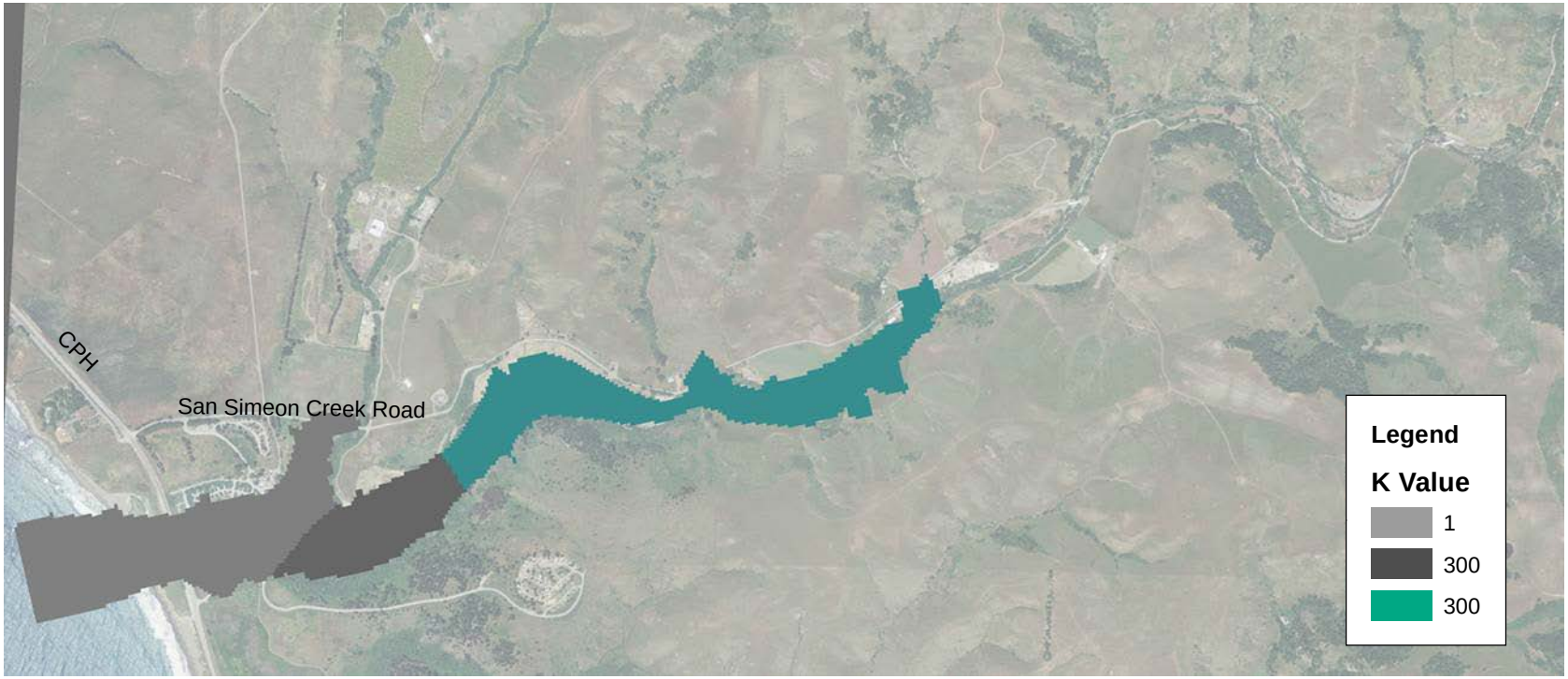
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 4-3
Upper Zone Hydraulic Conductivity Distribution

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-6_Location of Aquifer Tests.mxd 3/28/2014

This page intentionally left blank.



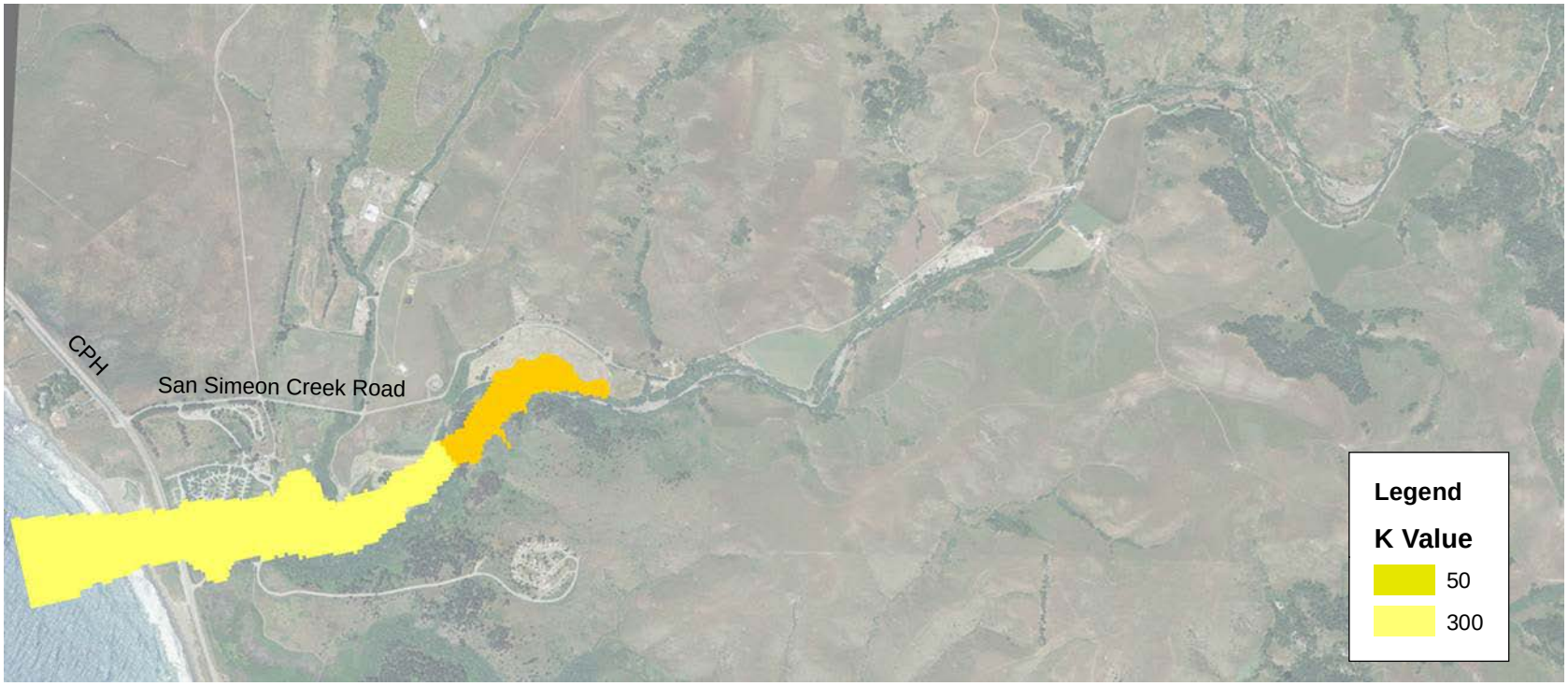
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 4-4
Middle Zone Hydraulic Conductivity Distribution

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-6_Location of Aquifer Tests.mxd 3/28/2014

This page intentionally left blank.



Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 4-5
Deep Zone Hydraulic Conductivity Distribution

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-6_Location of Aquifer Tests.mxd 3/28/2014

This page intentionally left blank.

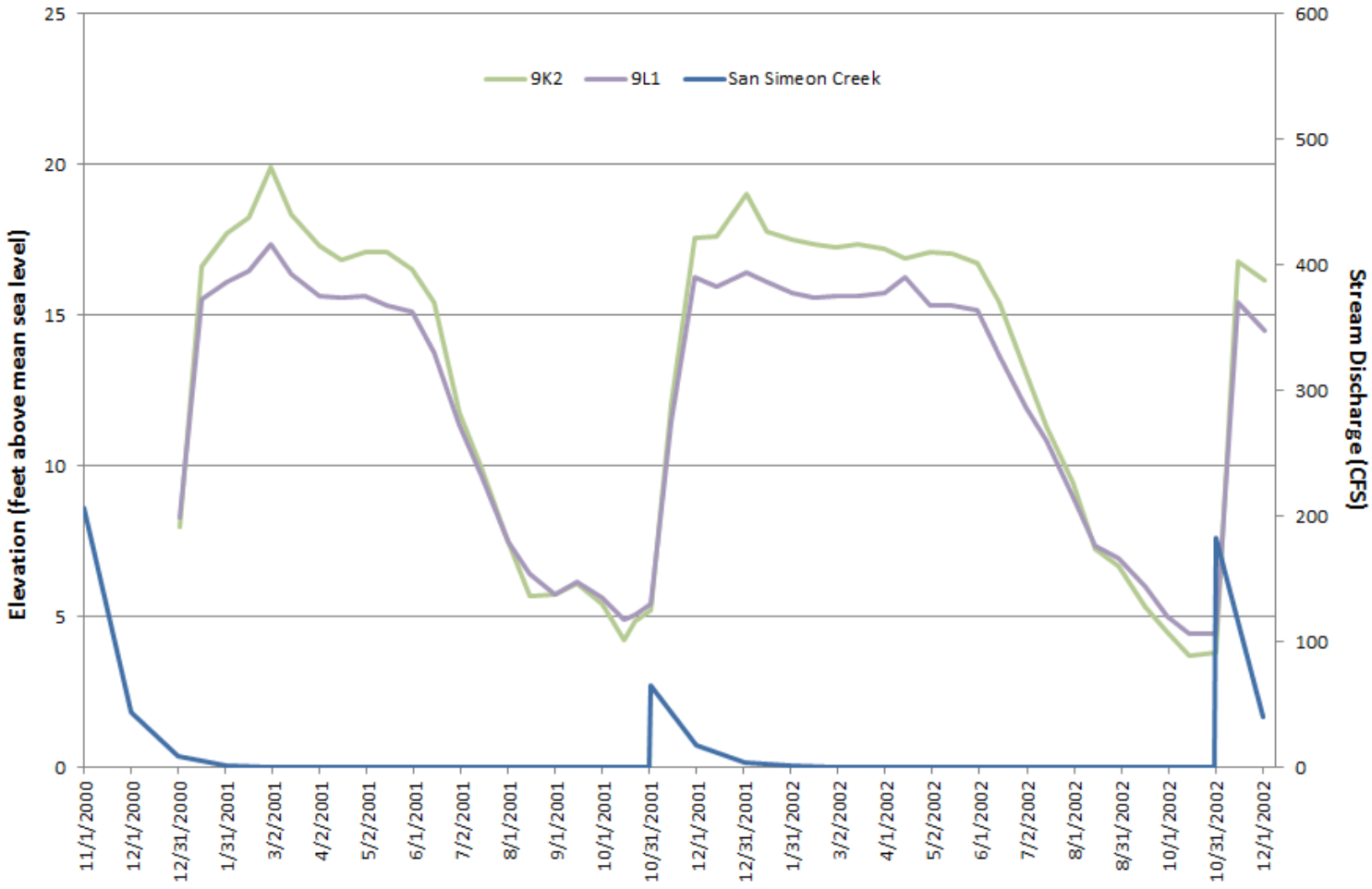
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 4-6
Location of Wastewater Percolation Ponds

CDM Smith

schellerka K:\51115_USACE-KansasCity\102849\Figure4-6_WastewaterPerchlorationPonds.mxd 4/3/2014

This page intentionally left blank.



Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 4-7
San Simeon Creek, 9K2 and 9L1 Hydrographs

This page intentionally left blank.

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

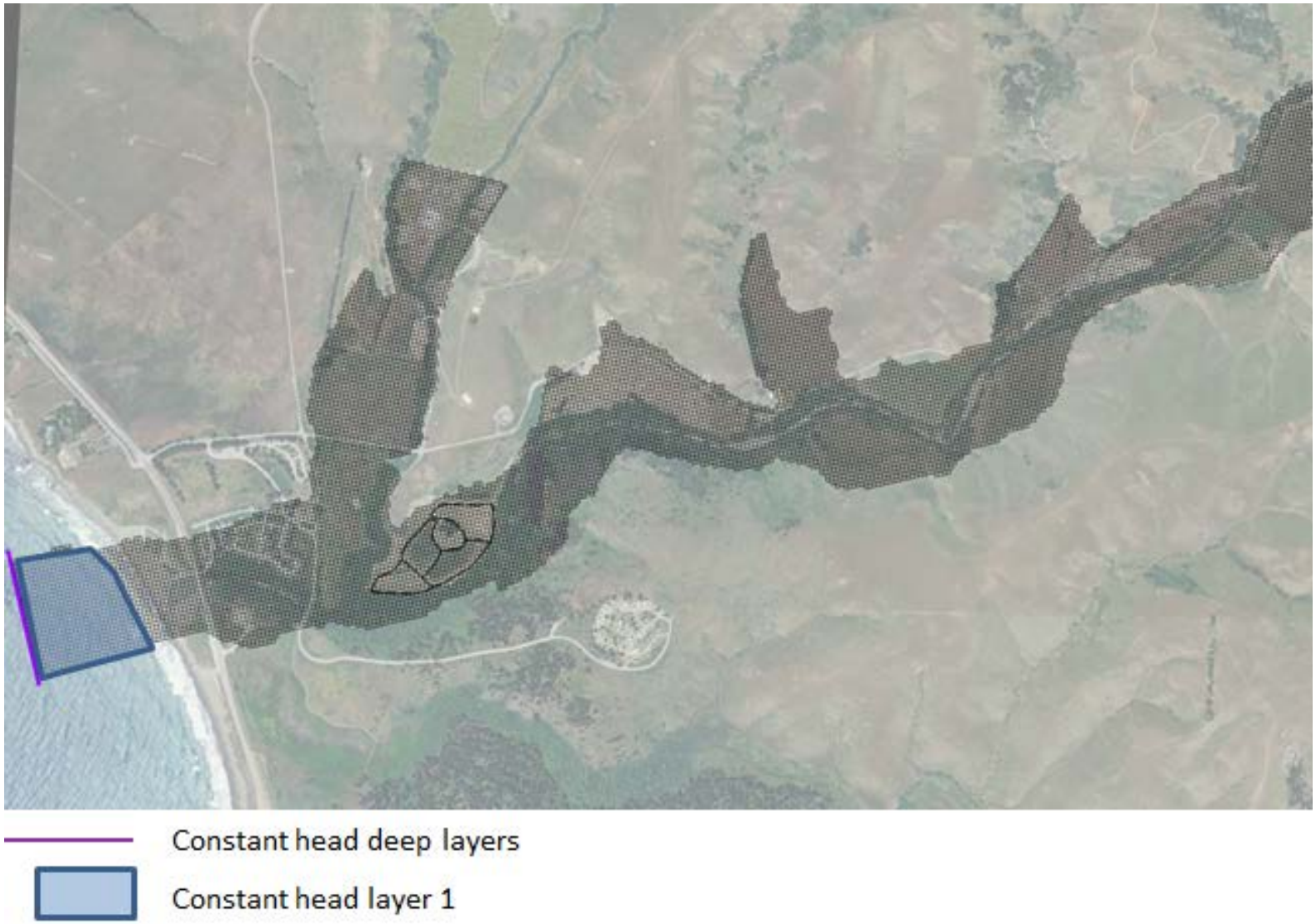
Figure 4-8

Location of Stream and Lake Boundary Conditions

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-6_Location of Aquifer Tests.mxd 3/28/2014

This page intentionally left blank.



Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 4-9
Location of Constant Head Boundary Conditions

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-6_Location of Aquifer Tests.mxd 3/28/2014

This page intentionally left blank.

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 4-10
Location of Pumping Wells

CDM Smith

ramirezjj O:\51115_USACE-KansasCity\102849\Figure4-10_LocationPumpingWells.mxd 4/28/2014

This page intentionally left blank.

0 250 500 1,000
Feet

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 4-11
Location of Wells with Water Level Measurements

CDM Smith

ramirezjj O:\51115_USACE-KansasCity\102849\Figure4-11_WellswWaterLevelMeasurements.mxd 4/28/2014

This page intentionally left blank.

Section 5
Calibration

5.1 Model Calibration

A well calibrated model was developed in 2007 (Yates and Van Konynenburg, 1998) that was used as the basis for development of the current model. The groundwater flow model was calibrated by identifying sensitive characteristics with the greatest uncertainties, and varying those parameters systematically within this range of uncertainty to obtain a reasonable match between field observations and model simulated results. Hydraulic characteristics have the greatest uncertainty, since initial estimates are made at a limited number of locations, using a variety of testing methods. The initial distribution of hydraulic conductivity from the 2007 provided a reasonable match to field observations and was largely retained for this model. Additional calibration was conducted for specific yield, due to its importance for this project.

Conditions for the 2000 to 2002 period for pumping and recharge were configured from the site data and used to simulate the corresponding period. Since stream-flow occurred during 2000, prior to the formal calibration period, stable conditions prevailed in the model for the 2001 and 2002 periods that were used for the calibration. Simulations were run varying hydraulic characteristics and no significant improvement was obtained by changing hydraulic conductivity from the configuration consistent with the 2007 model.

Figure 5-1 shows a sensitivity analysis for variation of specific yield, which indicates a minimum error measure (mean of absolute value of residuals) was obtained at a specific yield of 0.16. The current model has considerably greater discretization to facilitate the transport analysis, but retains many of the characteristics of the 2007 model. A significant update included the incorporation of surveyed elevations for stream channels and the lagoon area.

5.2 Calibration results

Figure 5-2 provides an overall comparison of the final calibrated model results for corresponding field measurements. This figure plots model calculated water levels versus the field measurements for the corresponding locations and times. The 45 degree line shows a perfect agreement between the model and field measurements, while the actual scatter around this line represents the difference between modeled and measured conditions. This difference is the residual. **Figure 5-3** shows a histogram of the residuals (modeled – measured) for the calibration data set.

Several statistical measures of residuals were computed to summarize the ability of the model to represent field conditions. The mean residual value (Σ(modeled – observed)/n) was -0.48 feet, with a standard deviation of 1.72 feet. The median residual value was -0.2 feet. The range in water levels observed in the data set was from 5.4 to 57.8 feet. A standard measure of calibration is given by the RMS error/ data range, which should be less than ten percent. The RMS error in the calibration data set is 1.78, yielding a value for RMS error/data range of 3.4 percent, which meets the acceptance criteria.

Another comparison measure for the calibration is comparisons of observed water levels and modeled water levels plotted as hydrographs at individual wells. These hydrographs are available at the locations previously shown on Figure 4-11**. Figures 5-4** through **Figures 5-15** provide hydrographs from the eastern portion toward the western limit just upgradient of the fresh water lagoon.

The irrigation wells in the eastern portion of the basin typically show the greatest residuals, particularly during the later portion of 2002. This may be due to overestimation of the quantity of lateral boundary inflow or underestimation of the quantity of pumping in the upper basin. These wells are upgradient of the area of primary concern where water supply alternatives will be implemented. The area from immediately upgradient of the CCSD well field to the fresh water lagoon show very good agreement between the model and observed water levels. Limited data were available in the upper reaches of Van Gordon Creek. However, inconsistencies between estimated pumping and responses at the single well with periodic measurements indicate that a reliable calibration of this drainage is not possible. This area also has minimal interaction with the area of interest due to the lower permeability and limited groundwater flow.

The model calibration is acceptable for use in the assessment of alternatives.

5.3 Water Budget

The water budget for the model for the 2001–2002 period is summarized in **Table 5-1.** The components that are specified input values are in a bold font on this table. A negative value, (in parenthesis), indicates a net removal from the aquifer, while a positive is an inflow to the aquifer.

Table 5-1 Summary of Water Budget Components for 2001-2002 Calibration Period

Component	Annual Volume (AF)
Storage	(315)
Ocean Boundary	(251)
Recharge	**881**
Stream Seepage	806
Fresh Water Lagoon Seepage	(103)
Well Pumping	**(1015)**
Difference	2

During the calibration period, the sources of recharge, including precipitation recharge, irrigation return flows, percolation pond infiltration, lateral boundary inflow and seepage from San Simeon Creek, was 1687 AF/year. The primary outflow from the aquifer was associated with pumping for municipal and agricultural use. Outflows of groundwater to the ocean and to the fresh water lagoon were 354 AF/year, with a decrease in storage of 315 AF/year during this period.

On a long-term average basis, the change in storage is expected to be negligible, since the basin is recharged each season from stream seepage. The water budget components differ from the 1988-1989 conditions simulated in the USGS report, since many of the model inputs, including stream flow duration and pumping rates were updated.

5.4 Sensitivity Analysis

A sensitivity analysis was conducted assessing sensitivity to specific yield and to hydraulic conductivity. As noted above, specific yield was a sensitive parameter and a value of 0.16 was selected since this resulted in the minimum RMS error. A sensitivity run was also conducted to assess the impact of decreasing hydraulic conductivity throughout the model by 20 percent. This sensitivity test showed that when the hydraulic conductivity was decreased by 20 percent, the average absolute value of the residuals increased by 16 percent compared to the selected calibration values.

5.5 Model Uncertainties and Limitations

All mathematical models are simplified representations of very complex natural systems. The model is configured using a limited number of borings to assess the distributions of lithologies in the subsurface. Factors such as the lateral boundary inflow, connection with the ocean, configuration of the aquifer west of the shoreline and other factors are uncertain and have no direct field data for their characterization. The model provides a reasonable approximation of the aquifer response during calibration periods and provides a tool for assessing alternatives. The model should be refined in the future when significant changes in water use in the basin occur after implementation of the selected emergency water supply alternative to refine operational parameters.

This page intentionally left blank.

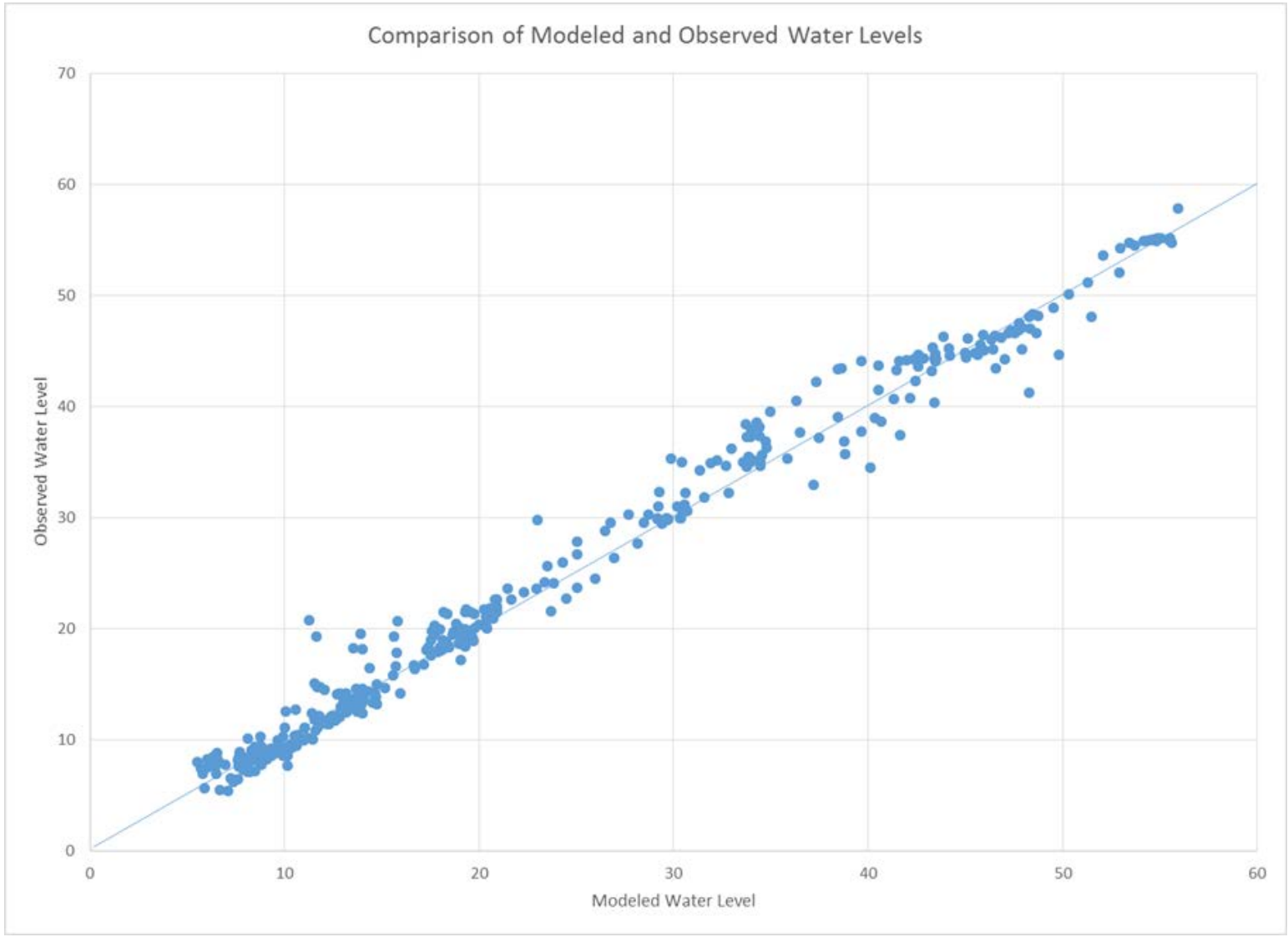
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 5-1
Specific Yield Sensitivity Analysis

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-6_Location of Aquifer Tests.mxd 3/28/2014

This page intentionally left blank.



Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

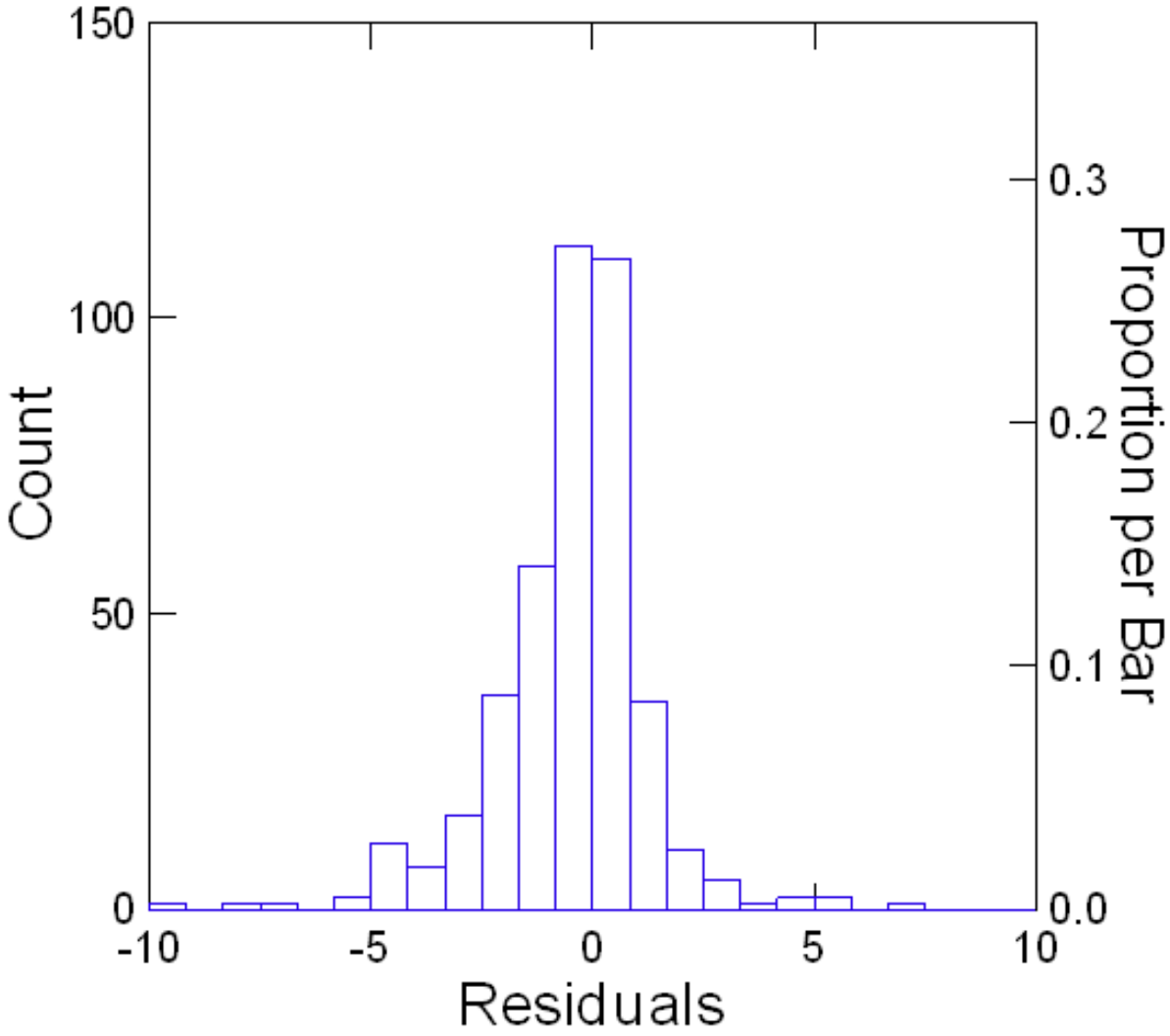
Figure 5-2

Comparison of Modeled and Field Measured Water Levels During the 2001 to 2002 Calibration Period

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 2-6_Location of Aquifer Tests.mxd 3/28/2014

This page intentionally left blank.

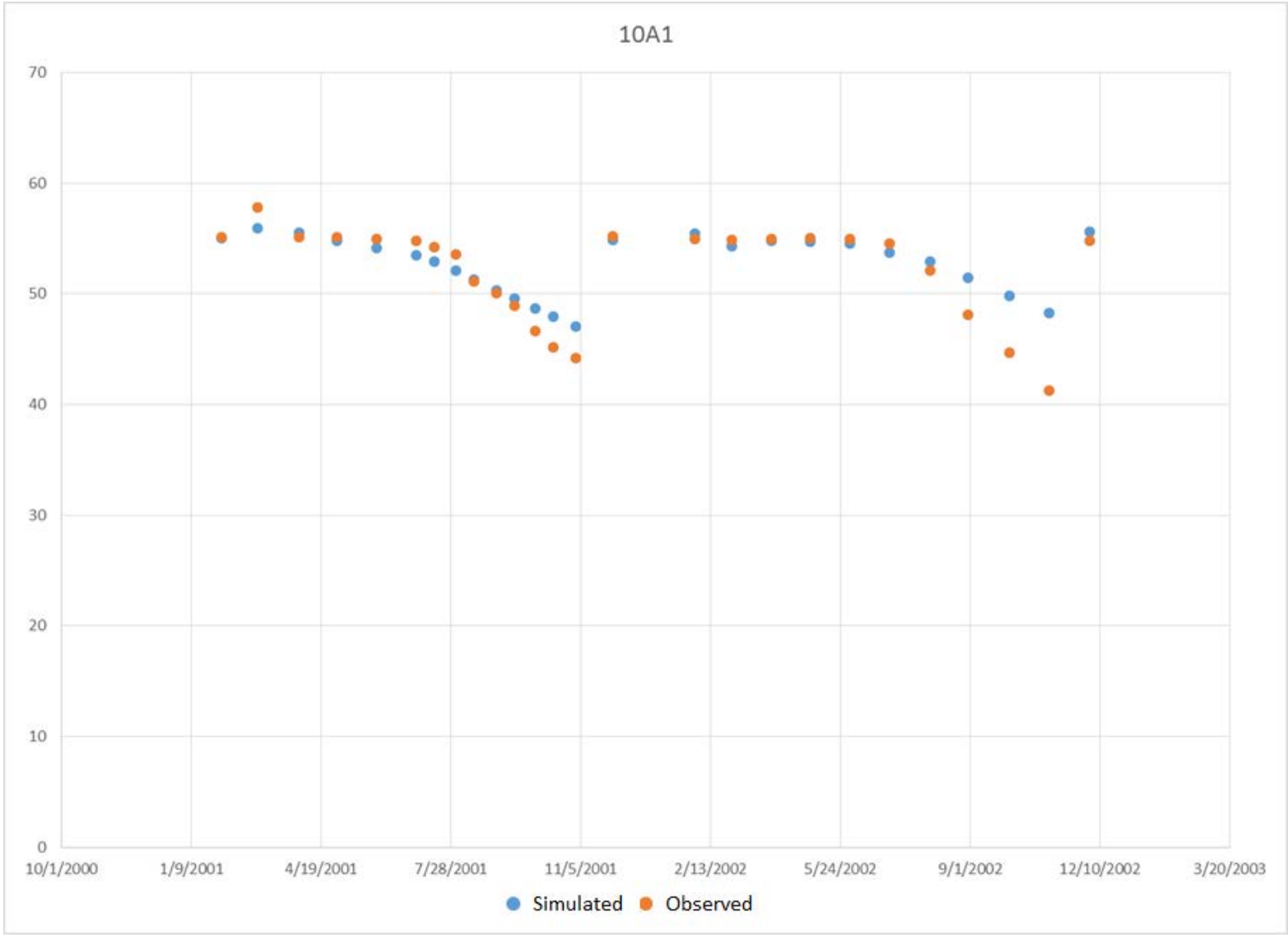


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 5-3
Histogram of Model Residuals

This page intentionally left blank.



Cambria Emergency Water Supply Project

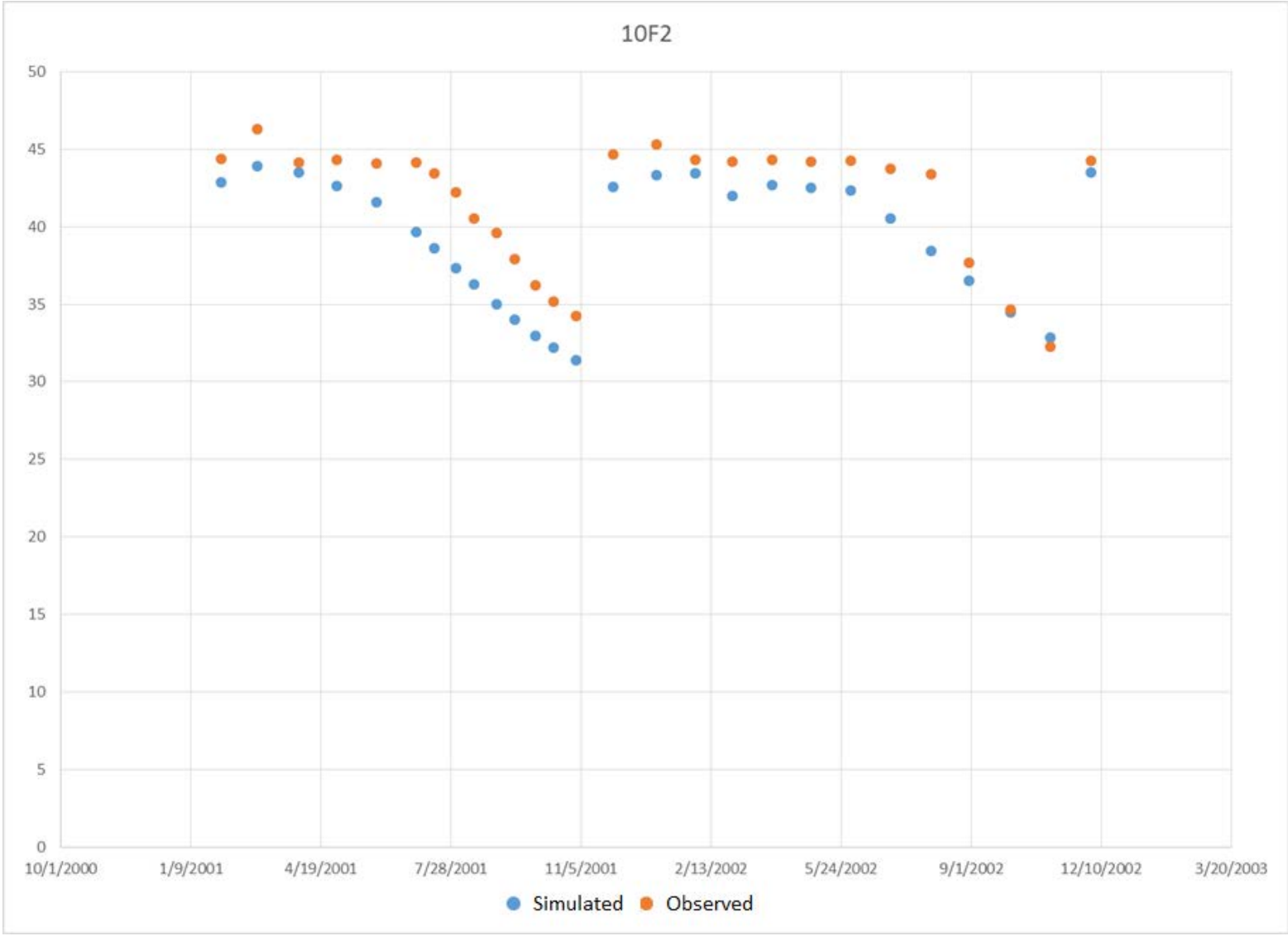
TO1: Geo-Hydrological Model

Figure 5-4

Observed and Modeled Hydrographs at Well 10A1

CDM Smith

This page intentionally left blank.



Cambria Emergency Water Supply Project

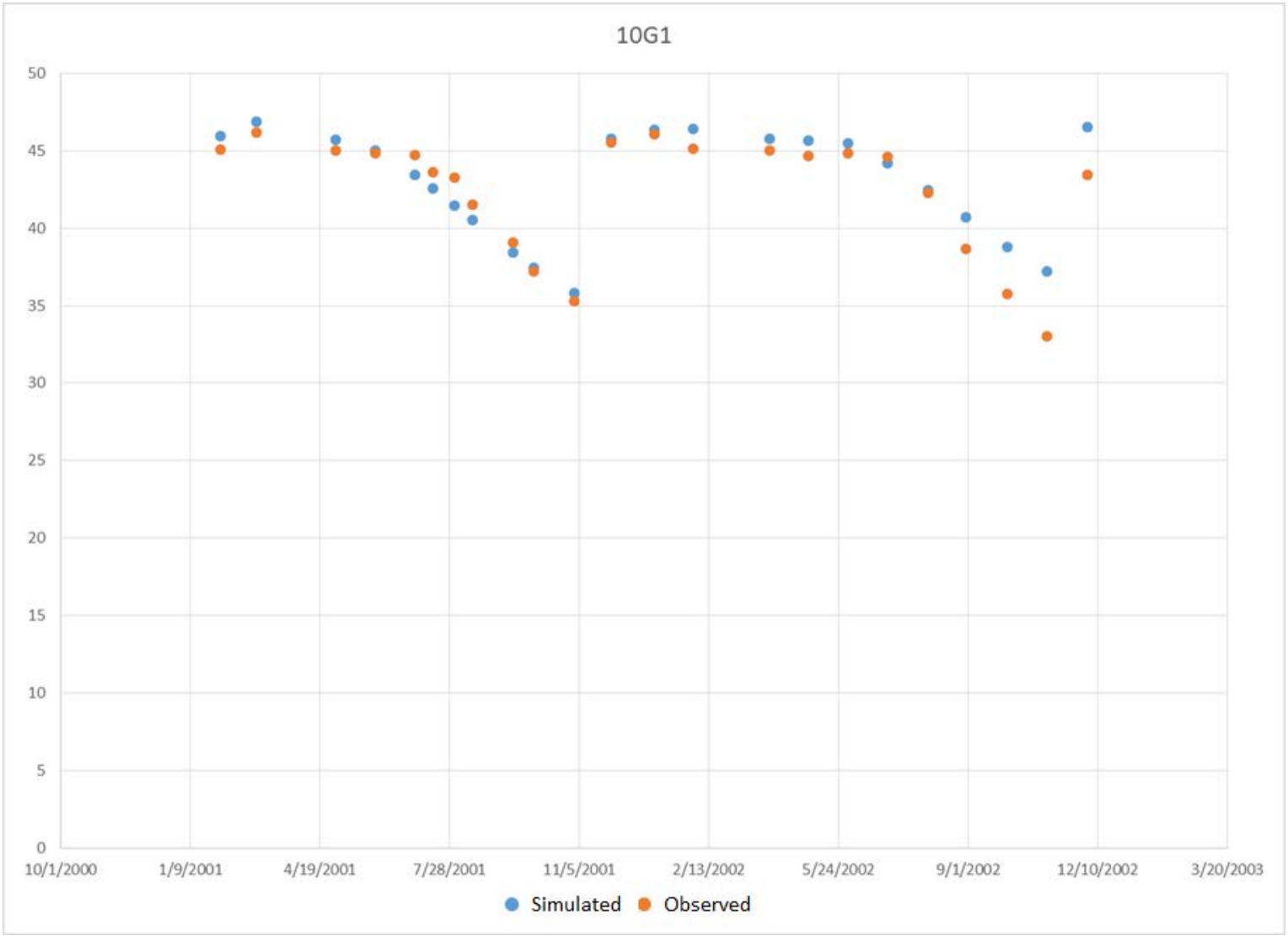
TO1: Geo-Hydrological Model

Figure 5-5

Observed and Modeled Hydrographs at Well 10F2

CDM Smith

This page intentionally left blank.



Cambria Emergency Water Supply Project

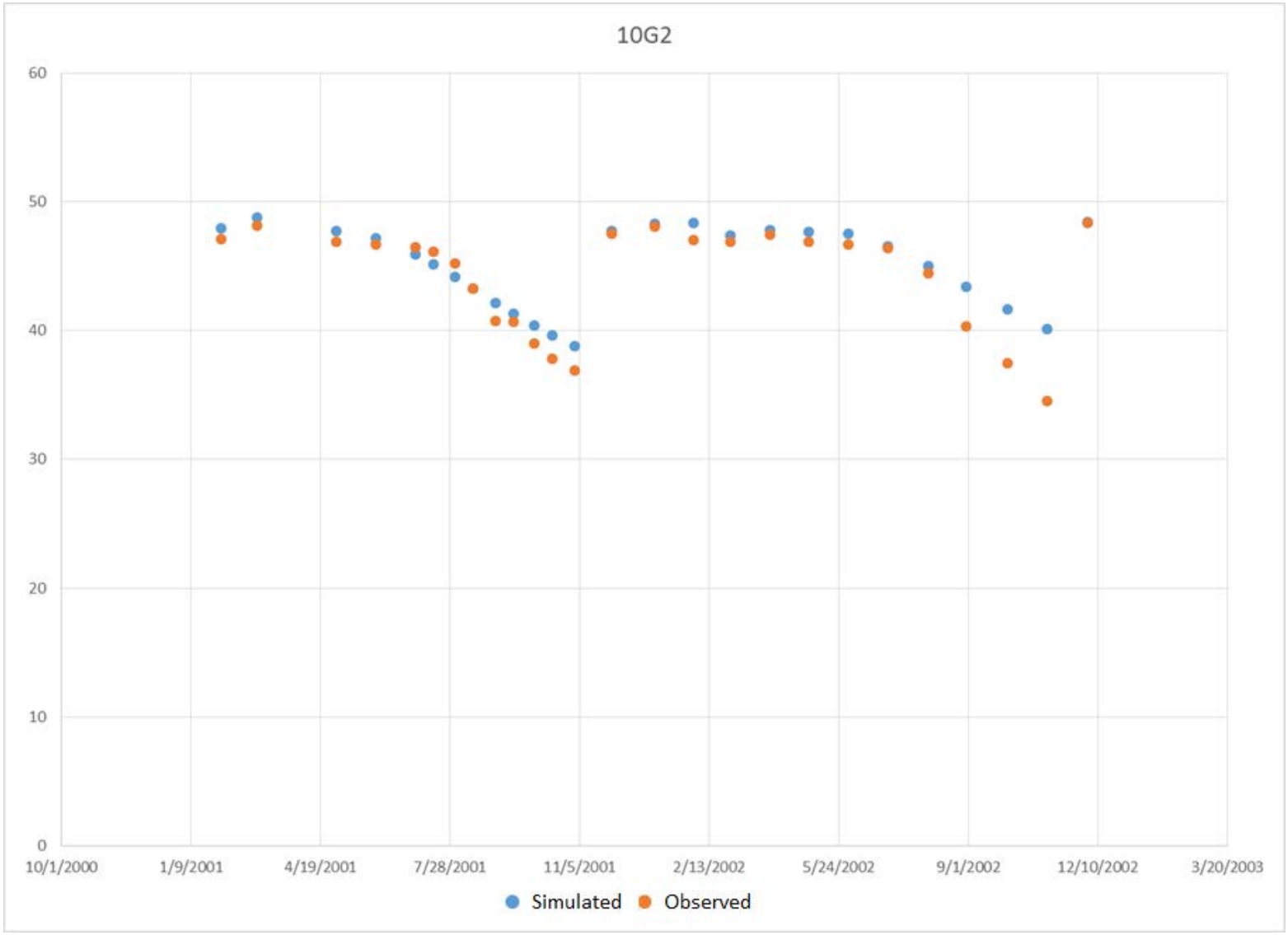
TO1: Geo-Hydrological Model

Figure 5-6

Observed and Modeled Hydrographs at Well 10G1

CDM Smith

This page intentionally left blank.



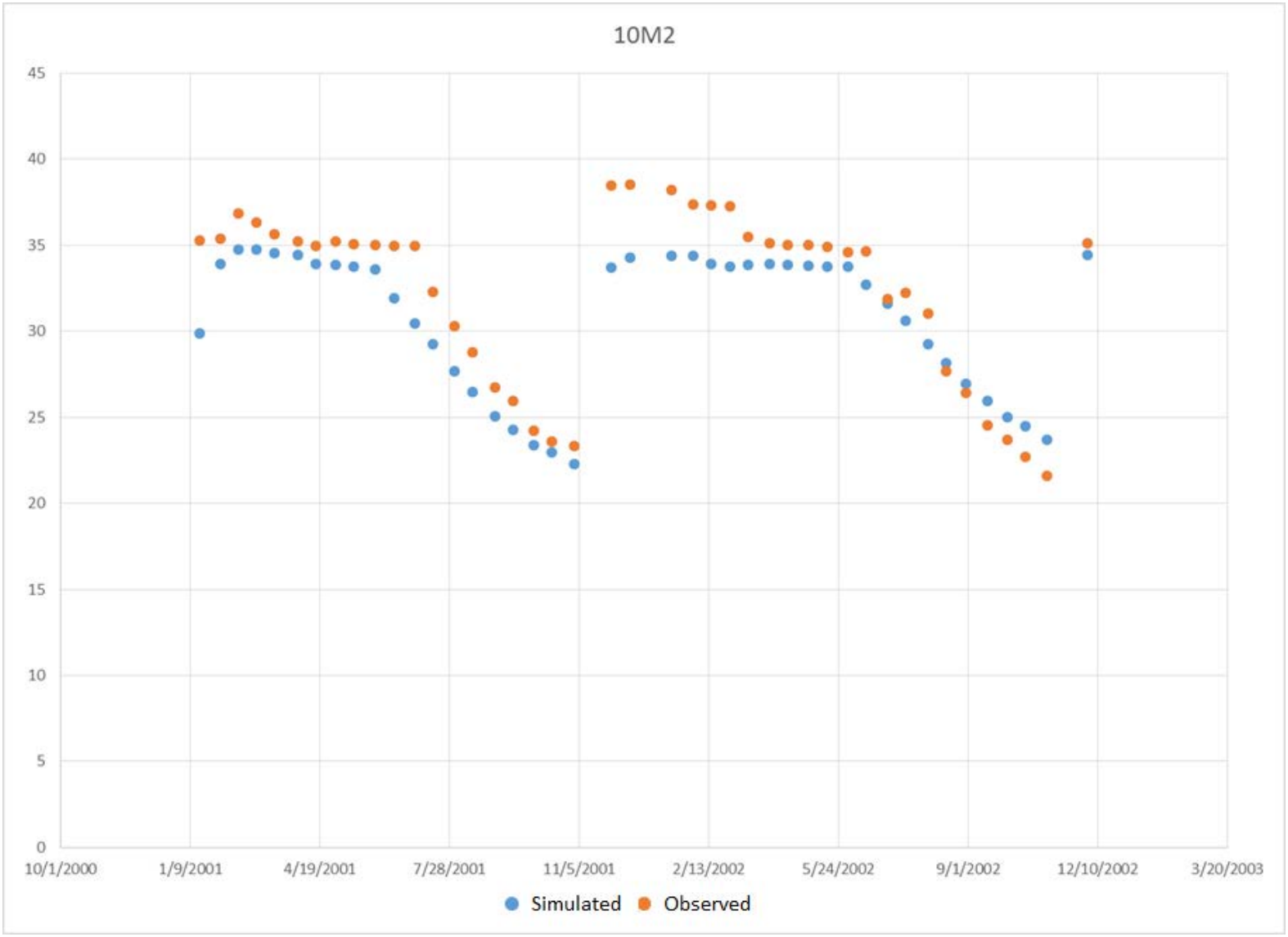
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 5-7
Observed and Modeled Hydrographs at Well 10G2

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.



Cambria Emergency Water Supply Project

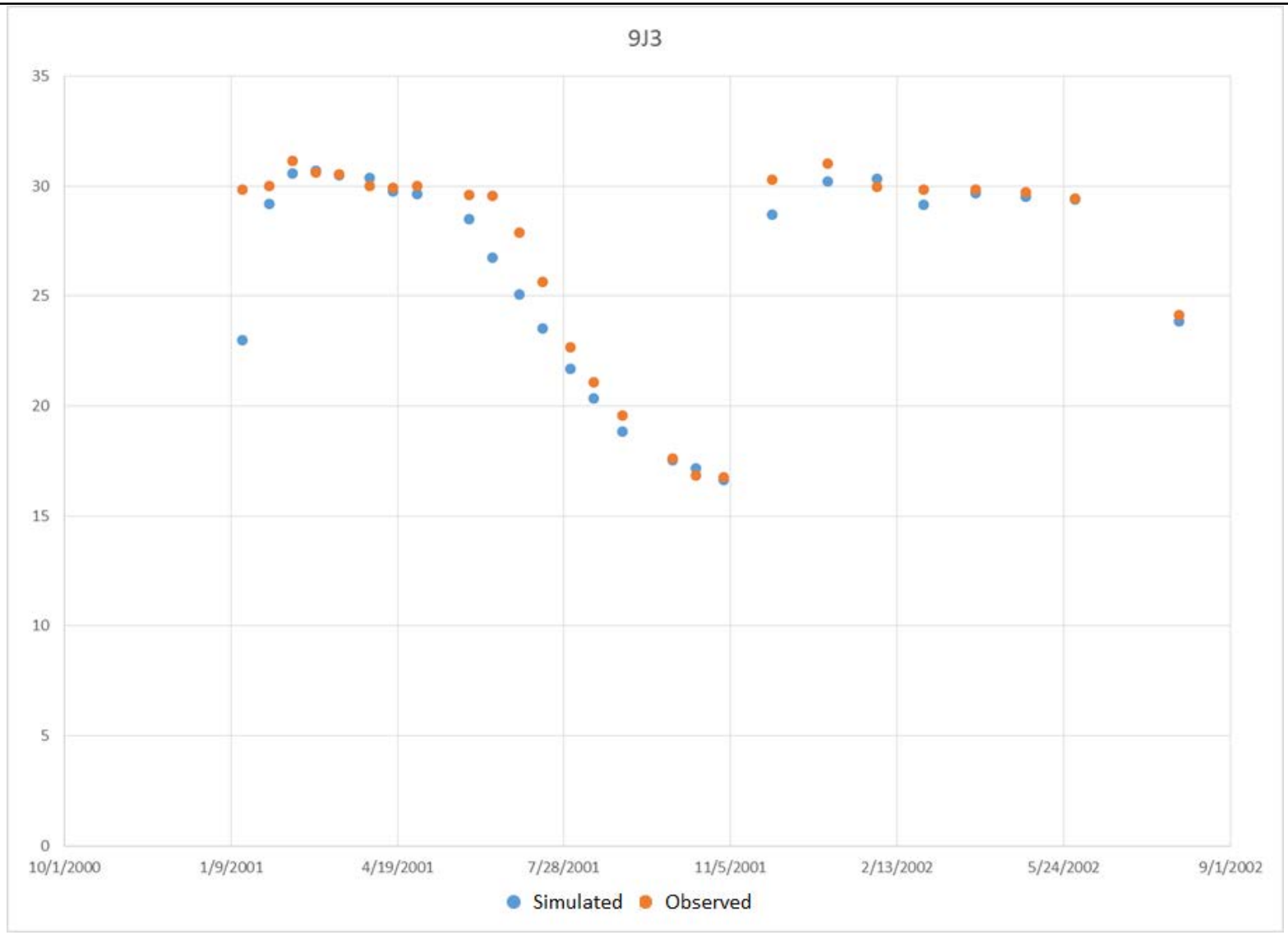
TO1: Geo-Hydrological Model

Figure 5-8

Observed and Modeled Hydrographs at Well 10M2

CDM Smith

This page intentionally left blank.

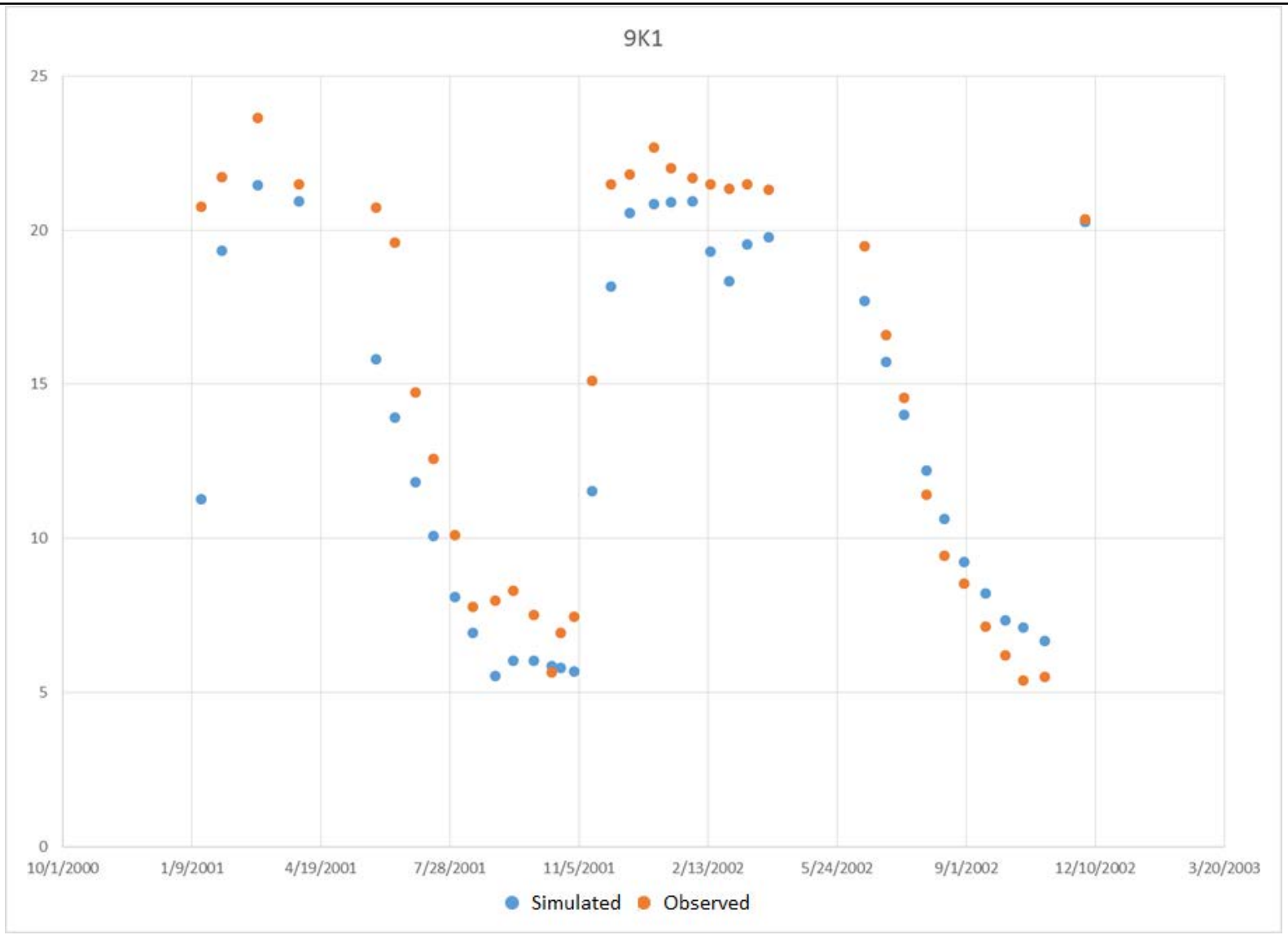


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 5-9
Observed and Modeled Hydrographs at Well 9J3

This page intentionally left blank.

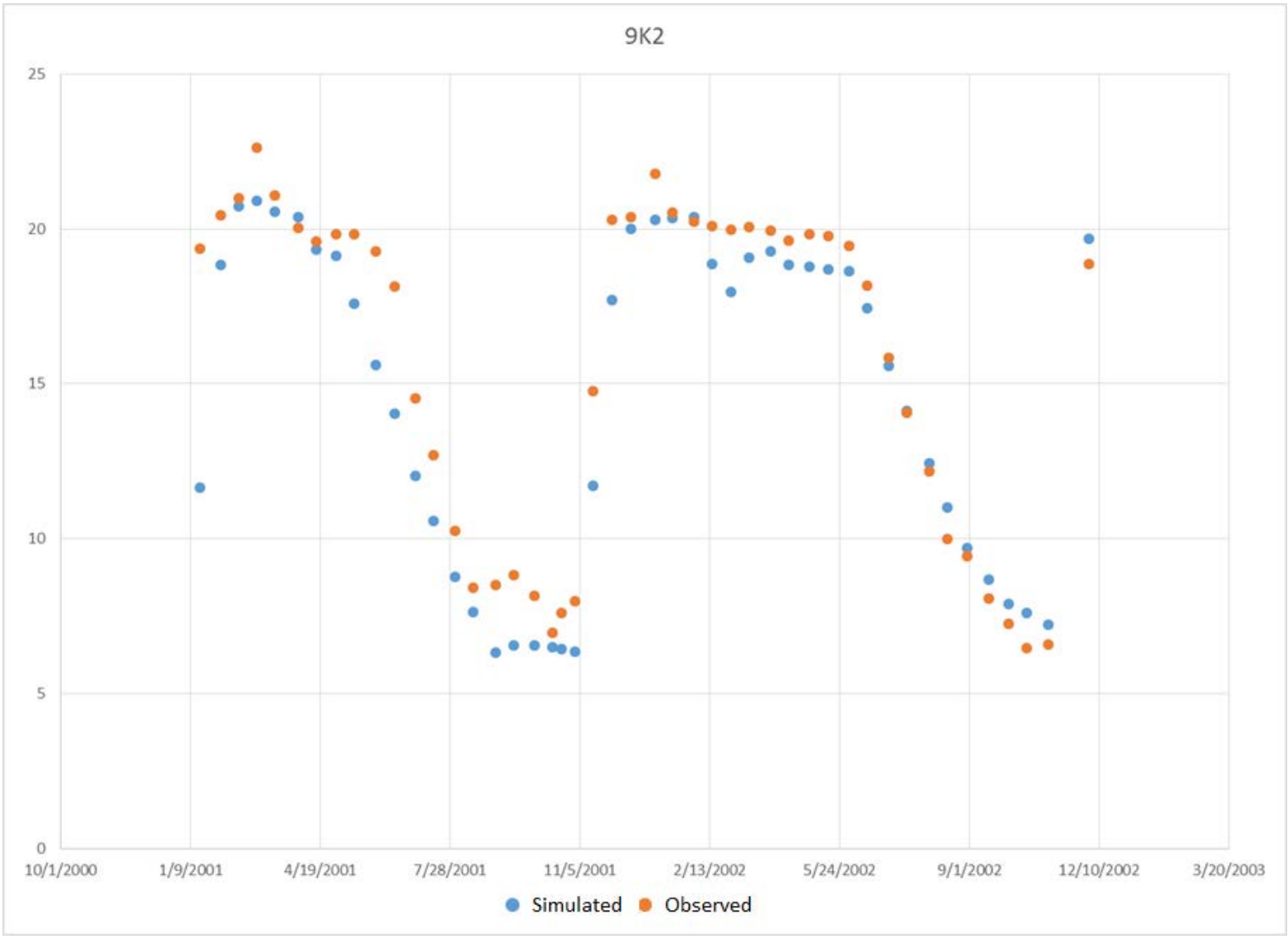


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 5-10
Observed and Modeled Hydrographs at Well 9K1

CDM Smith

This page intentionally left blank.

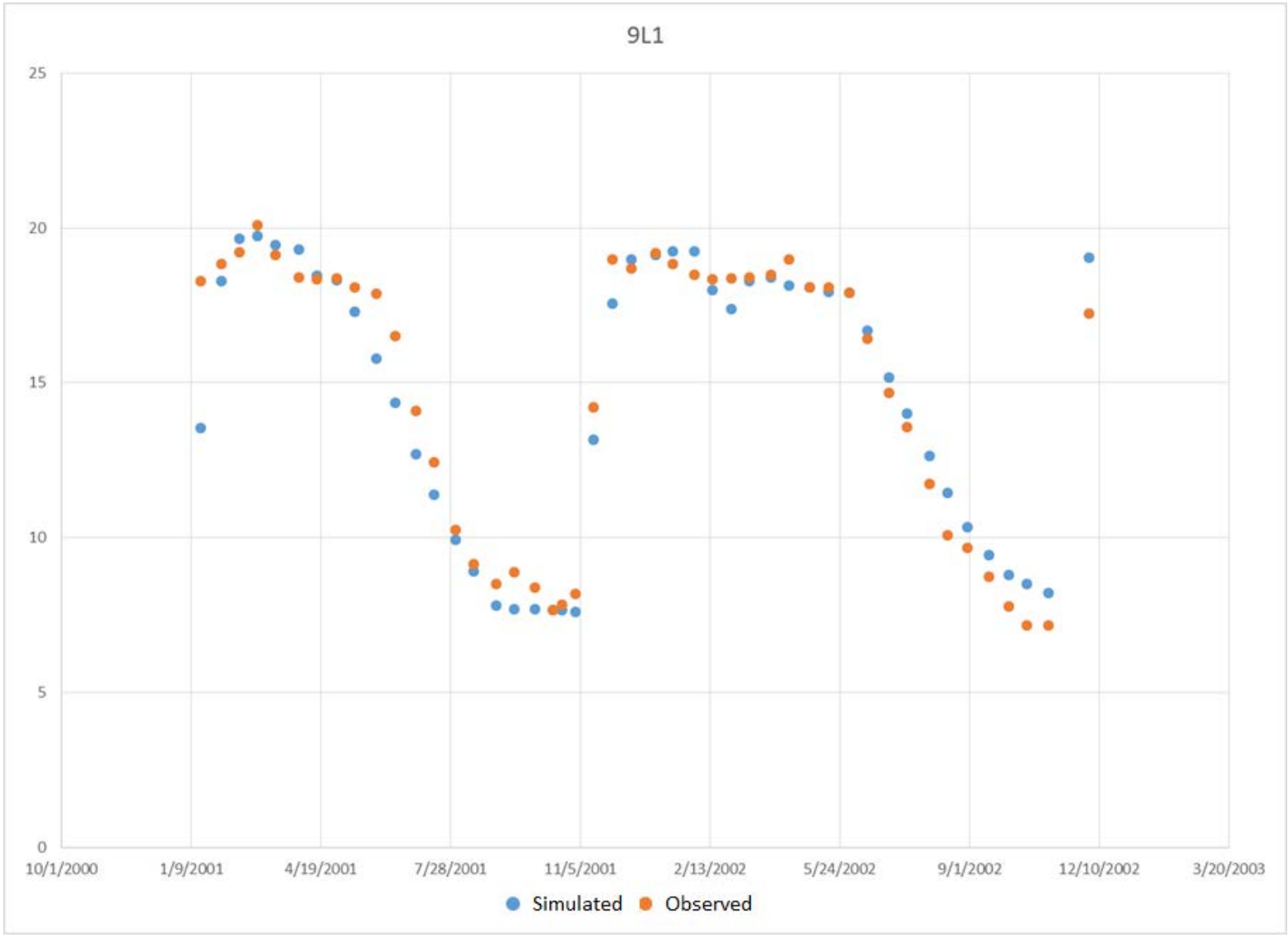


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 5-11
Observed and Modeled Hydrographs at Well 9K2

CDM Smith

This page intentionally left blank.

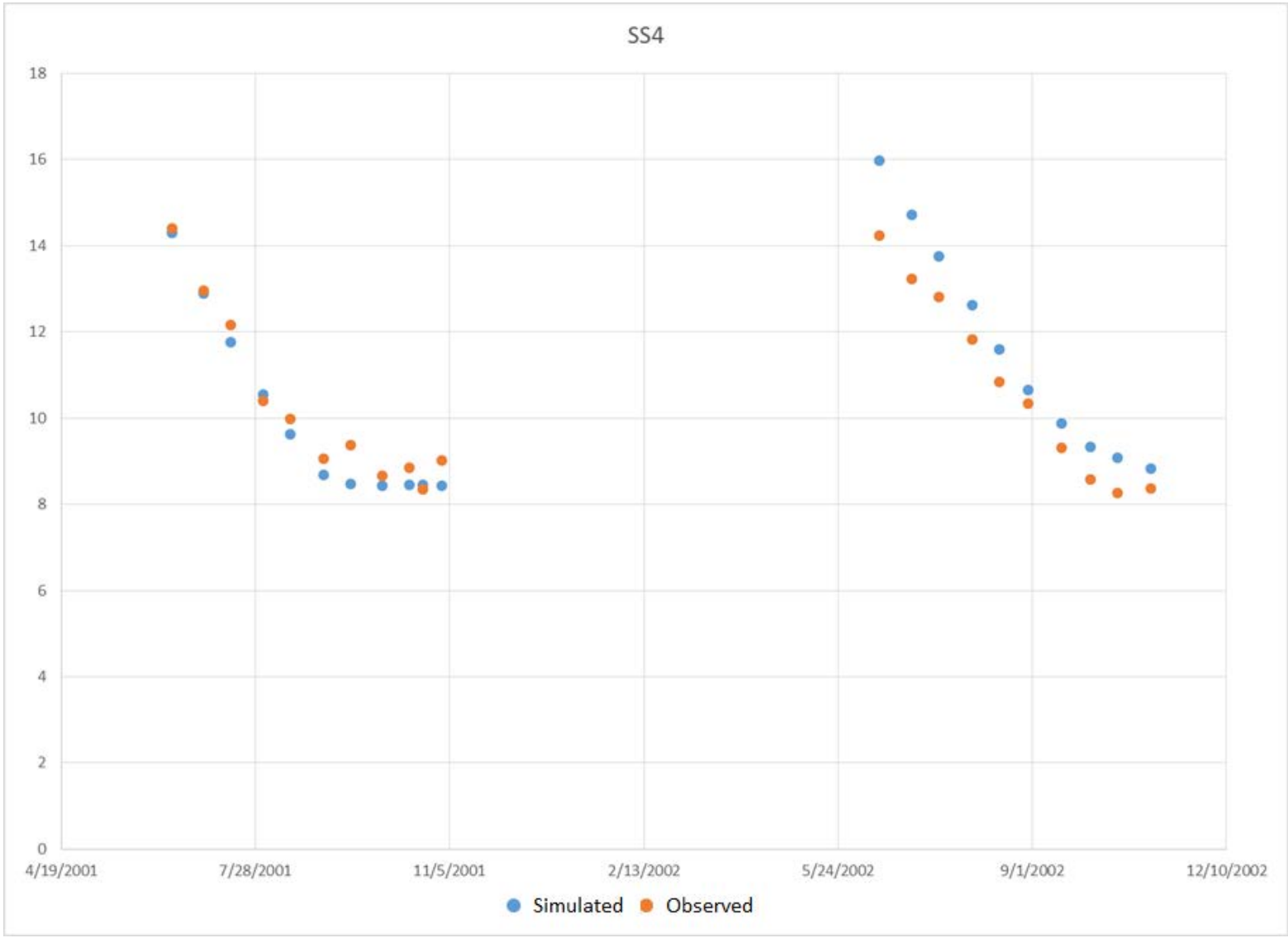


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 5-12
Observed and Modeled Hydrographs at Well 9L1

CDM Smith

This page intentionally left blank.

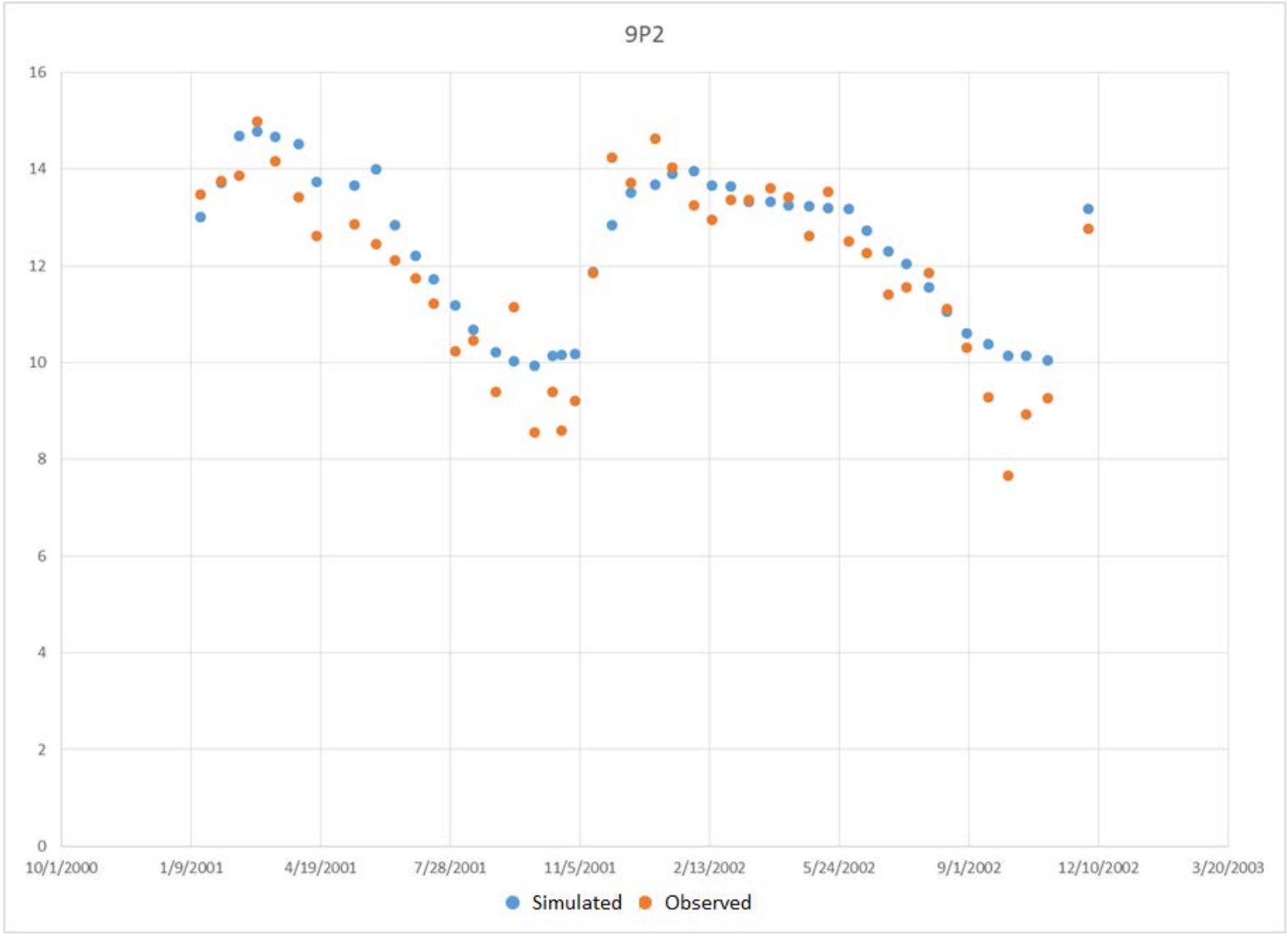


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 5-13
Observed and Modeled Hydrographs at Well SS4

This page intentionally left blank.



Cambria Emergency Water Supply Project

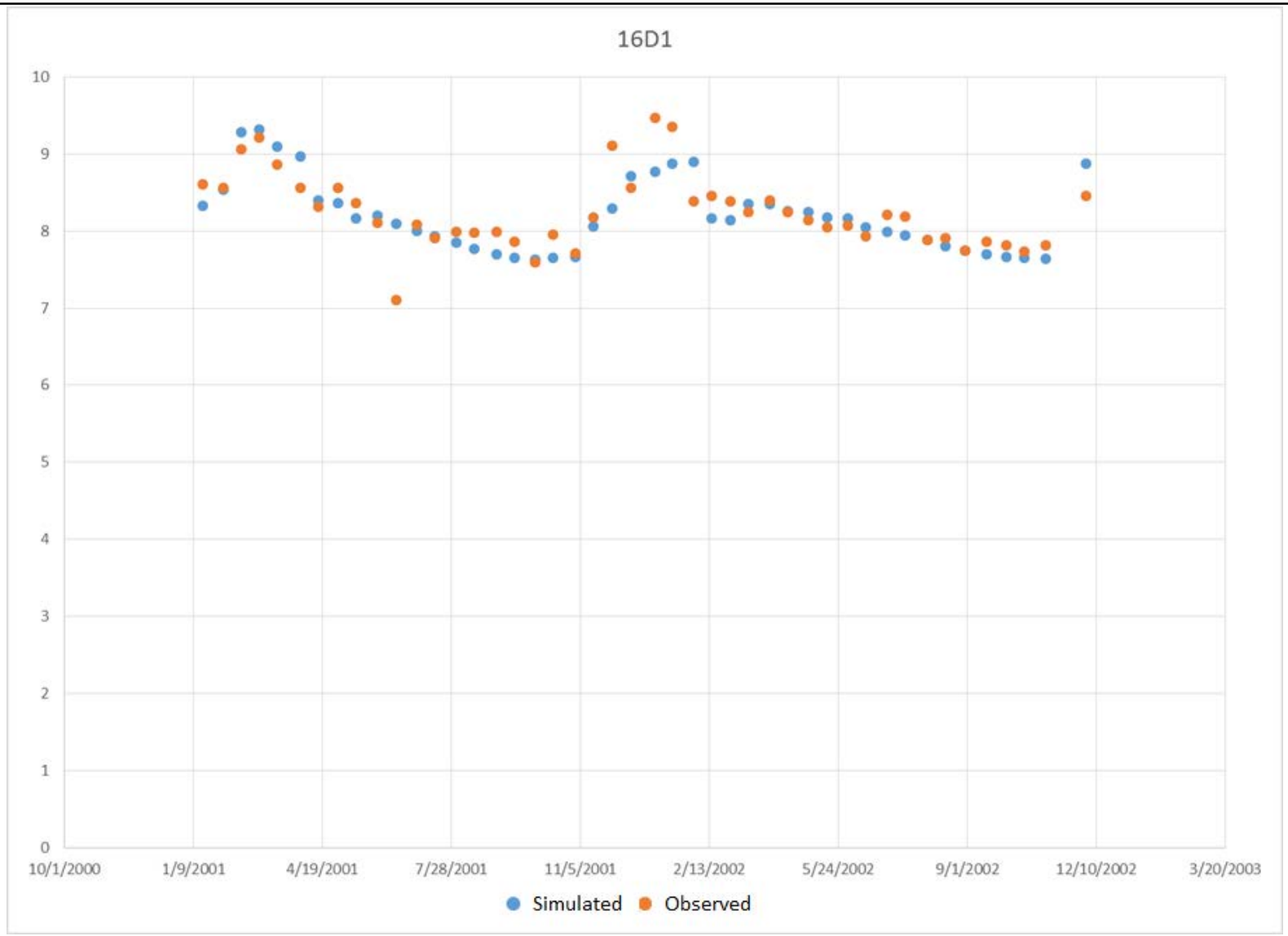
TO1: Geo-Hydrological Model

Figure 5-14

Observed and Modeled Hydrographs at Well 9P2

CDM Smith

This page intentionally left blank.



Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 5-15
Observed and Modeled Hydrographs at Well 16D1

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.

Section 6
Alternatives Analysis

A series of alternatives were defined to address short term emergency water supply for CCSD in the San Simeon basin. These alternatives are focused on development of additional emergency water supply by optimizing recovery of fresh and brackish water in the basin. Currently, significant quantities of fresh water discharge to the ocean. The secondary treated wastewater that is percolated into the aquifer is lost to the ocean or discharges to surface water in the western portion of the basin. A series of simulations were defined to assess the ability to recover additional groundwater and meet requirements for residence time for indirect potable reuse of wastewater affected groundwater in the basin, while also providing for habitat mitigation in the fresh water lagoon.

The assumptions for basin recharge for all of the emergency supply alternatives were identical to allow comparisons to be made. The period incorporated stream flow conditions starting in December 2012 through March 2014 using records from the gaging station in the lower portion of San Simeon Creek. Agricultural pumping rates and return flows were assumed to remain at the rates estimated in the 2007 analysis (Yates, 2007), which were also used during the calibration period. Operational data from CCSD for pumping and percolation pond discharge were obtained from records for the period through February 2014. This simulation period was selected for evaluation of the emergency water supply alternatives since it represents the current drought conditions.

Each of the alternatives will also require disposal of brines from the treatment process. However, brine disposal for the emergency supply alternatives assumes brine evaporation processes from lined ponds and does not interact with the aquifer and is not simulated. Alternatives were simulated using monthly stress periods. The solute transport model tracked the fate of secondary treated waste water and highly treated injected water by simulating movement of a hypothetical tracer compound at a concentration of 100 mg/L. The extent of the tracer over time was assessed by examination of contour maps. The calculated concentrations of the hypothetical tracer at CCSD potable water supply wells was tracked in the model to assess the residence time that the highly treated water remained in the aquifer prior to recovery at the supply wells.

Two sets of emergency water supply alternatives have been considered including two direct potable supply alternatives and two indirect potable reuse alternatives. To qualify for direct potable supply, content of the percolated secondary effluent in the basin water needs to be less than five percent. Otherwise, the basin water will be considered as reclaimed wastewater requiring treatment as it is required for the indirect potable reuse.

For wells that receive recharge from injection of the highly treated basin water, a residence time estimated by modeling needs to be greater than 120 days, which is a safety factor of two over the required field verified residence time of 60 days. The alternatives are described and results of the analysis are presented in following sections. Detailed presentation of simulation results is only presented for the potentially viable alternatives.

6.1 Emergency Alternative 1 (Direct Potable Supply)

This alternative would recover water from the deep portion of the alluvial aquifer for advanced treatment and direct potable supply in the system. This alternative would require that the produced

water contain less than five percent water that originated from the percolation ponds. **Figure 6-1** shows the location of the new supply well for this alternative, which would be located on CCSD owned property just east of Van Gordon Creek and in the vicinity of the existing Wells 9N2 and 9N3.

This alternative was simulated using the standard conditions by configuring a new pumping well in only the lower portion of the aquifer and pumping the new supply well at 185 gpm, which would yield 150 gpm after advanced treatment. The design concept for this alternative was to assess the potential for obtaining water from the deeper portion of the aquifer in order to minimize production of secondary treated effluent from the percolation ponds. The existing CCSD well field would be pumped at 260 gpm, for a total potable yield of 410 gpm. Shallow recharge to support the fresh water lagoon would be done by injecting 100 gpm into the shallow aquifer near the upper extent of the lagoon, resulting in a potable water supply of 310 gpm for the CCSD distribution system.

The simulation results indicate that pumping at this location would result in development of significant vertical gradients that would induce movement of the percolated secondary treated wastewater to this well. The natural gradients also indicate that past operations at the percolation ponds have likely impacted these deeper zones, thus the criteria for less than five percent wastewater content will not be met with this alternative.

Figure 6-2 illustrates the movement of percolated wastewater in the groundwater system for a hypothetical tracer injected in the percolating treated wastewater after 270 days. Since the percolation ponds have been operating for several decades, this wastewater is present through the thickness of the aquifer and insufficient isolating strata are present to prevent this downward movement. This alternative is not viable.

6.2 Emergency Alternative 2 (Direct Potable Supply)

This alternative is similar to alternative 1, with the exception that the supplemental production well is sited near the beach area on property that is not controlled by CCSD, as shown on **Figure 6-3**. This supplemental well would also have to be pumped at a higher rate, since the TDS is higher, which will decrease the recovery efficiency of the treatment system. This well would also have to meet the criteria of not producing water with more than a five percent content of the percolated waste water in order for the treated water to be directly used.

The results of this simulation also indicate that significant quantities of waste water are present throughout the aquifer, and operation of the well would induce vertical movement of groundwater from the entire thickness of the aquifer. This alternative is also not viable due to a wastewater content greater than five percent. This well location would also produce very high TDS water, which would result in a lower recovery percentage for treated water. Recent measurements at well 8R3 in the area of this alternative indicates that the groundwater has a TDS of about 5,000 mg/L, and pumping in this area would lead to an increase in TDS.

6.3 Emergency Alternative 3 (Indirect Potable Reuse)

This alternative would pump groundwater near the percolation ponds at a rate of about 500 gpm, use advanced treatment with an estimated 92 percent recovery efficiency and re-inject this water up-gradient of the existing well field. **Figure 6-4** shows the configuration of this alternative. This water would be injected down-gradient of existing irrigation wells and upstream of the CCSD well field to minimize loss of the treated water to other users.

The objective of this alternative is to provide a source of recharge for beneficial use of the secondary treated waste water that would otherwise be lost to the ocean. The simulation results indicated that travel times to the closest CCSD production well will not meet the criteria of 120 days of residence time with an injection well located down-gradient of the irrigation wells. This is due to the short distance available to avoid losses to the irrigation wells and a narrowing of the bedrock valley that result in higher groundwater velocities in this area. The criteria could be met by moving the injection well up-gradient of these irrigation wells, however, this would result in loss of injected water under drought conditions to the irrigation wells when they are pumping. This alternative is potentially viable with a move to a further up-gradient location and resolution of the potential loss of highly treated water to irrigators.

6.4 Emergency Alternative 4 (Indirect Potable Reuse)

This alternative is designed to maximize recovery of the percolated secondary treated wastewater while maintaining a mound to avoid movement of percolated waste water toward the existing well field. This alternative is summarized on **Figure 6-5**. Existing well 9P7, located within the percolation pond area, will be pumped at 710 gpm and will undergo advanced water treatment. A new injection well located between the percolation ponds and the existing CCSD well field will receive 485 gpm, while 100 gpm will be infiltrated near the fresh water lagoon to maintain its viability. Wells SS1 and SS2 would be pumped at 227 gpm each to supply CCSD demands. Well SS3 will not be operational when the basin receives the injected water from the advanced water treatment plant due to its proximity to the recharge well. This conservative assessment assumes that the emergency operations would continue for over a year, assuming that no significant runoff occurs in San Simeon Creek.

Since this alternative meets the selection criteria, detailed simulation results are presented. In order to assess the residence time, a hypothetical tracer was injected with the water at the new injection well location. The areal extent of this tracer was tracked in the model and the simulated tracer concentration in CCSD wells SS1 and SS2 summarized. **Figure 6-6** through **Figure 6-12** show a plan view extent of simulated tracer concentration greater than ten percent of the injected concentration the aquifer at 30 day intervals through 210 days of operations. These figures are a visualization through all of the model layers and represent the maximum extent of the ten percent contour in all of the layers. **Figure 6-13** shows the simulated water level after one year of operations, illustrating the mounding at the injection well with radial flow along the aquifer extent both toward the CCSD supply wells and toward the percolation ponds.

Figure 6-14 shows the simulated breakthrough curve for simulated tracer concentration at wells SS1 and SS2 under pure advective flow conditions. Based on this simulation, the estimated residence time from the injection well to well SS2 is 133 days, which exceeds the criteria time of 120 days, which include the 2 times safety factor over the regulatory target residence time of 60 days. The current draft regulations indicate that with the degree of treatment proposed, a residence time of 60 days, confirmed by a tracer study, will meet the requirements for indirect potable reuse. This alternative has the disadvantage of recirculating a significant quantity of water back to the source well at the percolation ponds where it would be repumped and retreated. Some of this recirculated water would also maintain water levels in the lower basin, which will be beneficial for habitat mitigation at the fresh water lagoon. Approximately 60 percent of the water produced at wells SS1 and SS2 would originate from the injection well during the simulated 1.25 years of operation. The breakthrough curves on Figure 6-14 indicate that half of the water produced at wells SS1 and SS2 would originate from the highly treated water recharged to the basin by between 160 and 200 days for the range of assumptions simulated. The percentage of recovery would increase for longer durations under more

extreme drought conditions, as basin inflow decreases. If the emergency alternative is operated for only a period of 3 months, all of the water produced by wells SS1 and SS2 would originate from the basin, since the reinjected water would still be in transit from the recharge well, however, the mounding created at the recharge well would serve to maintain a protective westward gradient, and decrease the rate of water level decline at the production wells.

In order to assess uncertainties in the projections of residence time for this alternative, a series of sensitivity analyses were conducted. The sensitivity analyses included assessing the impact of a significant decline in basin sources of recharge, including native precipitation and lateral boundary inflow. These factors were decreased to half the value used in calibration. The effect of variations in groundwater velocity in the aquifer was assessed by adding the effect of dispersion. As noted earlier, the dispersion process accounts for uncertainties in groundwater velocity associated with small scale variations in the aquifer.

An additional sensitivity simulation decreased the effective porosity and included dispersion. This reasonable worst case simulation included a longitudinal dispersivity of 67 feet and an effective porosity of 0.14. This is a very conservative assessment. Figure 6-14 also shows the simulated tracer breakthrough curves for the base alternative and the three sensitivity simulations. The worst case simulations show that the ten percent breakthrough could occur in less than 120 days with the simulated location of the injection well. The location of the well will be moved slightly down-gradient during preliminary design so that a simulated breakthrough for the worst case simulation is beyond the criteria 120 days.

Maintaining the viability of the fresh water lagoon that is present in the lower reach of San Simeon is an important goal of the project. This viability will be maintained by infiltrating treated water in an area adjacent to the channel on CCSD property to support flow into the upper reach of the lagoon area. A preliminary estimate of 100 gpm was used as a basis to assess the potential for maintaining fresh water in the lagoon area during the drought conditions. The intention of mitigation is to avoid or minimize to the extent feasible negative impacts on the fresh water lagoon.

This fresh water lagoon support was assessed by comparing simulated water levels near the channel and fresh water injection wells to determine the extent to which this injection rate could support discharge to the channel and flow into the lagoon area. The lower extent of the lagoon near the beach has an invert elevation that is below mean sea level, so under extreme drought conditions, this lower reach will maintain a water level near mean seal level (~2.81 feet on the site datum), however, as the quantity of fresh water diminishes, the lagoon will become more saline.

Figure 6-15 shows a comparison of simulated shallow groundwater levels and the channel invert, which indicates that some discharge to the channel will occur for up to a year after commencement of the alternative. This plot assumes that alternative operations would start in late summer 2014. The quantity of water actually entering the channel will diminish over time as the drawdown in the shallow aquifer increases due to the drought and continued pumping of the basin. The rate of decline in water levels increases when irrigation pumping starts around day 300. The permeability of the lagoon deposits is unknown, so it may be necessary to provide increased discharge to the wells or directly to the channel if the drought persists for an extended period. If additional mitigation flow are required, then additional pumping from well 9P7 would be required.

The impact of the emergency operations on movement of brackish water inland from the ocean was assessed using the flow and transport model. A water balance from the simulation is shown on

Figure 6-16, which indicates that a small net discharge to the ocean will occur during the initial year of operations of the emergency alternative as storage is depleting in the basin. This figure also presents the net storage decline in the basin, since pumping will exceed the sources of recharge to the basin. The negative values for ocean outflow indicate a net discharge to the ocean, while the positive rates at month 12 of emergency operations indicate a reversal of flow and inducing a net inflow to the basin from the ocean. Depletions from storage occur through the simulated operating period.

Recent sampling of wells at the site indicated that the total dissolved solids (TDS) in groundwater have been elevated due to probable limited salt water intrusion. The secondary treated wastewater has helped to attenuate the increased TDS of the basin water. A profile of specific conductance was run at well 9P7 at the percolation ponds that indicated a TDS indicative of the treated waste water in the upper 25 feet of the aquifer, with deeper zones indicating possible impacts from limited saltwater intrusion. **Figure 6-17** shows a profile of TDS (primarily estimated based on specific conductance) extending from the beach area to the CCSD well field. A well cluster (9N2/9N3) did not indicate vertical differences in TDS. The values ranged from about 5000 mg/L at well 8R3 near the beach, to a range of 350 to 540 mg/L from the CCSD supply wells. The vertical profile data at 8R3 suggested that the well had been impacted by salt water in the past, either from flow within the aquifer or surface flooding, since the interval below the screen openings showed a TDS of about 23,500 mg/L.

Simulation of the effects of variable density was conducted using the SEAWAT model for this alternative, including the impacts of lower basin recharge, in order to validate the primary simulations using MODFLOW and MT3DMS. These simulations confirmed simulation results that were obtained using the equivalent fresh water head approach. The variable density model did show stratification of high TDS water near the base of the aquifer, however, for the 1.25 year simulated duration of emergency operations, the high TDS water did not migrate inland by a significant distance, and the closest wells near the percolation ponds are not impacted.

The simulations of TDS during operation of the emergency supply alternative was assessed using the equivalent fresh water head approach, since the more compute intensive variable density simulations indicated that this process was not required for the duration of the emergency water supply simulations. The ocean boundary was defined for the simulations as an equivalent fresh water head for each of the zones. Since the density of salt water is higher than for fresh water, as the height of the water column increases, the pressure at depth will be higher in salt water than in fresh water. The current distribution of concentrations of TDS in the aquifer was configured in MT3DMS and the emergency alternative was simulated to assess the water quality that would be produced at well 9P7, which is used as the supply well for the advanced treatment system. This provides a reasonable assessment of water quality since a net outflow to the ocean occurs through most of the simulation period. In order to develop a reasonable estimate of the impact of flow reversals from the ocean toward the 9P7 brackish extraction well, a constant concentration boundary was configured in the model between wells 8R3 and 9N2, with a concentration of 3,000 mg/L, which represents an average between these wells. The current observed data represents a long term average condition during a period when little recharge to the aquifer occurred.

Figure 6-18 shows the simulated TDS concentration at the brackish extraction well 9P7 for the emergency alternative. The simulated TDS at the start is about 800 mg/L, similar to what is observed in the percolated secondary treated wastewater. Over time, the concentration drops, since the capture zone of 9P7 includes up-gradient areas that have groundwater not impacted by either wastewater percolation and eventually recharge water that was injected at RIW1, which has a very low TDS

(simulated at 100 mg/L). Flow is induced up-gradient from the west off the ocean. However the higher TDS water that is in this area does not reach 9P7 over the 1.25 year duration of the assumed emergency operations. If emergency operations were to continue into the future with no runoff in San Simeon Creek, then this higher TDS water and eventually sea water would be induced to the area of 9P7. If this extreme drought condition were to occur, the steady-state TDS would be a blend of the percolated waste water, return flows from injection at RIW1 and sea water, with minor basin flow from up-gradient after several years. Under this extreme condition, the TDS could rise as high as 8,500 mg/L when this equilibrium is reached after several years of no stream flow recharging the system.

Based on the simulations, the planned TDS should include a safety factor for design and use a design value of 1200 mg/L to account for uncertainties. If the drought extends into 2017 with no stream flow, then the TDS values will increase, potentially resulting in decreased recovery efficiency from the treatment system.

6.5 Emergency Alternative Recommendation

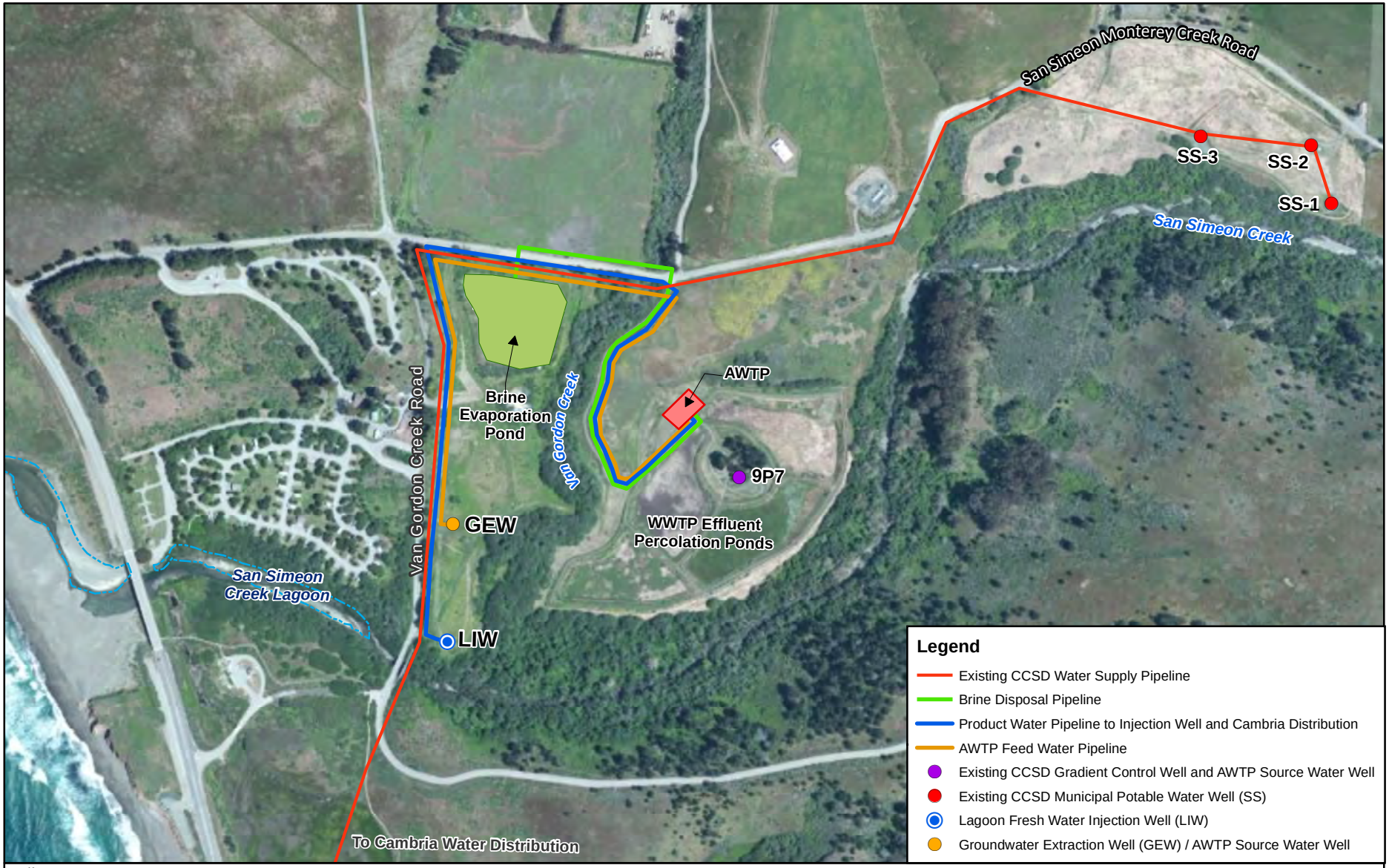
Based on the modeling simulations emergency water supply Alternative 4 is feasible, though there is significant recirculation of the highly treated water. Alternative 3, with a modification to the location of the injection well further up-gradient is also feasible. However, this would require access to property not owned by CCSD.

A key element of this feasibility is the use of an injection well between the CCSD well field and the percolation ponds. Use of this approach allows maintenance of a gradient that protects the well field from impacts from the percolated effluent and brackish water present in the lower basin. Emergency water supply Alternative 4 increases sustainability of the water supply under the current drought conditions, since the previously lost percolated effluent is captured, highly treated, and produced for water supply after appropriate residence time in the aquifer. The brackish water that is pumped from the basin for treatment will be diluted with percolated secondary effluent and a portion of highly treated water that is injected will maintain a protective gradient between the percolation ponds and the potable water well field.

Use of the injection well to create a mound near the freshwater lagoon has limited benefits later in the season as basin water levels are drawn down below the channel invert, precluding discharge of the mounded groundwater to the lagoon. Mitigation would be more effective by discharging the treated water directly in the open channel.

6.7 Conclusions

The modeling analysis indicates that enhancing water supplies for both emergency and long-term conditions is feasible in the San Simeon Creek Basin.



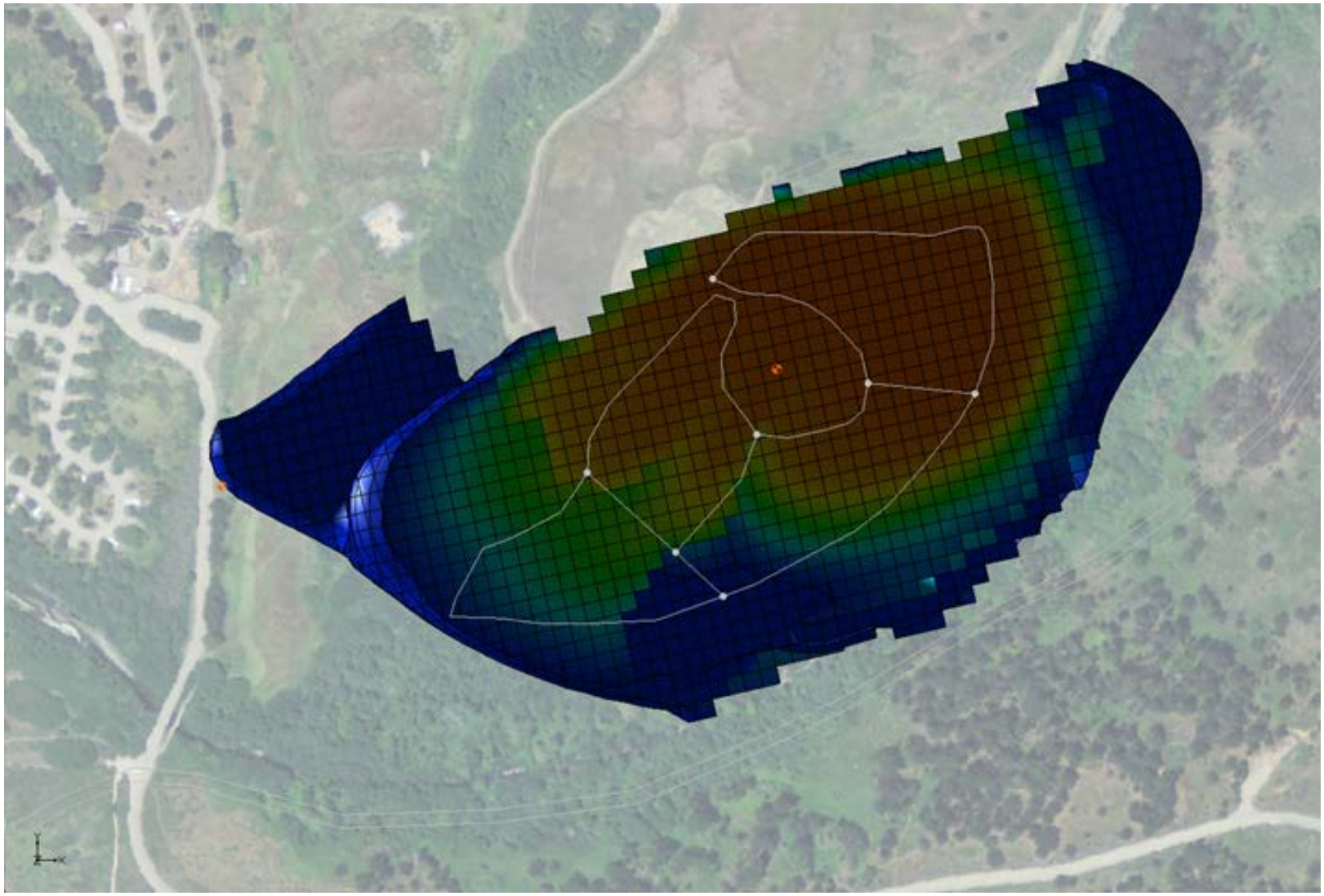
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-1
Emergency Alternative 1 Summary

CDM Smith

schellerka K:\51115_USACE-KansasCity\102849\Figure6-1_Alternative1.mxd 4/3/2014

This page intentionally left blank.



Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-2

Alternative 1: Simulated Extent of Treated Wastewater after 270 days of operation Emergency

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.

300 0 600
Feet

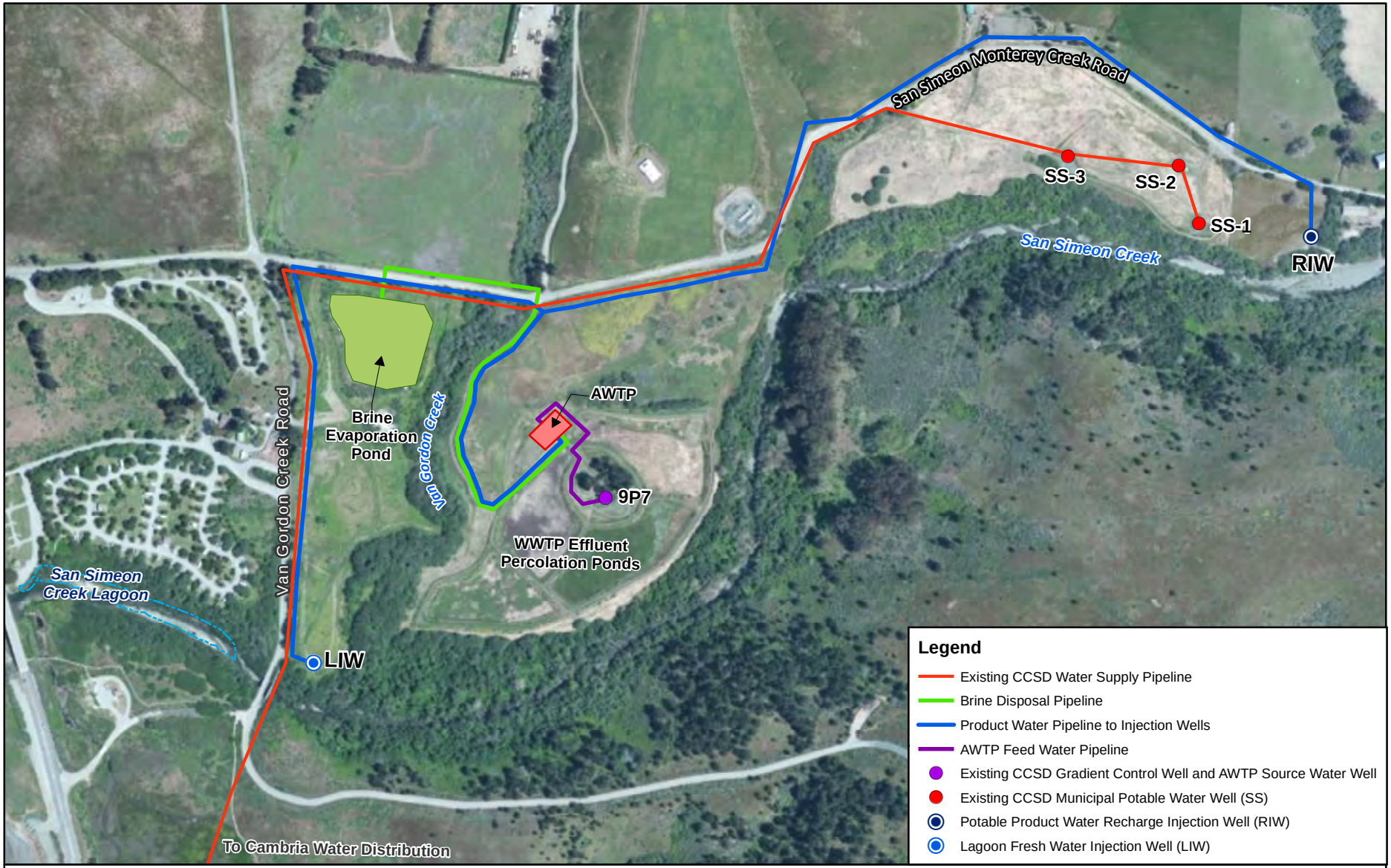
CDM Smith

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-3
Emergency Alternative 2 Summary

schellerka K:\51115_USACE-KansasCity\102849\Figure6-2_Alternative2.mxd 4/3/2014

This page intentionally left blank.



300 0 600
Feet

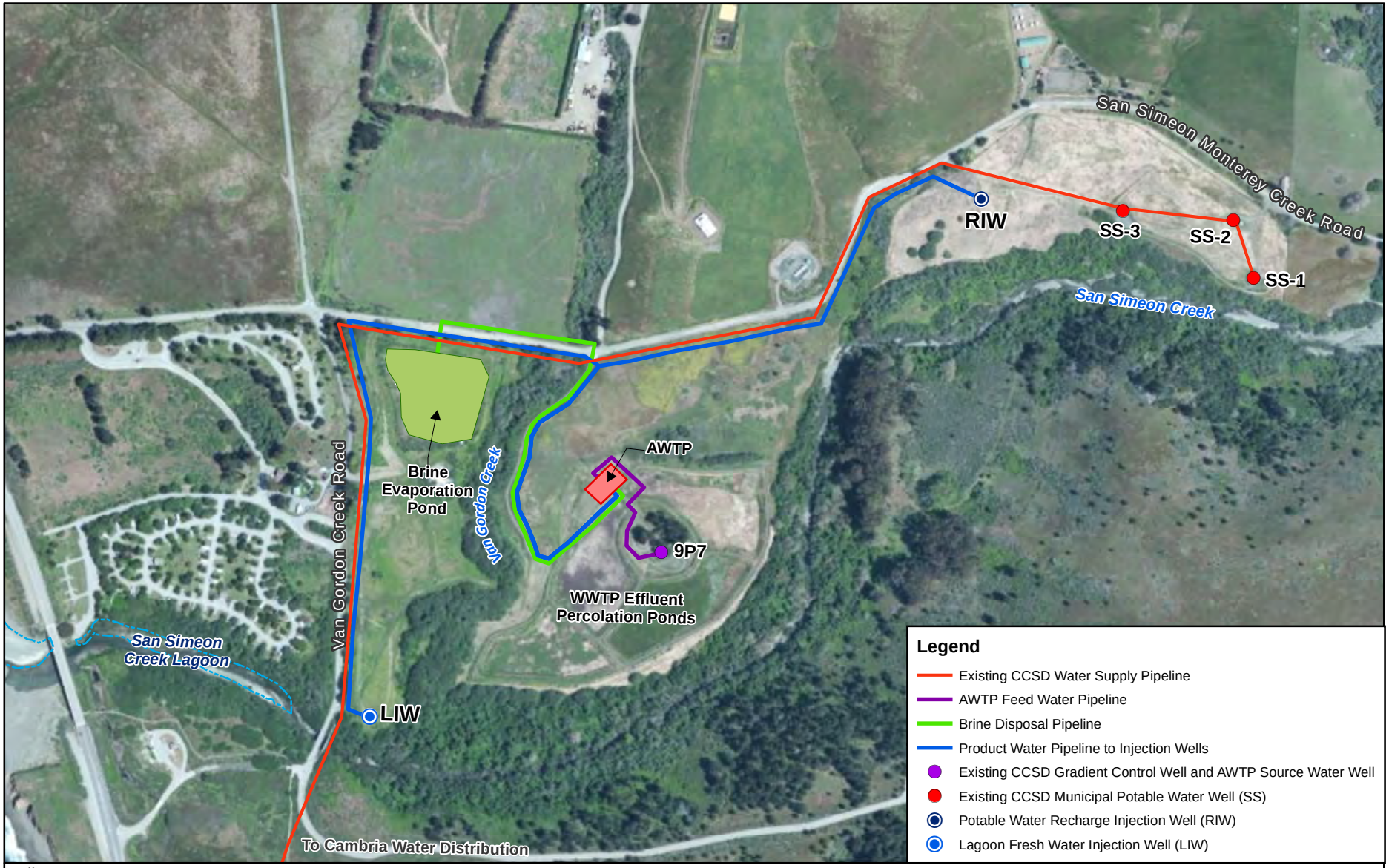
CDM Smith

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-4
Emergency Alternative 3 Summary

schellerka K:\51115_USACE-KansasCity\102849\Figure6-3_Alternative3.mxd 4/3/2014

This page intentionally left blank.



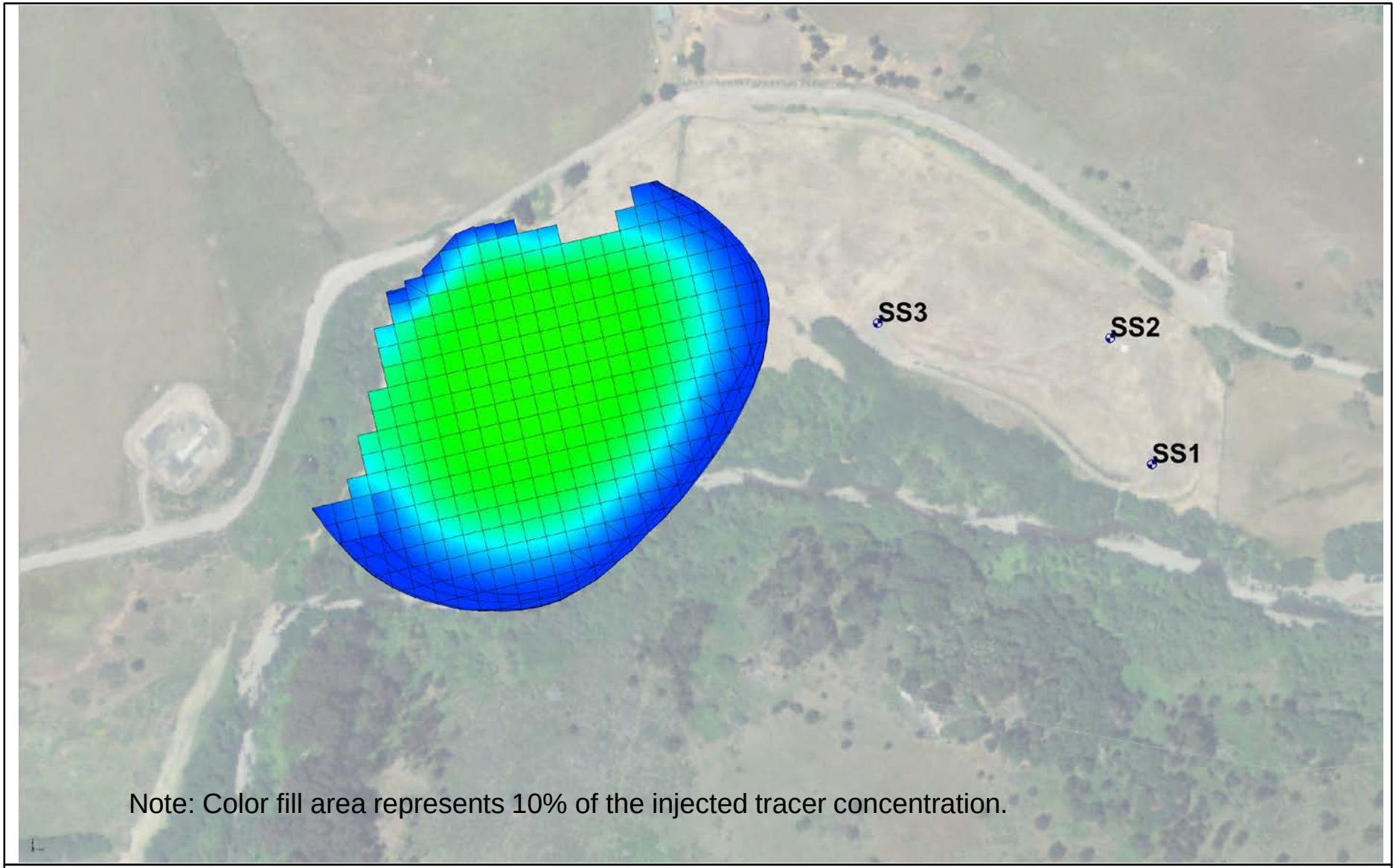
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-5
Emergency Alternative 4 Summary

CDM Smith

schellerka K:\51115_USACE-KansasCity\102849\Figure6-4_Alternative4.mxd 4/3/2014

This page intentionally left blank.



Note: Color fill area represents 10% of the injected tracer concentration.

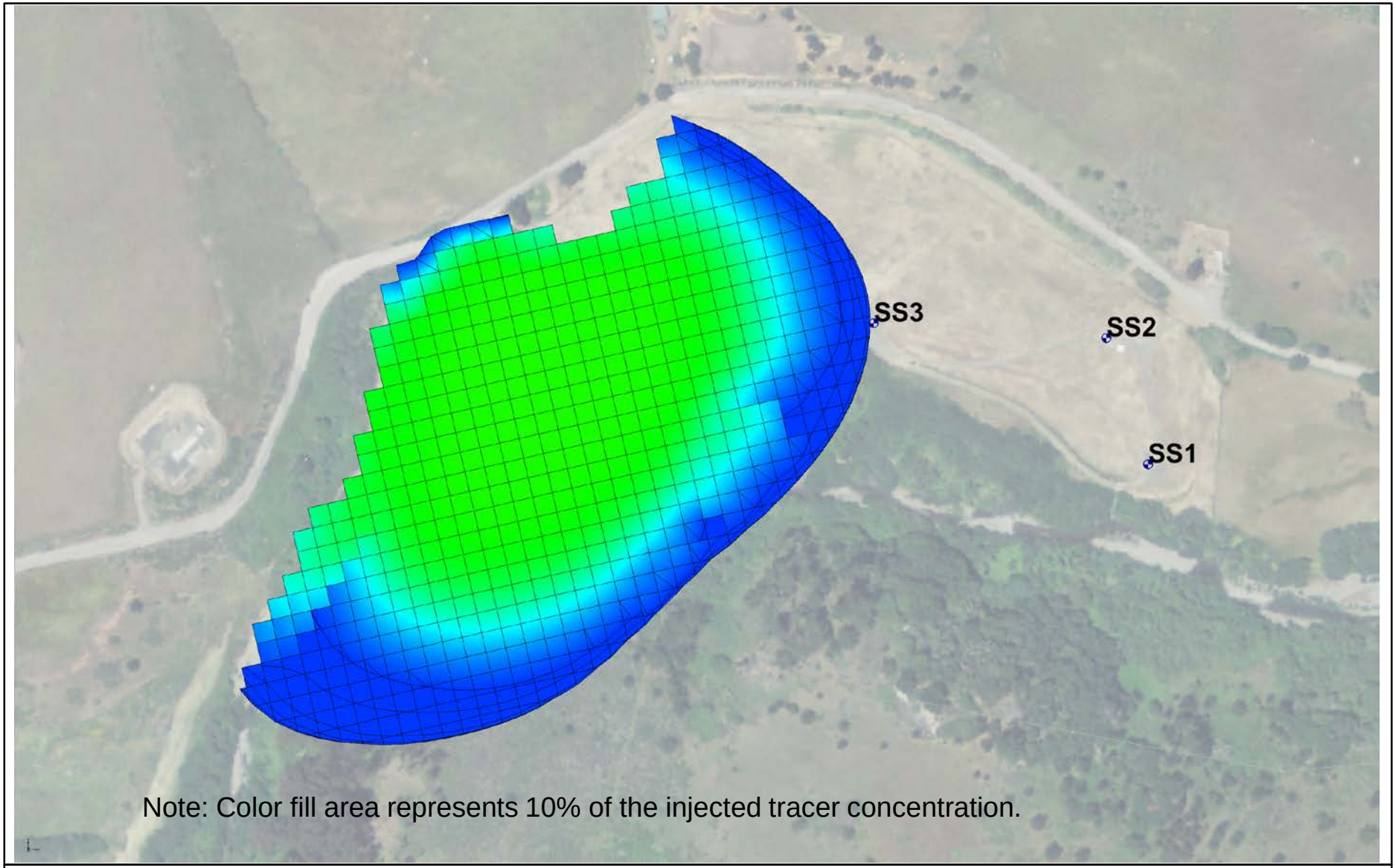
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 6-6
Simulated Tracer Extent at 30 Days

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.



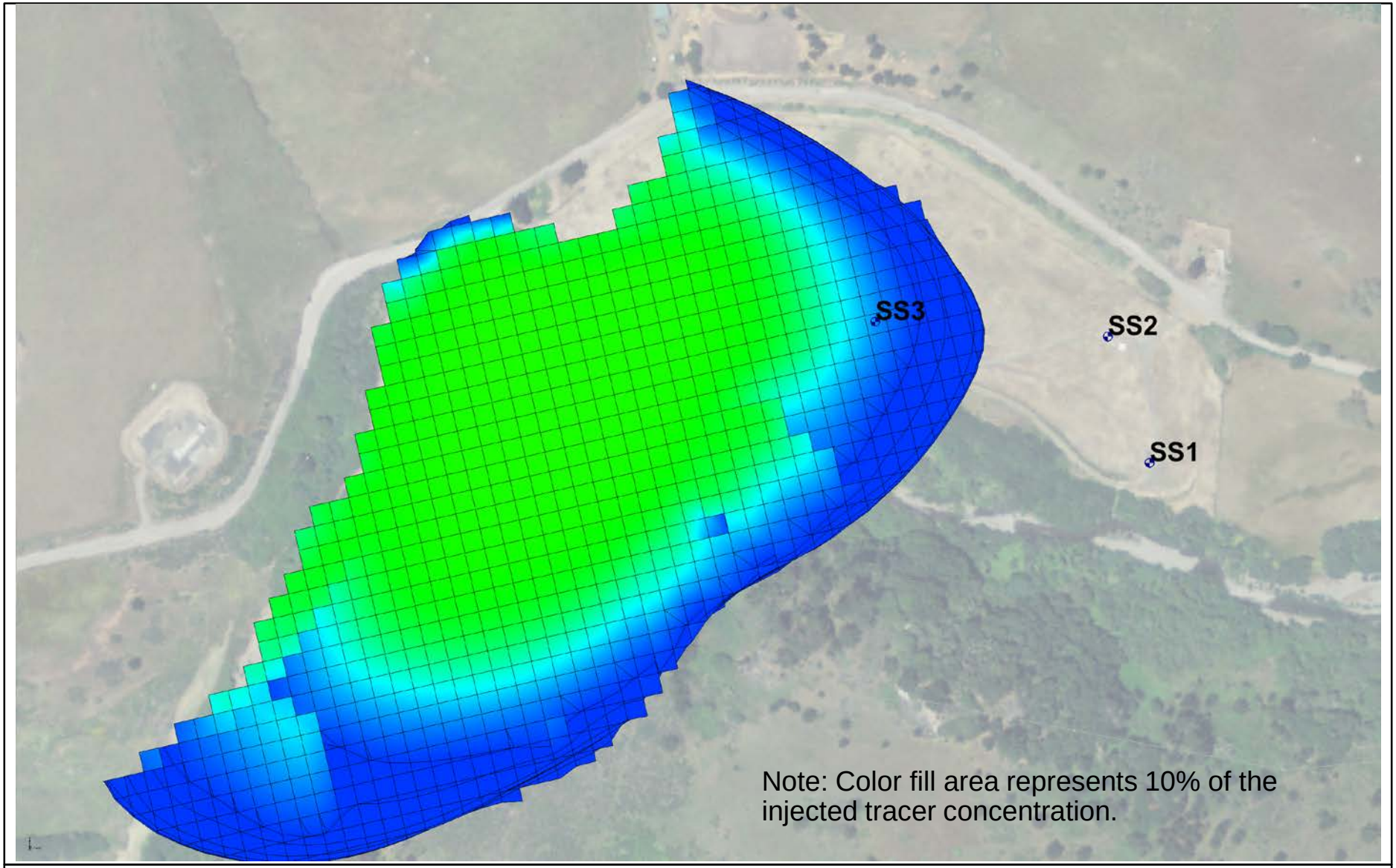
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-7
Simulated Tracer Extent at 60 Days

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.



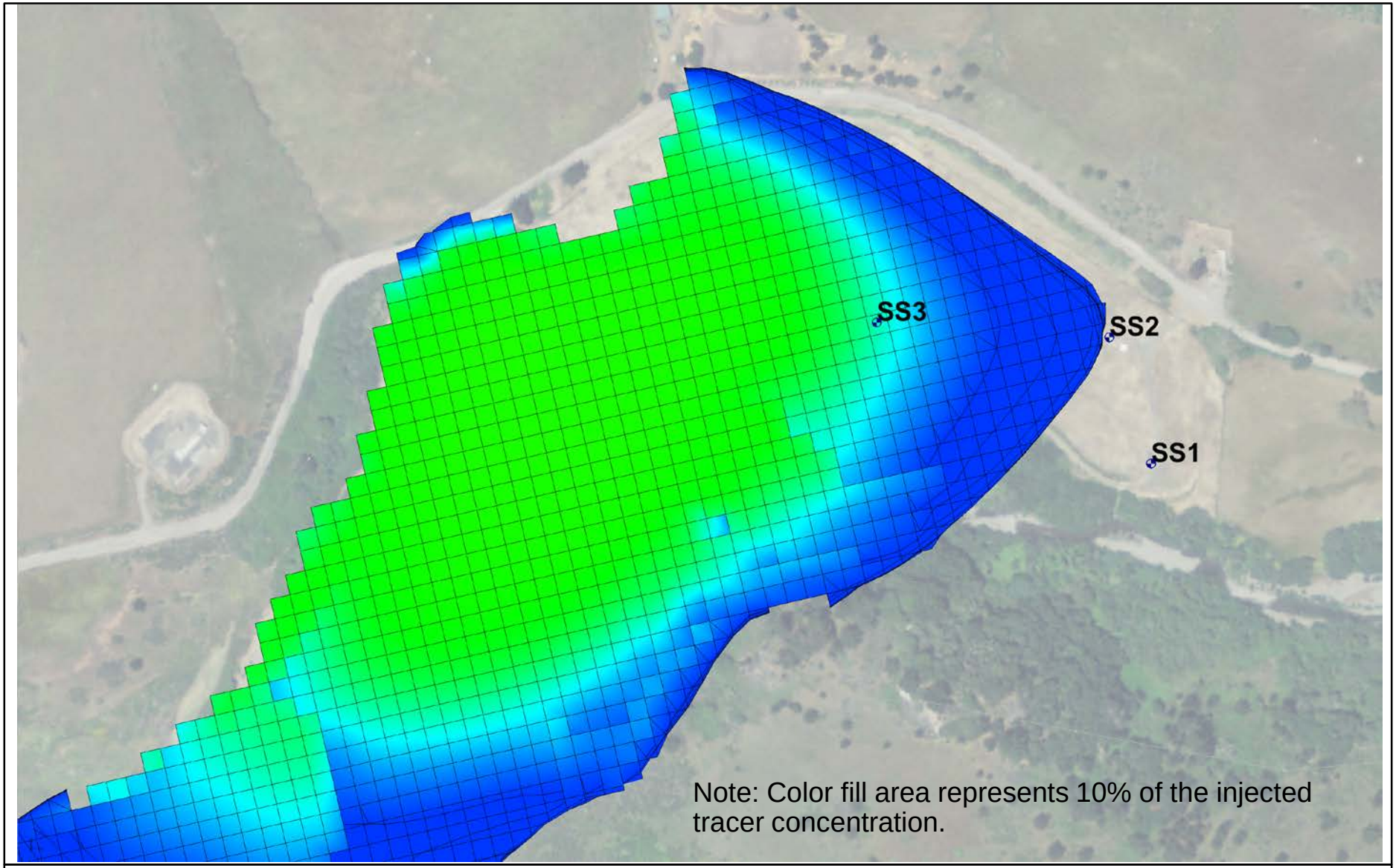
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-8
Simulated Tracer Extent at 90 Days

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.



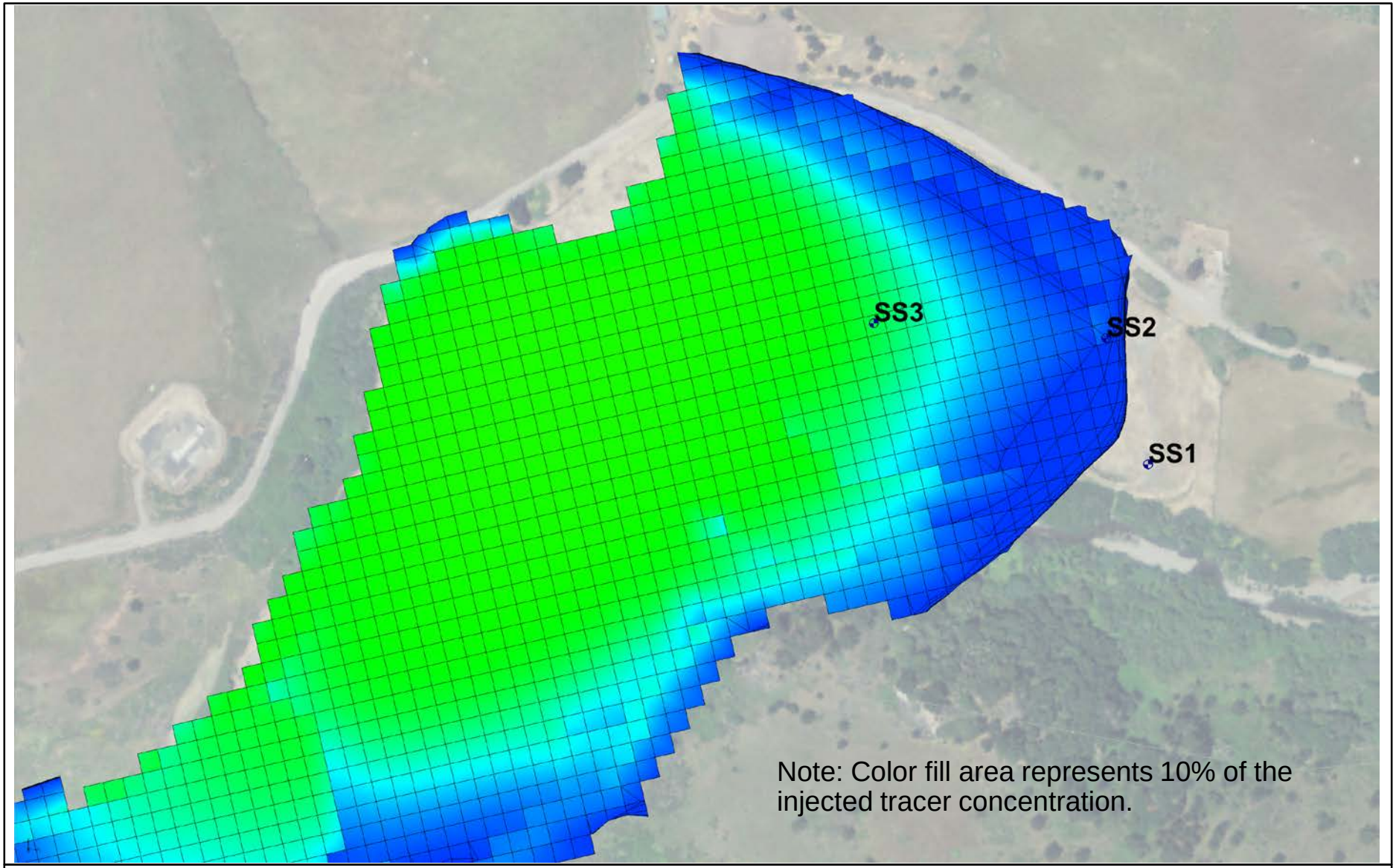
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-9
Simulated Tracer Extent at 120 Days

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.

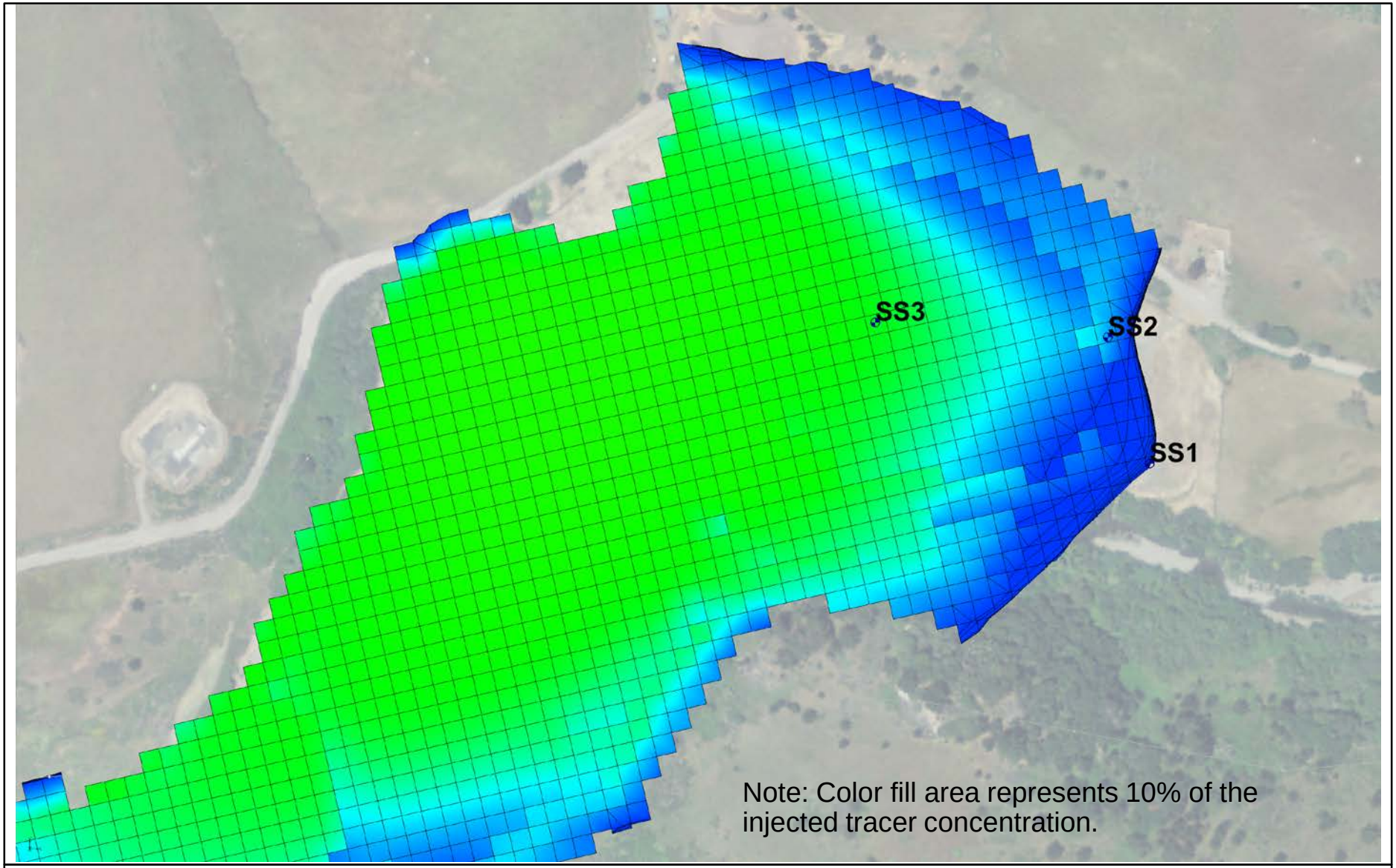


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-10
Simulated Tracer Extent at 150 Days

CDM Smith

This page intentionally left blank.



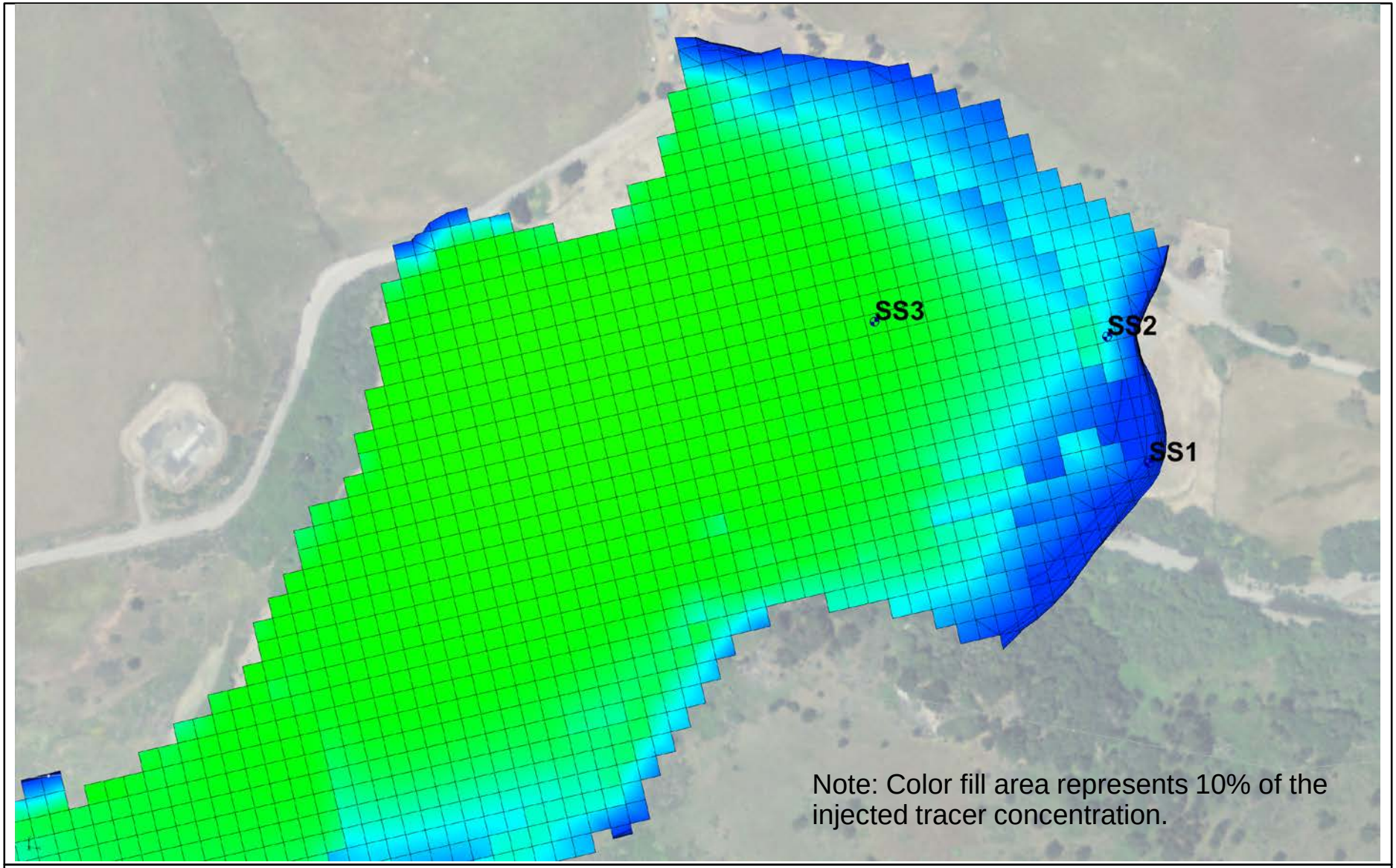
Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-11
Simulated Tracer Extent at 180 Days

CDM Smith

ramirezjj C:\Users\ramirezjj\Documents\51115 USACE\102849 Cambria\Figure 1-1_Location of Study Area with Significant Site Features.mxd 3/28/2014

This page intentionally left blank.



Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-12
Simulated Tracer Extent at 210 Days

CDM Smith

This page intentionally left blank.

N

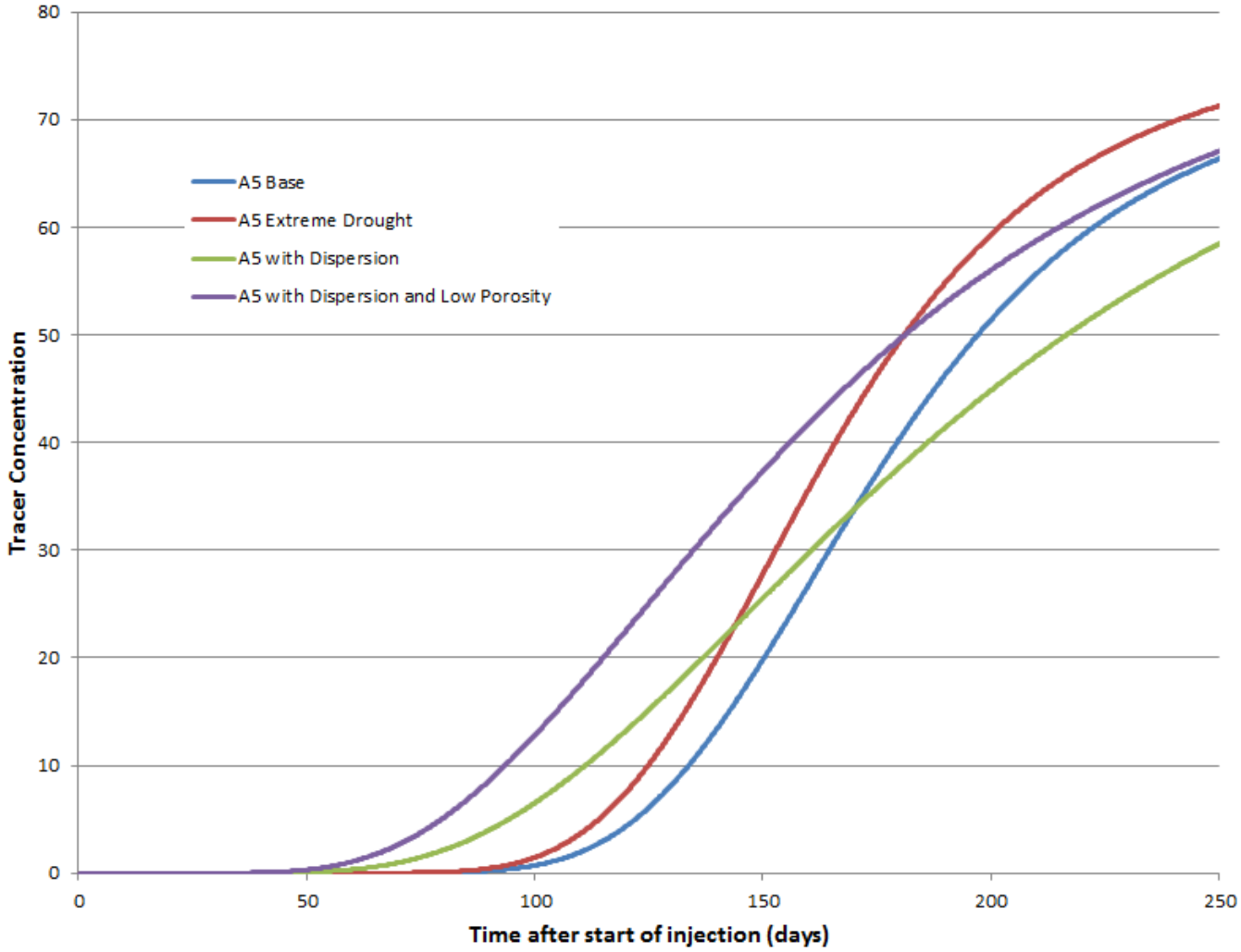
CDM Smith

Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-13

Simulated Water Levels After One Year of Operation

This page intentionally left blank.

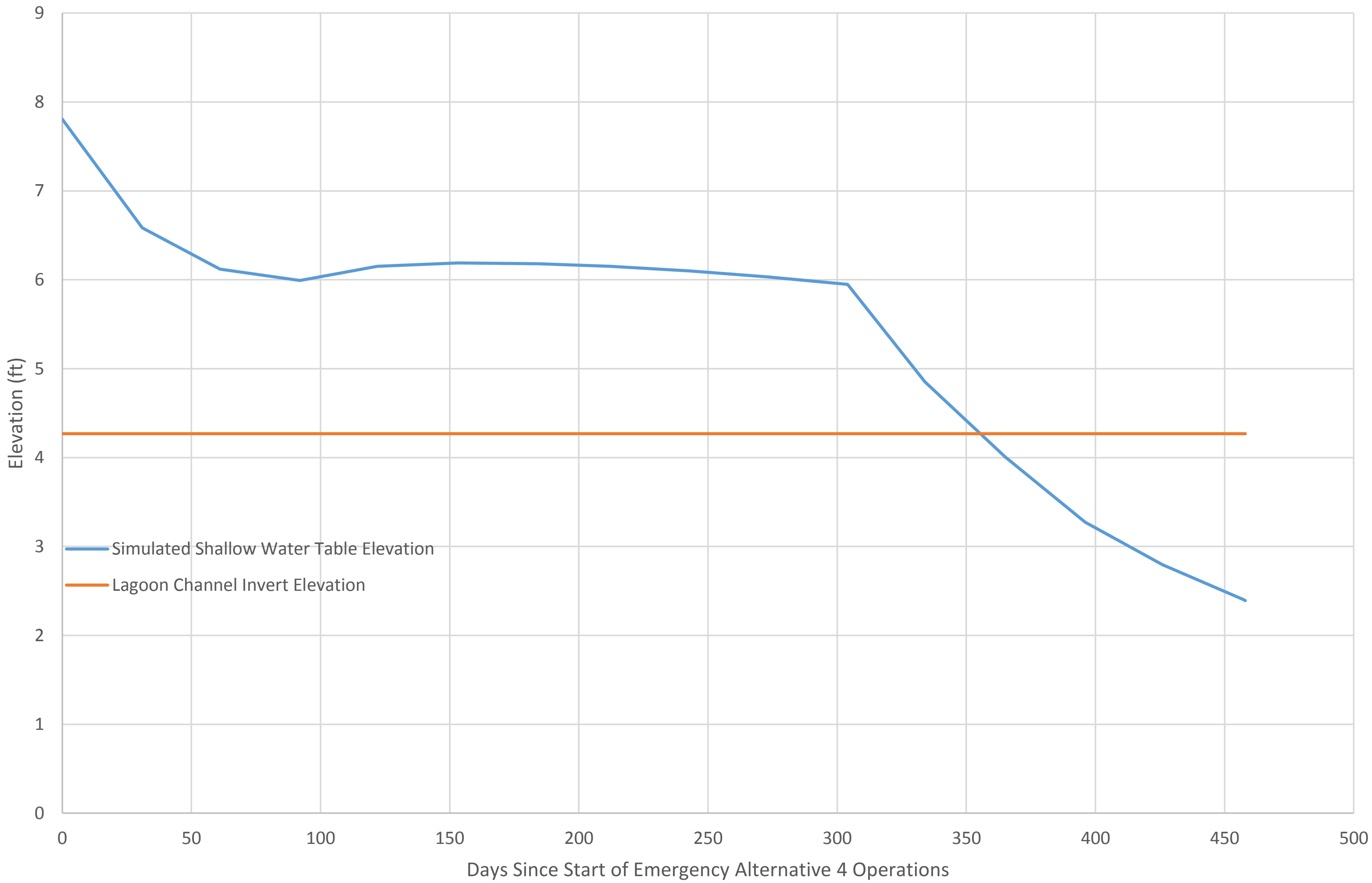


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

Figure 6-14
Simulated Tracer Breakthrough at wells SS1 and SS2

CDM Smith

This page intentionally left blank.



Cambria Emergency Water Supply Project

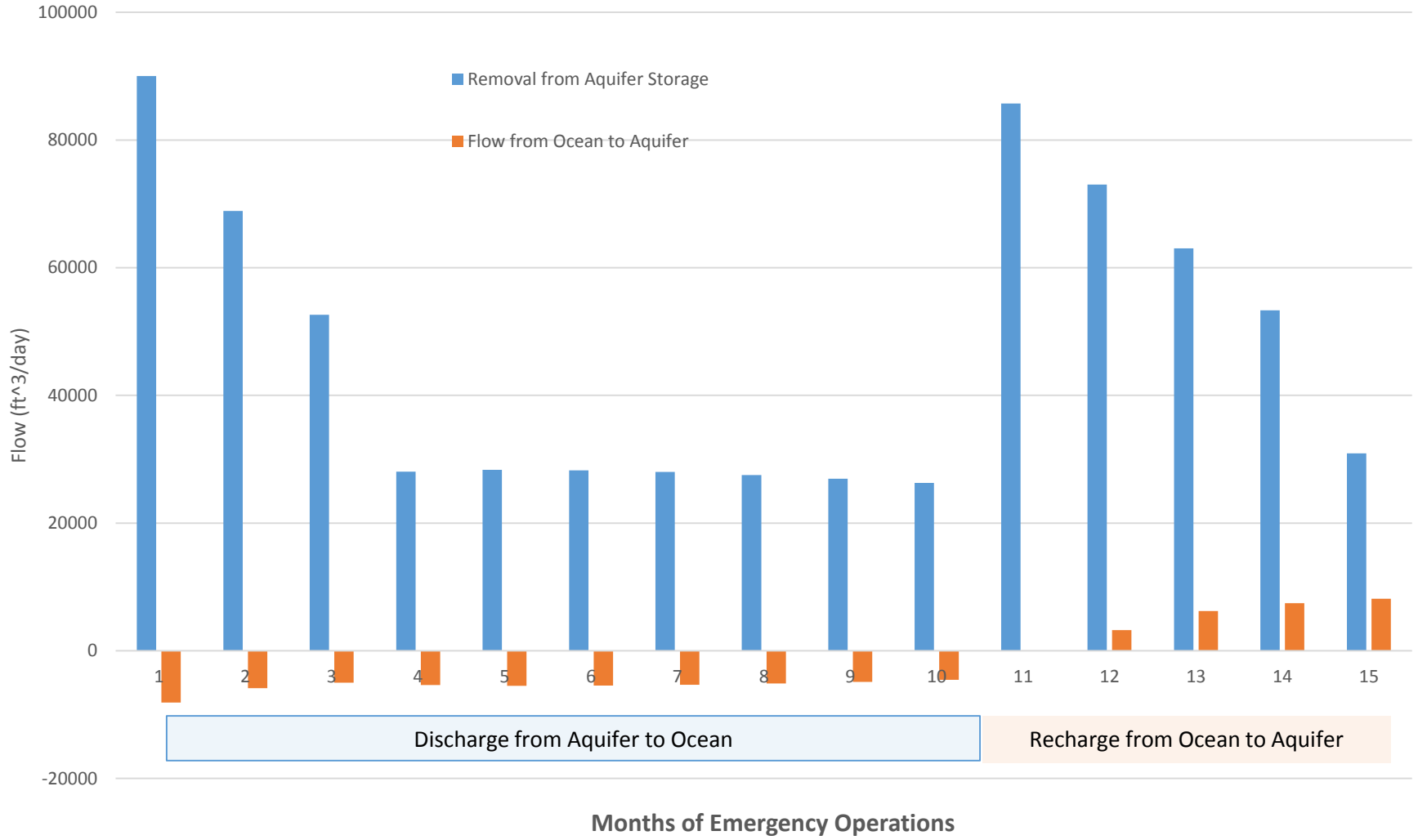
TO1: Geo-Hydrological Model

CDM Smith

Figure 6-1p

Simulated {Kl·ff2ǿ ² l·űŜ ¢l·ōfŜ !Řʔl·ŎŜyǘ ű2 CŜăK ² l·űŜ [l·Ǝ22y

This page intentionally left blank.



Cambria Emergency Water Supply Project

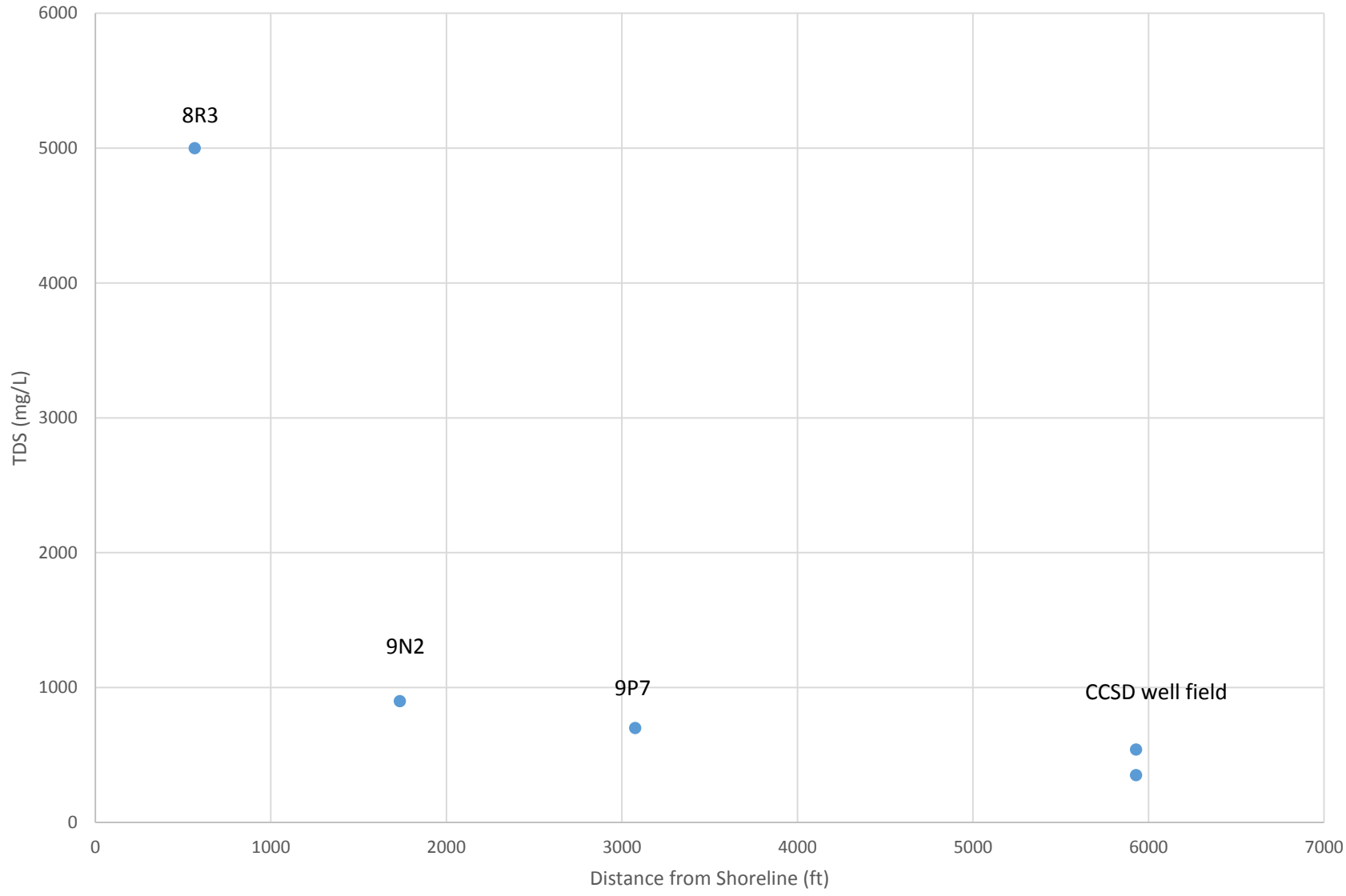
TO1: Geo-Hydrological Model

Figure 6-16

Simulated Basin Storage Depletion and Ocean Inflows and Outflows

CDM Smith

This page intentionally left blank.

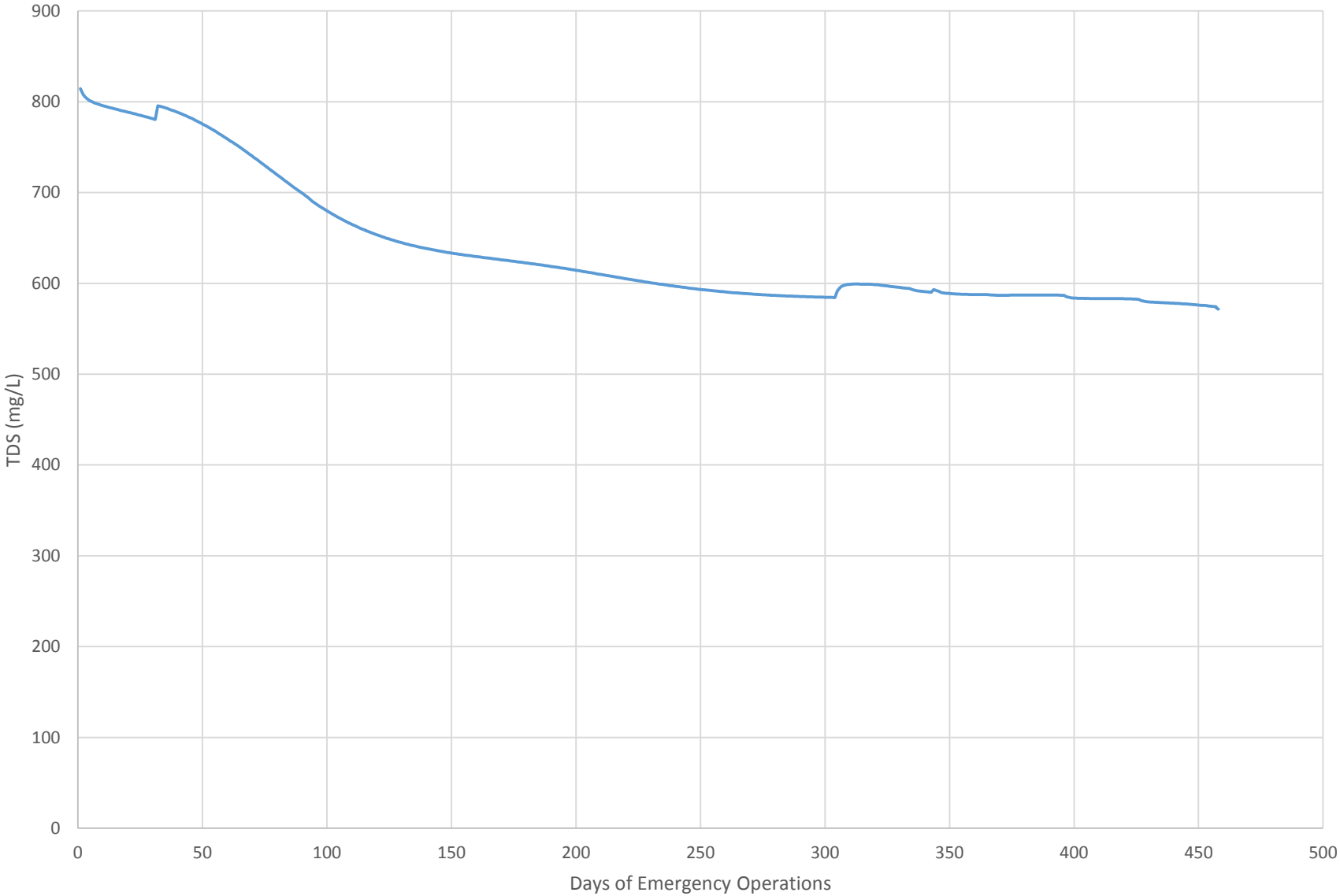


Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 6-1T
TDS Profile from Well Samples

This page intentionally left blank.



Cambria Emergency Water Supply Project
TO1: Geo-Hydrological Model

CDM Smith

Figure 6-18
Simulated TDS at Brackish Extraction Well

This page intentionally left blank.

Section 7
References

Hall, C. A., Jr.; Ernst, W. G.; Prior, S. W.; Wiese, J. W., 1979, *Geologic map of the San Luis Obispo-San Simeon Region*, *California,* US Geological Survey, Miscellaneous Investigations Series Map I-1097.

Harbaugh, Arlen W.; Banta, Edward R.; Hill, Mary C.; McDonald, Michael G., *2000 MODFLOW-2000 The U.S. Geological Survey Modular Ground-Water Model - User Guide to Modularization Concepts and the Ground-Water Flow Process*, USGS Open-File Report: 2000-92.

Langevin, C.D., Shoemaker, W.B., and Guo, Weixing, 2003, *MODFLOW-2000, the U.S. Geological Survey Modular Ground-Water Model–Documentation of the SEAWAT-2000 Version with the Variable-Density Flow Process (VDF) and the Integrated MT3DMS Transport Process (IMT):* U.S. Geological Survey Open-File Report 03-426, 43 p.

Yates, Eugene B.; Van Konyenburg, Kathryn M., 1998, *Hydrogeology, Water Quality, Water Budgets, and Simulated Responses to Hydrologic Changes in Santa Rosa and San Simeon Creek Ground-Water Basins, San Luis Obispo County, California*, U S Geological Survey, Water Resources Investigations Report 98-4061.

Yates, Eugene B., 2007, *Water Master Plan EIR: Draft Description of Groundwater Model and Simulation Results,* unpublished technical memorandum from Gus Yates to Bob Gresens, May 26, 2007.

Zheng, Chunmiao, and P. Patrick Wang, 1999, *MT3DMS, A Modular Three-Dimensional Multi-Species Transport Model for Simulation of Advection, Dispersion and Chemical Reactions of Contaminants in Groundwater Systems;* documentation and user's guide, U.S. Army Engineer Research and Development Center Contract Report SERDP-99-1, Vicksburg, MS, 202 p.

This page intentionally left blank.

TECHNICAL APPENDICES

TABLE OF CONTENTS

Appendix A
Air Quality/Greenhouse Gas Analysis Data

Appendix B
Biological Resources Assessment

Appendix C
Cultural Resources Assessment

Appendix D
Groundwater Modeling Report