INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

ORR CREEK RESERVOIR CLEANING AND INFRASTRUCTURE IMPROVEMENT PROJECT

Prepared for:

NEVADA IRRIGATION DISTRICT

Prepared by:

Janelle Nolan & associates

November 2018

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Prepared for:

NEVADA IRRIGATION DISTRICT
1036 West Main Street
Grass Valley, CA 95945

Prepared by:

Janelle Nolan & associates

881 Cumorah Court
Placerville, CA 95667
(530) 295-0502

November 2018

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ACRONYMS AND ABBREVIATIONS

AG	Attorney General
APE	Area of Potential Effects
ARB	Air Resources Board
BCC	Birds of Conservation Concern
CAAQS	California ambient air quality standard
CARP	County Aquatic Resources Program
CAT	Climate Action Team
CDFW	California Department of Fish and Wildlife
CDRA	Community Development Resource Agency
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFP	California Fully Protected
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CR	California Rare (Endangered Species Act)
CRLF	California Red Legged Frog
CSC	California species of special concern
CSD	Community Services District
CT	California Threatened (Endangered Species Act)
CUPA	Certified Unified Program Agency
CVRWQB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CWHR	California Statewide Wildlife Habitat Relationships
DPS	Distinct population segment
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EPA	Environmental Protection Act
ESA	Endangered Species Act
ESU	Evolutionary significant unit
FC	Federal Candidate (Endangered Species Act)
FCAA	Federal Clean Air Act
FPD	Fire Protection District

FT	Federally Threatened (Endangered Species Act)
FYLF	Foothill yellow-legged frog
GHG	Greenhouse Gas Emissions
HCP	Habitat Conservation Plan
LCFS	Low carbon fuels standard
LOS	Levels of service
MBTA	Migratory Bird Treaty Act
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration
MR	Mineral reserve
MT	Metric tons
NAAQS	National ambient air quality standard
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NCIC	North Central Information Center
NOA	Naturally occurring asbestos
NO_X	nitrous oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OPR	Office of Planning and Research
OS	Open Space
PCAPCD	Placer County Air Pollution Control District
PCCP	Placer County Conservation Plan
PCTPA	Placer County Transportation Planning Agency
PFL	Professional Forester's Law
PG&E	Pacific Gas & Electric
PSD	Public Services District
ROC	Reactive organic compound
ROG	Reactive organic gases
RP	Riparian Drainage
RPW	Relatively permanent waters
RR	Rural Residential
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board

SPCP	Spill prevention and control plan
SVAB	Sacramento Valley Air Basin
TTLC	Total Threshold Limit Concentration
UAIC	United Auburn Indian Community
UC	University of California
US	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Services
WDR	Waste discharge requirements
WOS	Waters of the State
WOUS	Waters of the United States
WPWMA	Western Placer Waste Management Authority
WQMP	water quality monitoring plan
WTP	water treatment plant
WWTP	wastewater treatment plant

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EXECUTIVE SUMMARY

The Nevada Irrigation District (the District) proposes to implement the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project (Proposed Project or Project), which includes cleaning the Orr Creek Reservoir to restore it to its original storage capacity, as well as implementation of repairs and improvements to the dam and related infrastructure. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and State CEQA Guidelines, Title 14 California Code of Regulations 15000 et seq.

Orr Creek Reservoir is located just north of the City of Auburn, Placer County, California, at an elevation of 1,260 feet above mean sea level (msl) (Figure 1). The reservoir is located on District-owned property (approximately 30 acres) and is surrounded by privately owned rural residential properties. The Project area is accessible via Highway 49 to Lorenson Road. From Highway 49, turn east on Lorenson Road. After approximately 0.43 mile, continue straight on Edwards Lane. After approximately 0.07 mile, take the first right off Edwards Lane. This private gravel access road leads to a District gate and continues to the south shore of Orr Creek Reservoir. A plan view map of the Project is shown in Figure 2.

Since the Orr Creek Dam was constructed, silt and sediment have deposited in the reservoir, resulting in a significant reduction in its water storage capacity from the designed 27 acre-feet to an estimated current capacity of 3–4 acre-feet. The District proposes to:

- Remove an estimated 10,000 cubic yards of accumulated sediment from the reservoir and restore a portion of its original 27 acre-feet of storage capacity;
- Repair and improve the dam infrastructure including repairing cracks that have formed in the concrete dam structure;
- Replace and realign the diversion pipe to the Gold Hill I Canal to increase efficiency and improve access for the District personnel; and
- Add a low-level outlet at the base of the dam through which water could be released downstream into Orr Creek to maintain the storage capacity of the dam and improve downstream aquatic habitats.

Therefore, the purpose of the Project is to improve the efficiency of the District's raw water delivery systems by restoring the storage capacity of the reservoir and improving the reliability and safety of the associated dam and water delivery infrastructure.

CEQA ANALYSIS AND FINDINGS

Approval of the Proposed Project by the District Board of Directors would be considered a discretionary action and therefore subject to review under the California Environmental Quality Act (CEQA). As the Lead Agency, the District prepared an Initial Study/Mitigated Negative Declaration (IS/MND), which assesses the potential environmental impacts of the Project. In accordance with CEQA guidelines, the IS/MND will be circulated for 30 days for public review. Under CEQA guidelines, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affect by the Project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (Guidelines Section 15382). This executive summary provides an overview of the findings of the IS/MND including resources for which the Project would have

no impact; (b) less than significant impacts; and (c) less than significant impacts with incorporation of mitigation measures. The mitigation measures are summarized in Table 1. Refer to Section 3 of the IS/MND for a more detailed analysis of potential effects and proposed mitigation measures.

NO IMPACT

The Proposed Project would have no impact on the following resources:

- Mineral Resources; and
- Recreation.

LESS THAN SIGNIFICANT IMPACTS

The Proposed Project would have less than significant impacts on the following resources:

- Aesthetics;
- Greenhouse Gases and Climate Change;
- Population and Housing;

The Proposed Project would have less than significant impacts on the following resources with incorporation of mitigation:

- Agriculture and Forest Resources;
- Air Quality;
- Biological Resources;
- Cultural and Tribal Resources;
- Geology, Soils, and Seismicity;
- Hazards and Hazardous Materials;
- Hydrology and Water Quality;
- Land Use and Planning;
- Noise;
- Public Services;
- Transportation/Traffic; and
- Utilities and Service Systems.

As required by CEQA, a Mitigation Monitoring and Reporting Program (MMRP) (Table 1) will be adopted at the time of Project approval. It will include those mitigation measures that would reduce environmental impacts to less than significant levels.

SIGNIFICANT UNAVOIDABLE IMPACTS

There are no significant and unavoidable Project-specific or cumulatively considerable impacts associated with implementation of the Proposed Project.

1 INTRODUCTION

1.1 Introduction and Regulatory Guidance

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the Nevada Irrigation District (the District) to evaluate the potential environmental effects of the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project (Proposed Project or Project), which includes the cleaning of the Orr Creek Reservoir to restore it to its original storage capacity, as well as implementation of repairs and improvements to the dam and related infrastructure. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and State CEQA Guidelines, Title 14 California Code of Regulations 15000 et seq. A summary of permits and agency approvals required for the construction of the Proposed Project is provided in Section 2.7, Reviewing Agencies - Permits and Approvals.

This IS/MND was prepared by the District (the Lead Agency) to determine if the Proposed Project could have significant impacts on the environment. In accordance with the State CEQA Guidelines 15064(a), an environmental impact report (EIR) must be prepared if there is substantial evidence that a Project may have significant impacts on the environment. If the Lead Agency determines that there is no substantial evidence for such impacts, or if the potential impacts can be reduced through Project revisions, a mitigated negative declaration or a negative declaration, can be prepared (CEQA Guidelines 15070(b)).

1.2 Environmental Document

The District is the Lead Agency for the Proposed Project and has determined that an IS/MND is the appropriate document for compliance with CEQA. The purpose of this document is to present to the public the environmental consequences of implementing the Proposed Project. This document has been prepared consistent with the 20153 State CEQA Guidelines.

This disclosure document is being made available to the public for review and comment. The IS/MND is available for a 30-day public review period from November 30, 2018 to December 31, 2018 at 5:00 p.m.

Please address written comments to:

Kris Stepanian, Board Secretary
Nevada Irrigation District Business Center
1036 West Main Street
Grass Valley, CA 95945

E-mail comments may be addressed to: Kris Stepanian, stepaniank@nidwater.com

If you have questions regarding this IS/MND, please call Gary D. King, P.E., Ph.D. at (530) 273-6185. If you wish to send written comments (including via e-mail), they must be received no later than December 31, 2018, by 5:00 p.m.

Upon completion of the public review period, the District staff will provide the District Board of Directors with the public and agency comments received on the IS/MND along with a recommendation for the final action to the Board for its consideration.

The District Board may: (1) adopt the mitigated negative declaration and approve the Proposed Project; (2) undertake additional environmental studies; or (3) abandon the Proposed Project.

This IS/MND is available for public review at the following locations:

Nevada Irrigation District Business Center
1036 W. Main Street
Grass Valley, CA 95945

Auburn Public Library
350 Nevada Street
Auburn, CA 95603

This document also can be downloaded from the District website: http://www.nidwater.com.

1.3 Summary of Findings

Section 3 of this document contains the analysis and discussion of potential environmental impacts resulting from implementation of the Proposed Project.

Based on the resources evaluated, it was determined that the Proposed Project would have no impact on the following resources:

- Mineral Resources; and
- Recreation.

Impacts of the Proposed Project were determined to be less than significant for the following resources:

- Aesthetics;
- Greenhouse Gases and Climate Change;
- Land Use and Planning; and
- Population and Housing.

Impacts of the Proposed Project to the following resources would be less than significant with incorporation of the mitigation measures described in Section 3 and the MND included with this document:

- Agriculture and Forest Resources;
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Geology, Soils, and Seismicity;
- Hazards and Hazardous Materials;
- Hydrology and Water Quality;

- Land Use and Planning;
- Noise;
- Public Services;
- Transportation/Traffic; and
- Utilities and Service Systems.

As required by CEQA, a Mitigation Monitoring and Reporting Program (MMRP) has been prepared and is included with this IS/MND. It will be adopted at the time of Project approval. It will include those mitigation measures that would reduce environmental impacts to less than significant levels.

1.4 Document Purpose and Organization

The purpose of this document is to evaluate the potential environmental effects of the cleaning of the Orr Creek Reservoir to restore it to its original storage capacity, as well as implementation of repairs and improvements to the dam and related infrastructure.

This document is organized in the following manner:

- **Section 1 - Introduction.** This section provides an introduction and describes the purpose, scope, and organization of this document.
- **Section 2 - Project Description.** This section describes the purpose and need of the Proposed Project, the Proposed Project objectives, and a description of the Proposed Project's characteristics.
- **Section 3 - Environmental Checklist.** This section provides the environmental setting for the Proposed Project, analyzes the environmental impacts of the Proposed Project, and recommends mitigation measures where appropriate. Resource topics appear in the order that they occur in the CEQA Environmental Checklist from Appendix G of the State CEQA Guidelines. Mitigation measures are incorporated and discussed, where appropriate, to reduce "potentially significant" impacts to a "less than significant" level. Mandatory Findings of Significance also are presented in this section.
- **Section 4 - Agencies and Persons Consulted.** This section identifies agencies and persons consulted regarding environmental resource topics during preparation of this document.
- **Section 5 - List of Preparers.** This section contains a list of people that assisted in the preparation of this document.
- **Section 6 - References.** This section identifies the references used in the preparation of this document.

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2 PROJECT DESCRIPTION

2.1 Project Location

Orr Creek Reservoir is located just north of the City of Auburn, Placer County, California, at an elevation of 1,260 feet above mean sea level (msl) (Figure 1). The reservoir is located on District-owned property (approximately 30 acres) and is surrounded by privately owned rural residential properties. The Project area is accessible via Highway 49 to Lorenson Road. From Highway 49, turn east on Lorenson Road. After approximately 0.43 mile, continue straight on Edwards Lane. After approximately 0.07 mile, take the first right off Edwards Lane. This private gravel access road leads to a District gate and continues to the south shore of Orr Creek Reservoir.

2.2 Project Purpose and Objectives

The Orr Creek Reservoir is part of the District's Bear River water supply system and stores untreated, raw water from Orr Creek. The original (historical) storage capacity of the reservoir is approximately 27 acre-feet. The District is proposing to remove sediment, make minor repairs to the dam, and implement infrastructure improvements.

The Orr Creek Dam was constructed between 1944 and 1953. The dam is used to divert water into the Gold Hill I Canal via an approximately 220-foot-long diversion pipe located on the southern side of the dam. The pipe is equipped with a spill system to discharge excess water not used for irrigation back into Orr Creek, which eventually feeds into Coon Creek. The dam is also equipped with a spillway on its northern end to prevent high water events that can overtop or damage the dam.

Since the Orr Creek Dam was constructed, silt and sediment have deposited in the reservoir, resulting in a significant reduction in its water storage capacity from the designed 27 acre-feet to an estimated current capacity of 3–4 acre-feet. The District proposes to:

- Remove an estimated 10,000 cubic yards of accumulated sediment from the reservoir and restore a portion of its original 27 acre-feet of storage capacity;
- Repair and improve the dam infrastructure, including repairing cracks that have formed in the concrete dam structure;
- Replace and realign the diversion pipe to the Gold Hill I Canal to increase efficiency and improve access for the District personnel; and
- Add a low-level outlet at the base of the dam through which water could be released downstream into Orr Creek to maintain the storage capacity of the dam and improve downstream aquatic habitats.

Therefore, the purpose of the Project is to improve the efficiency of the District's raw water delivery systems by restoring the storage capacity of the reservoir and improving the reliability and safety of the associated dam and water delivery infrastructure.

2.3 Project Components

This section provides a description of the Proposed Project components including access, staging areas, and sediment laydown areas; reservoir cleaning (i.e., sediment and vegetation removal); dam repairs; diversion pipe replacement and realignment; installation of a low-level outlet; and construction equipment to be used; and the proposed construction schedule.

2.3.1 Access, Staging Areas, and Sediment Laydown Areas

Primary access to the reservoir will be via Lorenson Road and Edward Road. These are private roads that will not require any grading or other improvements. In addition, the District may also use a secondary route that provides access to the north side of the reservoir from Cramer Road (Figure 2). This District-owned road is approximately 500 feet long, and will require minor improvements (such as addition of gravel), including brush clearing and grading prior to use.

Construction and equipment staging would be restricted to areas within the prism of the existing access roads described above, or to predisturbed areas adjacent to the dam. In addition, the District may also stage equipment (e.g., pumps and generators) within the dewatered reservoir bed during the reservoir cleaning, dam repair, or infrastructure improvement activities described below.

After removal of sediment, the sediment would be allowed to dry prior to hauling off-site. Laydown areas for drying sediment would be established on District-owned land adjacent to the reservoir. The total area required for drying of sediments would be between 1.8 and 3.7 acres, depending on the depth of the drying piles. Sediment shall be sampled and analyzed to assess sediment quality and identify any potential hazards to the public or environment during excavation, transportation, and reuse and/or disposal of the sediment. See Table 1, HYD-5 for further sampling details. Preliminary sediment sampling was completed in January 2018. The chemical characterization of the sediment did not detect concentrations of organic or inorganic constituents that exceed the corresponding human health screening levels or that were notably elevated with respect to regional background conditions (NID 2018).

A plan view of Project access routes, staging, and sediment laydown areas is provided in Figure 2.

2.3.2 Reservoir Dewatering

The timing of dewatering of Orr Creek Reservoir will be dependent on which method of reservoir cleaning that is used. If the District chooses to remove sediments using mechanical excavation, the reservoir would be drained prior to the excavation. If the District chooses to remove sediments using hydraulic suction dredging, the reservoir would be dewatered following completion of the dredging but prior to repair work on the dam.

The reservoir would be gradually dewatered by allowing water to flow through the existing outlet pipe. Refer to Figure 3 for a depiction of the location of temporary coffer dams and piping that would be installed to maintain flows into Orr Creek downstream of the reservoir and into the Gold Hill I Canal during excavation. Once sufficient water has drained, temporary coffer dams (e.g., sandbag dikes) would be installed in Orr Creek upstream of the reservoir and at the existing spillway. Diversion piping (36-inch polyethylene pipe) would be used to divert flows from Orr Creek upstream of the reservoir, through both cofferdams, and into spillway to maintain minimum flows into Orr Creek. In addition, 12-inch polyethylene pipe would be installed to divert water from the knife valve at the existing spillway along the dam, and into

a link seal within the existing 30-inch pipe that provides water to the Gold Hill I Canal. The temporary coffer dams and diversion piping would be removed following completion of work and prior to refilling of the reservoir.

2.3.3 Reservoir Cleaning

The District will remove approximately 10,000 cubic yards of sediment to restore the reservoir to a portion of its original 27-acre-foot storage capacity. Once the Project is initiated, the District anticipates that sediment removal would occur over three, 120-day work seasons over 3 years. A maximum of 4,000 cubic yards of sediment will be removed in a single work season. If sediment removal in any work season is curtailed due to funding, weather, or other unforeseen circumstances, additional work seasons may be required for removal of the remaining sediment. The District anticipates using either mechanical excavation or hydraulic suction dredging methods to remove sediment from the reservoir. Each of these methods is described below.

- **Mechanical excavation:** If the District removes sediment using mechanical excavation, the reservoir would be drained prior to excavation, as described in Section 2.3.2 above. The District would use heavy equipment such as excavators, front-end loaders, dozers, or draglines to remove sediment.
- **Hydraulic suction dredging:** Hydraulic suction dredging, which would allow the District to pump the sediment from the bottom of the reservoir without first draining the reservoir, would be implemented using a smaller dredger mounted a float or barge, or a stationary dredger that operates from the bank of the reservoir. The sediment is delivered through the dredge from the reservoir in the form of a slurry. The sediment could then be dewatered mechanically or air-dried as described below. The suction dredger would have a silt curtain anchored around the dredging operations at all times. The curtain will be designed to contain turbidity caused by dredging activity, resist wind, waves, and exclude fish from entering the dredging area. If hydraulic suction dredging is implemented, the reservoir will be drawn down following completion of the dredging to allow for the repairs described in Sections 2.3.4 through 2.3.5, below.

The excavated sediment would be stockpiled in temporary laydown areas on District-owned lands adjacent to the reservoir (refer to Section 2.3.1) and allowed to dry until approximately 50% of the liquid has evaporated. Sediments would be dried in lined containment structures. Following the drying process, excavated sediment would be loaded into trucks and hauled off-site for disposal or use, as appropriate.

2.3.4 Dam Repairs

Once the reservoir has been drained and sediment removed, the District will inspect the concrete dam structure and repair cracks or other structural weaknesses using shotcrete, bentonite clay, or similar materials.

2.3.5 Diversion Pipe Replacement and Realignment

The existing 24-inch diversion pipe (approximately 220 feet long), which carries water from the reservoir into the Gold Hill I Canal, is deteriorated and requires replacement. In addition, the current alignment of the piping is difficult to access for maintenance and repairs. Therefore, the District proposes to remove the existing diversion pipe and replace it with similar 30-inch pipe (at a minimum). The pipe alignment will be adjusted to allow for easier maintenance access.

2.3.6 Installation of Low-Level Outlet

The District proposes to install a new low-level outlet near the base of the dam to allow for water to be released directly into Orr Creek during the non-irrigation season. Flow releases will be controlled using a valve. An energy dissipation structure would be installed at the outfall to reduce water velocity and prevent erosion.

2.3.7 Construction Equipment

Construction equipment that would be used for implementation of the Project would include the following:

- Hydraulic suction dredging equipment (if the hydraulic suction dredging option is implemented)
- Generators
- Rubber-tired backhoe
- Water truck
- Dozers
- Pickup trucks
- Excavator
- Front-end loaders
- Delivery trucks/trailers
- Dump trucks
- Small skid loader
- Fuel/oil service trucks
- Air compressor

2.3.8 Construction Schedule

The Project will be implemented in the fall/winter outside the irrigation season. It is estimated that the Project will be completed in three 120-day work seasons over 3 years, barring delays due to funding, weather, or other unforeseen circumstances, until the Project is complete.

2.4 Reviewing Agencies – Permits and Approvals

The agencies listed below will be consulted and will participate in review of the IS/MND to ensure compliance with applicable rules and regulations. Also noted are permits or other approvals that may potentially be required for the construction or operation of the Proposed Project.

- U.S. Army Corps of Engineers (USACE) – Clean Water Act (CWA) Section 404 Permit.
- U.S. Fish and Wildlife Service (USFWS) – Federal Endangered Species Act (ESA) Consultation.
- California Air Resources Board (ARB) – State CEQA reviewing agency.
- California Department of Fish and Wildlife (CDFW) – California Fish and Game Code (including Section 1602 Streambed Alteration Agreement), State CEQA reviewing agency.

- Regional Water Quality Control Board (RWQCB) – CWA Section 401 Certification, CWA Section 402 NPDES Construction General Permit, or California Water Code Waste Discharge Requirement (WDR)
- Placer County Air Pollution Control District (PCAPCD) – Authority to Construct Permit, Permit to Operate.

Table 1. Mitigation Monitoring and Reporting Program, Nevada Irrigation District Orr Creek Reservoir Cleaning and Infrastructure Improvement Project.

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
AIR-1. Air Quality Best Management Practices. The District will implement all applicable best management practices (BMPs) employed by the Placer County Air Pollution Control District (PCAPCD) under Rule 228 (Appendix B). These BMPs will be incorporated into construction specifications and implemented by the contractor during construction.	During Construction	District	District
AIR-2. Stockpile Odor Reduction. Sediment piles placed in upland areas for drying will be periodically overturned/rowed up to reduce the potential for odor emission.	During Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
BIO-1. General Construction Measures. The District will implement the following to minimize disturbance of sensitive resources in the Project area: ▪ Construction activities will be limited to a designated work area (including the work corridor and staging area). The work area will be clearly identified on the construction drawings and will be staked and flagged where necessary prior to initiation of construction activities. ▪ All staging areas and access routes will be located on developed roads and areas that have already been disturbed. ▪ Construction activities, including activities within equipment staging areas, will be limited to the hours between sunrise (but no earlier than 7:00 a.m.) and sunset (but no later than 7:00 p.m.) on weekdays. Construction work on weekends and District-recognized holidays will be avoided when practical. If required, work on weekends and District-recognized holidays will be limited to the hours between 8:00 a.m. and 7:00 p.m. ▪ Vegetation removal will be limited to that which is necessary for implementation of the Project. This includes removal of approximately 0.7 acre of vegetation on the western shoreline of Orr Creek reservoir adjacent to the dam and approximately 0.11 acre on the eastern shoreline; as well as up to 10 trees for the realignment of the diversion to the Gold Hill I Canal. No other vegetation will be removed. ▪ The District will implement the following between-season activities: ▪ Any sediment stockpiled in upland areas will be removed and disposed of properly prior to the next work season; ▪ All equipment and vehicles will be removed from the Project site; and ▪ District will resume normal reservoir operations.	During Construction	District	District
BIO-2. Environmental Awareness Training. Construction personnel will attend an environmental awareness training prior to initiation of construction. The training will include a review of: ▪ Special-status species potentially occurring on site; ▪ Mitigation measures and BMPs to be implemented as part of the Project; ▪ Pertinent measures included in agency permits obtained for the Project; ▪ Procedures for reporting the presence of special-status species on site as well as any issues related to air or water resources.	Prior to Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
BIO-3. Fish/Aquatic Species Rescue. The District will develop and implement a fish rescue plan to avoid impacts to fish potentially present in Orr Creek Reservoir. The plan will be reviewed and approved by the California Department of Fish and Wildlife (CDFW) as part of the Streambed Alteration Agreement application process. The plan will include (but is not limited to) the following: ▪ Prior to dewatering of Orr Creek Reservoir (either before mechanical excavation or after completion of suction dredging, depending on which sediment removal method is selected), mesh netting will be installed across the creek channel upstream of the reservoir to prevent the downstream movement of fish into the reservoir. This netting will be routinely checked and maintained to ensure that it is effective and free of debris. The netting will be removed upon rewatering of the reservoir at the conclusion of Project activities. • Orr Creek Reservoir will be monitored during the dewatering process, and any fish that are stranded during the draw-down will be relocated. • Rescued fish will be captured and relocated to the nearest appropriate site outside of the work area. ▪ The following additional measures will be implemented during hydraulic suction dredging (if implemented): • A silt curtain will be placed and anchored around the dredging operations at all times. • The outlet pipe of the suction dredger will be monitored for the presence of live fish, and any live fish found would be rescued. • Rescued fish will be captured and relocated to the nearest appropriate site outside the work area. ▪ A record will be maintained that will include the following data for each individual rescued and relocated (or as specified in CDFW permit conditions): ▪ Date of capture and relocation, ▪ Method of capture, ▪ Fish species, life stage, fork length, and weight ▪ Location of relocation in relation to the Project area, and ▪ Total number of fish captured and relocated. ▪ The fish capture and relocation record will be provided to CDFW following completion of the Project.	During Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
BIO-4. Clean Water Act Permitting and California Fish and Game Code Compliance. The District will obtain relevant Clean Water Act permits (e.g., Sections 401, 402 and 404), and any permits required under the California Fish and Game Code (e.g., Section 1602 Streambed Alteration Agreement) and/or the California Water Code (e.g., Waste Discharge Requirements[WDRs]). The specific permits to be obtained may vary depending on the sediment removal method selected. All conditions identified in the permits will be implemented as part of the Project.	During Construction	District	District
BIO-5. Frog and Turtle Monitoring. The following measure will be implemented to avoid impacts to special-status frogs and western pond turtles if mechanical excavation is the method selected for cleaning of the reservoir: ▪ Orr Creek Reservoir will be surveyed prior to commencement of activities to ensure that no turtles or frogs are present within the reservoir. ▪ If any animals are present, the animal(s) will be allowed to move out of harm's way, or, if necessary, a qualified biologist will relocate the individual to the nearest area of suitable habitat outside of the Project area. ▪ A record will be maintained that includes the following data for each individual rescued and relocated (or as specified in CDFW permit conditions): ▪ Date of capture and relocation, ▪ Method of capture, ▪ Species and life stage, ▪ Location of relocation in relation to the Project area, and ▪ Total number of individuals captured and relocated. ▪ The frog and turtle relocation record will be provided to CDFW following completion of the Project.	During Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
BIO-6. Monitoring Prior to Stockpiling of Excavated Sediments. The District will implement the following measures to reduce the potential for impacts to special-status wildlife during stockpiling of excavated sediments: ▪ The contractor will conduct a clearance survey every morning prior to stockpiling sediments to ensure that no wildlife are present in designated areas where excavated sediments would be stockpiled. ▪ If any animals are present, the animal will be allowed to move out of harm's way, or, if necessary, a qualified biologist will relocate the individual to the nearest area of suitable habitat outside of the Project area. ▪ Stockpiled materials would be removed as soon as possible following completion of each season of construction ▪ The stockpile area would be allowed to revegetate naturally after completion of the Project.	During Construction	District	District
BIO-7. Protection of Special-Status Raptors or Other Bird Nests. The District will implement the following measures to avoid disturbance of raptor or other bird nests: ▪ To avoid disturbing any raptor and bird nests, construction activities will be conducted during the non-breeding season for these species (between August 16 and February 28). ▪ If construction activities must be conducted during nesting season (between March 1 and August 15), a preconstruction survey will be conducted by a qualified biologist to determine if there are active nests present. The survey will be conducted no more than 30 days prior to Project initiation. If the biologist determines that the area surveyed does not contain any active nests, then Project activities can begin without any further mitigation. ▪ If active raptor nests are found, construction will not occur within 500 feet of an active nest until the young have fledged, as determined by a qualified biologist, or until the District receives written authorization from the CDFW to proceed. ▪ A 200-foot protective buffer will be established around the heron rookery present in the Project area. This protective buffer will be maintained throughout the Project. ▪ If active nests of non-raptorial birds are found, a 25-foot buffer will be established and the nest will be avoided until the young have fledged, as determined by a qualified biologist.	Prior to Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
BIO-8. Protection of Riparian and Wetland Habitats. The District will implement the following mitigation measures to minimize potential impacts to riparian and emergent wetland habitats: ▪ No riparian or emergent wetland vegetation will be removed beyond that which is necessary for implementation of the Project. ▪ Prior to implementation of staging and construction or ground disturbing activities, the District will install orange or yellow construction fencing around all other riparian areas that could potentially be affected by Project activities. These areas will be avoided throughout Project implementation.	During Construction	District	District
BIO-9. Protection of Oak Woodlands. The District will implement the following mitigation measures to minimize potential impacts to oak woodlands: ▪ No native oaks will be removed during implementation of the Project. ▪ District will erect construction fencing around the dripline of native oaks trees in or adjacent to Project work and staging areas, and will prohibit use of equipment or disturbance of soil within the fencing.	During Construction	District	District
CULT-1. Accidental Discovery of Cultural Resources If archeological materials, historic-era resources, or human remains are uncovered at any time during implementation of the Project, the District will treat those materials in a manner consistent with District Policy 6085 for Cultural Resources. The full text of this policy is provided as Appendix G.	During Construction	District	District
CULT-2. Tribal Consultation The District will notify tribal representatives that expressed an interest in the Project in the event of the following: ▪ If additional cultural resource surveys are required, one week prior to the survey the District will notify tribal representatives and invite them to participate. ▪ Previously unknown tribal cultural resources are identified within the Project area. ▪ Subsurface testing and data recovery must be implemented.	Prior to and During Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
HAZ-1. Standard Fire Prevention Measures. The District's contractor will implement standard fire prevention measures, including but not limited to, requiring fire prevention equipment to be available at all times, identifying construction sites as non-smoking areas, and providing fire prevention training to construction personnel. Portable communication devices (i.e., radio or mobile telephones) would be made available to all construction personnel to allow for prompt notification to the District or other local authorities in case of a fire.	During Construction	District	District
HYD-1. Water Quality Best Management Practices. Prior to commencement of ground disturbing activities, the District will identify site-specific BMPs to effectively control erosion and sediment loss and to protect water quality. During the Project, these BMPs for erosion and sediment control shall be implemented by the Project contractor. These BMPs will include, but are not limited to: ▪ Excavated sediments that have been stockpiled for drying will be secured using silt fences, straw wattles, geotextiles and mats, straw bales, or other similar methods. If straw wattles or straw bales are used, all straw will be certified weed-free. ▪ Erosion control measures will be placed in areas where high surface runoff is expected, around spoil piles, and at channel entrances or adjacent to drainage channels. ▪ To the degree possible, the stationary hydraulic suction dredger, if used, will be located at least 50 feet from flagged wetland and riparian areas. If practicable, the dredger would be placed on mats to protect the banks of the reservoir. Spill containment devices will be placed under and/or around the dredger. ▪ Prior to the initiation of Project activities, the District's contractor will prepare a spill prevention and control plan (SPCP) that will be implemented during Project activities. ▪ To reduce potential contamination by spills, all refueling, storage, servicing, and maintenance of equipment will be performed at designated sites and not within 50 feet of wetted areas or other sensitive environmental resources. Absorbent material or drip pans will be used during refueling or servicing of trucks or other equipment. Any fluids drained from the machinery during servicing will be collected in leak-proof containers and taken to an appropriate disposal or recycling facility. If such activities result in spills or accumulation of a product on the soil, the contaminated soil will be disposed of properly. All maintenance materials (i.e., oils, grease, lubricants, antifreeze) will be stored at staging areas in appropriate storage containers. If these materials are required during Project implementation, they will be placed in a designated area away from site activities and sensitive resources.	During Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
HYD-2. Diversion and Dewatering Plan. The District will implement the following measures to protect water quality and aquatic habitats during dewatering of Orr Creek Reservoir ▪ The District will develop a plan that describes methods (e.g., temporary coffer dams and diversion piping) for diverting flows and dewatering the reservoir. These methods will isolate work areas from the affected water body and minimize the potential for turbidity-related impacts. ▪ Flows to Orr Creek and to the Gold Hill I Canal downstream of the dam will be maintained throughout Project implementation. ▪ The District will place rip-rap at the outlet of the diversion pipe downstream of the dam to ensure that the temporarily diverted water does not cause scour of the channel of Orr Creek. ▪ All dewatering devices and rip-rap will be removed upon completion of construction and original contours and water flow will be restored. ▪ The Diversion and Dewatering Plan will be submitted for agency approval with water quality permit applications, and will be implemented as part of the Project.	Develop plan prior to construction/ implement plan during construction	District	District
HYD-3. Water Quality Monitoring Plan. The District will prepare a Water Quality Monitoring Plan (WQMP) for the Project. This WQMP will describe the approach for monitoring water quality (baseline and Project conditions) during dewatering and sediment removal activities. The Plan will include: ▪ Compliance thresholds and adaptive management to address potential water quality issues should any arise. ▪ Water quality monitoring for the following constituents water temperature, dissolved oxygen (DO), turbidity, total dissolved solids (TDS) and total suspended solids (TSS) as defined in the permit. ▪ Monitoring reports will be developed and provided to agencies during Project implementation. ▪ Sediment removal will be suspended and agencies will be notified within 24 hours if any constituents exceed thresholds developed through agency consultation with consideration of pre-project background levels. ▪ The WQMP will be submitted for agency approval with relevant permit applications, and will be implemented as part of the Project.	Develop plan prior to construction/ implement plan during construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
HYD-4 Hydraulic Suction Dredging. The District will implement the following during implementation of hydraulic suction dredging: ▪ The rate and method of cutter head rotation speed and swing speed will be reduced, as necessary, to maintain compliance with water quality thresholds as defined in the WQMP (refer to HYD-2). ▪ No bank undercutting is permitted. ▪ Silt curtains will be used to minimize transport of resuspended sediment downstream. ▪ If mechanical drying equipment is not used, slurry suctioned from the reservoir will be discharged first to temporary storage tanks, and the sediment would be allowed to settle, prior to returning clarified water to the reservoir.	During Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
HYD-5 Disposal of Sediments. The District will implement the following to ensure appropriate disposal of excavated or dredged sediments: ▪ Sediment shall be sampled and analyzed to assess sediment quality and identify any potential hazards to the public or environment during excavation, transportation, and reuse and/or disposal of the sediment. ▪ Based on the known historical environmental impacts of mining in the watershed, characterization of the sediment shall be limited to metals as the primary constituents of concern. ▪ Approximately one sample will be taken per 2,000 cubic yards of sediment removed. ▪ Results of the sediment sampling will be compared to applicable health screening levels issued by State and federal agencies that include: ▪ Hazardous Waste Thresholds (Title 22 Chapter 11 of California Code of Regulations), ▪ California Office of Environmental Health Hazard Assessment Human Health Screening Levels, and ▪ Federal EPA Regional Screening Levels. ▪ Disposal/reuse of dredged sediment may be subject to WDRs, and/or a waiver of WDRs for disposal of dredge material to land. ▪ If sediment is to be disposed of in a landfill, no further restrictions on disposal are required, since landfills operate under their own WDR and/or NPDES permits that are designed to protect water quality. ▪ If sediment is to be reused: ▪ If concentrations exceed Hazardous Waste Thresholds, the sediment will be disposed of in accordance with relevant hazardous waste regulations. ▪ If concentrations of all metals are below Hazardous Waste Thresholds, no restrictions on reuse will be implemented. ▪ If concentrations of individual metals exceed Human Health Screening Levels or Regional Screening Levels, but not Hazardous Waste Thresholds, the sediment will only be reused on a site where the native soil contains equivalent or higher concentrations of these metals. Soil will be sampled and tested for metals for which the sediment exceeds the above thresholds at the proposed disposal/reuse site and compared to the concentrations in the sediment. If the native soil metals concentrations are higher than the sediment concentrations, the sediment can be reused/disposed of without further characterization.	During Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
HYD-6. Low-Level Outlet Design. To prevent potential impacts to water quality from long-term operation of the low-level outlet, the District will implement the following: ▪ Install a water dissipation device on the low-level outlet on the dam so that it will not cause increased erosion and sedimentation downstream in Orr Creek. ▪ Operate/open the low-level outlet only when required for periodic reservoir maintenance or when there is water spilling over the existing spillway to ensure that there are sufficient flows present to flush sediments and prevent turbidity in Orr Creek downstream of the reservoir.	During Construction	District	District
NZ-1. Noise Best Management Practices. To reduce noise-related impacts to occupants of nearby residential land uses, the following BMPs will be incorporated into the Proposed Project: ▪ Construction activities, including activities within equipment staging areas, will be limited to the hours between sunrise (but no earlier than 7:00 a.m.) and sunset (but no later than 7:00 p.m.) on weekdays. Construction work on weekends and District-recognized holidays will be avoided when practical. If required, work on weekends and District-recognized holidays will be limited to the hours between 8:00 a.m. and 7:00 p.m. ▪ All construction equipment must have sound-control devices. No equipment will have an unmuffled exhaust system. ▪ Additional noise-reduction measures will be implemented as appropriate and practical, including but not limited to: ▪ Changing the location of stationary construction equipment to an area with less sensitive receptors; and ▪ Limiting equipment (i.e., construction equipment and trucks) to five (5) or fewer minutes of idling time as well as rescheduling construction activity. ▪ Stockpiles will be located to minimize the need for haul trucks to back up for loading and exiting.	During Construction	District	District

Mitigation Measure	Timing	Implementation Responsibility	Monitoring/ Reporting Responsibility
TRA-1. Construction Traffic, Access, and Transportation Controls. The District will implement measures to minimize impacts on residential traffic within the Project area resulting from construction-related trips to and from the Project area, including: ▪ Nearby residences will be notified at least two weeks prior to Project implementation regarding anticipated work dates and will be provided with the District's contact information. ▪ The Project schedule will be posted on the District website. ▪ All traffic control, including devices and personnel requirements, will be consistent with the current State of California Manual of Traffic Controls for Construction and Maintenance Work Zones. ▪ Any traffic-related barricades will be fitted with lights or reflectors at night. ▪ The District will ensure that the road conditions in the construction area are restored to pre-Project condition or better following completion of the Proposed Project.	During Construction	District	District

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3 ENVIRONMENTAL CHECKLIST

Following is the environmental checklist form (CEQA Guidelines, Appendix G) that provides discussion of the environmental impacts associated with implementation of the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project.

1. **Project title:** Orr Creek Reservoir Cleaning and Infrastructure Improvement Project
2. **Lead agency name and address:** Nevada Irrigation District
3. **Contact person and phone number:** Gary D. King, P.E., Ph.D., Engineering Manager, (530) 271-6860, king@nidwater.com
4. **Project location:** Unincorporated Placer County; 2 miles north of the City of Auburn
5. **Project sponsor's name and address:** Nevada Irrigation District, 1036 West Main Street, Grass Valley, CA 95945
6. **General plan designation:** Riparian Drainage
7. **Zoning:** Greenbelt/Open Space
8. **Description of the Project:** This Project includes the removal of sediments from the Orr Creek Reservoir to restore a portion of the original reservoir capacity and repair of leaking dam and replacement of the outlet pipe to the canal, as well as associated infrastructure repairs.
9. **Surrounding land uses and setting:** This area is governed by the Placer County General Plan, adopted in 1994 and updated in 2013 (Placer County 2013), and the Auburn/Bowman Community Plan, approved in 1994 and updated in 1999 (Placer County 1999). Land uses for the area are defined in the Auburn/Bowman Community Plan, while zoning designations are defined in the Placer County General Plan. The designated land use at Orr Creek Reservoir is Riparian Drainage (RP) and it is zoned as Greenbelt/Open Space (OS) (Placer County 1999 and 2017a). The Land Use Designations for the parcels surrounding the Reservoir are Agricultural and Rural Estate (Placer County 1999). Zoning Designations for the surrounding parcels are Agriculture and Rural Residential (Placer County 2017a).
10. **Other public agencies whose approval is may be required (e.g., permits, financing approval, or participation agreement):**

    Federal: U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service
    State: California Department of Fish and Wildlife
    Local: Placer County Air Pollution Control District, Regional Water Quality Control Board
11. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?** Tribal consultation as dictated under Assembly Bill (AB) 52 was initiated in August 2017. Two responses were received, one from United Auburn Indian Community (UAIC) and one from Shingle Springs Rancheria. Cherilyn Neider, Tribal Historic Preservation Administrative Assistant of the UAIC, contacted the District in an e-mail dated September 25, 2017 and requested consultation for the Project. In addition, the UAIC requested that a tribal representative be allowed to observe and participate in cultural resource surveys for the Project; that a tribal monitor be present for ground-disturbing activities if cultural resources are identified within the Project area; and that consultation with UAIC be conducted, and written consent received, prior to any subsurface testing and data recovery. Daniel Fonseca, Tribal Historic Preservation Officer of the Shingle Springs Rancheria, contacted the District via letter

dated October 10, 2017 and requested copies of all completed record searches, surveys, and reports conducted in the Project area, and to be notified if new information or human remains are found during Project implementation.

On October 24, 2017, the District sent UAIC and Shingle Springs Rancheria electronic copies of all existing cultural resource assessments and record searches conducted in the Project area and provided proposed mitigation measures for review. The District requested that UAIC and Shingle Springs Rancheria respond with any comments or revisions before November 15, 2017. To date, no responses were received.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Association of Environmental Professionals 2018 CEQA Guidelines Appendices 281 Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

DETERMINATION: (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

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

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

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

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

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

Signature	Date
Signature	Date

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to Projects like the one involved (e.g., the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on Project-specific factors as well as general standards (e.g., the Project will not expose sensitive receptors to pollutants, based on a Project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as Project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the Project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a Project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significance.

3.1 Aesthetics

Would the Project…		Potentially Significant Impact	Less than Significant with Mitigation	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?	☐	☐	☑	☐

3.1.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to aesthetics if the Project would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcrops, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

3.1.2 Setting

The Project area is located in the western foothills of the Sierra Nevada, which are visually characterized by views of rolling hills, river canyons, valleys, mountains, meadows, forests, and habitats unique to the Sierra Nevada. The Proposed Project is located within foothill-hardwood woodland land cover in a rural area approximately two miles north of the City of Auburn (Placer County 2017a). This portion of Placer County is generally dominated by rural and open space with scattered development.

3.1.3 Discussion

a) *The Project would not have a substantial adverse impact on a scenic vista.*

A scenic vista is generally defined as an expansive view of highly valued landscape observable from a publicly accessible vantage point. The Project area is located on private property owned by the District and is surrounded by eight adjacent private parcels (Placer County 2017a). The landscape around the reservoir is vegetated with foothill-hardwood woodland, making the reservoir only visible from adjacent or nearby private properties. There are no publicly accessible vantage points overlooking the Project area, meaning there would be no impact on a scenic vista. Therefore, there would be **no impact**.

b) *The Proposed Project would not substantially impact (damage) trees, rock outcrops, and historic buildings within a state scenic highway or other scenic resources.*

The portion of Highway 49 used to access the Project area is considered an "Eligible State Scenic Highway-Not Officially Designated" by the State of California Department of Transportation's (Caltrans) Scenic Highway Program (Caltrans 2017). However, the Project area is not visible from Highway 49. No other designated scenic resources are located in the vicinity of the Project area. Therefore, there would be **no impact**.

c) *The Proposed Project would not substantially impact (degrade) the existing visual character or quality of the site and its surroundings.*

Several components of the Project, such as dewatering of the reservoir and drying of sediments on lands adjacent to the reservoir, would have a temporary impact on the visual quality of the site. However, the foothill-hardwood woodland surrounding the reservoir would considerably obscure the view of the Project from nearby private residences. In addition, these changes are temporary and short-term: The reservoir water surface elevations would be allowed to return to normal levels and sediments would be hauled off-site following drying of materials and prior to the next work season.

The Project would require permanent removal of emergent vegetation (such as cattail and bull rushes) growing within eastern and western portions of the reservoir. This would include removal of approximately 0.11 acre of emergent vegetation on the eastern side of the reservoir and up to 0.07 acre of emergent vegetation on the western side of the reservoir, immediately adjacent to the dam. Vegetation removal will be limited to what is necessary to meet the objectives of the Project (i.e., restoration of the reservoir's storage capacity). This vegetation removal would result in minor permanent changes visible to landowners surrounding the reservoir. However, the Project will not result in removal of any upland vegetation and would not result in overall changes to the structure of the vegetation communities or in changes to screening or tree canopy cover in the land surrounding the reservoir. Thus, the Proposed Project would not substantially degrade the existing visual character or quality of the site and its surroundings. Therefore, this impact would be **less than significant.**

d) *The Proposed Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.*

Construction activities for the Proposed Project would occur between sunrise (but no earlier than 7:00 a.m.) and sunset (but no later than 7:00 p.m.) and would not result in night-time light or glare, with the exception of lights that would be installed on any construction barricades (for safety reasons). The Proposed Project would not result in the operation of new light sources. Therefore, this impact would be **less than significant**.

3.1.4 Mitigation Measures

No significant impacts related to aesthetic resources would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.2 Agriculture and Forest Resources

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	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)) or timberland (as defined in 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?	☐	☐	☐	☑

3.2.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to agriculture or forest resources if the Project would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract;
- Conflict with existing zoning for, or cause rezoning of, forest land or timberland, as defined by the Public Resources Code;
- Result in the loss of forest land or conversion of forest land to non-forest use; or
- 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.

3.2.2 Setting

Orr Creek Reservoir is zoned as Greenbelt/Open Space (OS), while zoning designations for the surrounding parcels are Agriculture (AG) and Rural Residential (RR) (Placer County 2013 and 2017a). Additional descriptions of land use and zoning designations area are provided in Section 3.10, Land Use and Planning.

Greenbelt and Open Space areas permit low-intensity agricultural uses. An Agricultural zoning designation allows uses associated with farming and ranching, including crop production, orchards and vineyards,

grazing, pasture and rangeland, Christmas tree farms, horse ranches, hobby farms, as well as facilities that directly support agricultural operations, such as agricultural products processing (Placer County 2013). Additionally, Rural Residential zoning allows for agricultural uses such as crop production and grazing, equestrian facilities, and limited agricultural support businesses such as roadside stands, farm equipment and supplies sales, and resource extraction (Placer County 2013).

As described in the Project Description, water from Orr Creek Reservoir is diverted into the Gold Hill I Canal, which provides raw irrigation water to the District customers, supporting agricultural resources in the surrounding area.

3.2.3 Discussion

a) *The Proposed Project would not directly result in the conversion of agricultural land to non-agricultural uses.*

No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is located within the Project area (California Department of Conservation 2014). Therefore, there would be **no impact.**

b) *The Proposed Project would not involve any activity that would conflict with existing zoning for agricultural use or a Williamson Act contract.*

The Project area and surrounding areas are zoned to allow for agricultural use, and some nearby parcels are also under a Williamson Act contract (Placer County 2017a). Water stored and released from Orr Creek Reservoir is used as irrigation for agricultural and other uses. Therefore, dewatering or lowering reservoir water elevation for implementation of the Project could potentially represent a conflict with agricultural uses downstream of the reservoir. However, any conflict would be minimal for several reasons. The District will implement the Project during the non-irrigation season, when downstream water demands are low. In addition, the District will implement Mitigation Measure HYD-2, which requires development of a Dewatering and Diversion Plan. The plan will require the District to use diversion pipe and to maintain existing flows into the Gold Hill I Canal and Orr Creek during implementation of the Project to ensure continuity of service. Following completion of the Project the diversion piping would be removed, the reservoir would be allowed to return to normal levels, and water releases into the canal and creek would resume. Based on the timing of implementation of the Project, and with implementation of mitigation measure HYD-2, this impact would be **less than significant with mitigation incorporated**.

c) *The Proposed Project would not result in any changes to zoning of forest land or timberland and would not be located on forest land or timberland.*

The Project area does not qualify as timberland as defined in Public Resources Code Section 4526. Public Resources Code Section 12220(g) defines "forest land" as “land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.” Therefore, the Project area meets the definition of forest land under Public Resources Code Section 12220(g). However, although the Project area is located within foothill-hardwood woodland, the Project area is not currently managed as forest or timber land, and is not zoned for forest or timber land by Placer County (Placer County 2013 and 2017a). Therefore, this impact would be **less than significant.**

d) *The Proposed Project would not result in the direct loss of any forest lands or conversion of forest land to non-forest use.*

As stated above, Public Resources Code Section 12220(g) defines "forest land" as “land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.” Therefore, the Project area meets the definition of forest land under Public Resources Code Section 12220(g). However, although the Project area is located within foothill-hardwood woodland, the Project area is not currently managed as forest or timber land and is not zoned for forest or timber land by Placer County (Placer County 2013 and 2017a). A maximum of 10 trees would be removed to allow for realignment of the diversion pipe to the Gold Hill I Canal. However, removal of up to 10 trees would not result in changes to land use. Therefore, this impact would be **less than significant.**

e) *The Proposed Project would not involve 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.*

The Proposed Project would involve restoration of the storage capacity of the Orr Creek Reservoir, which in turn would contribute to the long-term viability and operational flexibility of the District’s Bear Creek System, benefiting the District customers, including those who use the District water for agricultural irrigation. There are no state-designated Farmlands within the Project area, and the Proposed Project will not result in the conversion of forest land to non-forest use. Therefore, there is **no impact.**

3.2.4 Mitigation Measures

Refer to Mitigation Measure HYD-2 in Section 3.9, Hydrology and Water Quality.

3.3 Air Quality

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	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?	☐	☑	☐	☐

3.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to air resources if the Project would:

- Substantially conflict with or substantially obstruct implementation of the applicable air quality plan;
- Violate any air quality standard (i.e., national ambient air quality standard [NAAQS] or California ambient air quality standard [CAAQS]) or contribute substantially to an existing or Projected air quality violation (e.g., ozone in the County);
- Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

3.3.2 Setting

Placer County exhibits large variations in terrain and consequently exhibits large variations in climate, both of which affect air quality. The western portions of the County slope relatively gradually with deep river canyons running from southwest to northeast towards the crest of the Sierra Nevada. The warmest areas are found at the lower elevations along the west side of the County, while the coldest average temperatures are found at the highest elevations.

The prevailing wind direction over the County is westerly. However, the terrain of the area has a great influence on local winds, resulting in a wide variability in wind direction. Afternoon winds are generally channeled up-canyon, while nighttime winds generally flow down-canyon. Winds are, in general, stronger in spring and summer and weaker in fall and winter. Periods of calm winds and clear skies in fall and winter often result in strong, ground-based inversions forming in mountain valleys. These layers of very stable air restrict the dispersal of pollutants, trapping these pollutants near the ground, representing the worst conditions for local air pollution occurring in the County (Placer County 2007).

Placer County crosses three distinct air basins: the Sacramento Valley, Mountain Counties, and Lake Tahoe basins (Placer County 2015). The Project area is within the Sacramento Valley Air Basin (SVAB) and is under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD), which is the local agency for air quality planning with authority over air pollutant sources. The SVAB is designated as nonattainment for federal and state ozone (O_3) standards, nonattainment for the federal particulate matter standard ($PM_{2.5}$) and state particulate matter standard (PM_{10}) (Placer County 2012).

Natural occurrences of asbestos, which is classified as a known human carcinogen by state and federal agencies, are known to be present in some parts of Placer County. Based on a study by the California Geologic Survey, the Project area is moderately likely to contain naturally occurring asbestos (NOA) (California Department of Conservation 2006). This is based on the presence of metamorphosed mafic volcanic rocks underlying the Project area. NOA is known to be present in these rock types either in Placer County or in similar rocks in nearby counties. The most likely settings for NOA in these rocks are in fault zones and shear zones that contain slivers of serpentinite and/or high concentrations of the minerals talc and chlorite. The Project is in the vicinity of the Wolf Creek Fault Zone, which contains blocks of ultramafic rocks, possibly including asbestos minerals and trace metals. See Section 3.6 for a full description of the soils and geology of the Project area.

Regulatory Setting

Air quality within Placer County is regulated by several jurisdictions, including the United States Environmental Protection Agency (U.S. EPA), the California Air Resources Board (ARB), and the PCAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

Concentrations of ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead are used as indicators of ambient air quality conditions. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as "criteria air pollutants." Appendix A provides a summary of criteria air pollutants, common sources, and associated effects as well as federal and state standards for the criteria pollutants and other state regulated air pollutants. As stated previously, the Project area is within an area that is designated as nonattainment for federal and state ozone (O_3) standards, nonattainment for the federal particulate matter standard ($PM_{2.5}$) and state particulate matter standard (PM_{10}).

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term "sensitive receptors" refers to specific population groups, as well as the land uses where they

would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics. Toxic air contaminants (TAC), NOA, and odors are also factors that influence air quality and potential Project affects to air quality.

Federal Air Quality Regulations

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990. The FCAA required the U.S. EPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions.

California Air Quality Regulation

The 1988 CCAA requires that all air districts in the state endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for ozone, CO, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2) by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either: (1) achieve a 5% annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions.

Placer County Air Pollution Control District

The PCAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained. Responsibilities of the PCAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA.

In October 2016, the PCAPCD adopted new significance thresholds criteria for reactive organic gases (ROG), nitrous oxides (NO_X), and PM_{10} that are used to evaluate a Project's air quality impact. The PCAPCD-recommended significance thresholds are summarized in Table 2 (Placer County 2016). The PCAPCD uses these thresholds to determine the level of significance for emissions associated with a Project's construction emissions (e.g., demolishing, site preparation, earthmoving, and building) and operational emissions (e.g., space heating, motor vehicle trips, and landscaping maintenance). The threshold is also used to determine appropriate mitigation measures to offset the Project's cumulative air quality impacts.

Table 2. PCAPCD Recommended Project-Level Thresholds of Significance.

Type of Emissions	Thresholds of Significance (lbs per day)		
	ROG	NO_X	PM_{10}
Construction Emissions	82	82	82
Operational Emissions	55	55	82

3.3.3 Discussion

a) *The Proposed Project would not conflict with or substantially obstruct implementation of the applicable (i.e., PCAPCD) air quality plan.*

A Project would be considered to conflict with or obstruct implementation of the regional air quality plan if it were inconsistent with the emissions inventories contained in applicable plan. The most recent air quality plan for Placer County was adopted in 2015 and includes an updated emission inventory for ROG and NOx. The Proposed Project would not result in emissions beyond those accounted for in the regional emissions inventory, which assumes routine use of on-road equipment such as trucks, as well as "other mobile source groupings" such as construction equipment (Placer County 2015). There would be no ongoing emissions resulting from the restoration of the reservoir's storage capacity. The Project would not conflict of obstruct implementation of any applicable air quality plan, therefore, there would be **no impact**.

b) *The Proposed Project would not violate any air quality standard (i.e., NAAQS or CAAQS) or contribute substantially to an existing or projected air quality violation with implementation of mitigation.*

Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur (up to 120 days per work season). The Project will be completed in 3 years, unless additional work seasons are required because of funding, weather conditions, and other unforeseeable conditions. The Proposed Project would have temporary air-quality emissions resulting from the use of construction equipment, transportation of materials (including equipment, supplies and sediment), and construction worker commute trips. These short-term air quality emissions would consist of ROG and NOx from the operation of gas- and diesel-powered equipment, as well as fugitive dust (potentially including PM_{10}) resulting from earth moving activities, including the removal, draining/drying, and transportation of sediments.

Due to the relatively small size of the Proposed Project, quantitative modeling of short-term air quality impacts would not be required by the PCAPCD (Green, pers. comm. 2014). Under certain conditions, the increased pollution load could exceed applicable air quality standards. As a result, short-term construction-related emissions would be considered potentially significant without mitigation. In order to reduce potential impacts and consistent with existing regulatory requirements, implementation of Mitigation Measure AIR-1, which requires implementation of the PCAPCD's air quality Best Management Practices (BMPs) would reduce the Proposed Project's emissions to a less than significant level. Therefore, this impact would be **less than significant with mitigation incorporated.**

c) *The Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant of which the Project region is non-attainment under an applicable NAAQS or CAAQS with implementation of mitigation.*

There will be no long-term impacts to emissions resulting from implementation of the Proposed Project. However, as described above, the Proposed Project would result in temporary air-quality emissions consisting of ROG and NOx from the operation of gas and diesel-powered equipment, as well as fugitive dust resulting from earth moving activities, including the removal, draining/drying, and transportation of sediments. As described previously, the Project area is within an area that is designated as nonattainment for federal and state ozone (O_3) standards, nonattainment for the federal particulate matter standard ($PM_{2.5}$) and state particulate matter standard (PM_{10}) (Placer County 2012). NOx and ROG are known as ozone precursors since ground-level ozone is formed by photochemical reactions between ROG and NOx in the presence of sunlight. Therefore, the Project could potentially contribute to the increase in pollutants for which the Project area is nonattainment. However, with implementation of air quality BMPs (Mitigation Measure AIR-1) consistent with the PCAPCD rules and guidance, the potential short-term construction-related emissions would be reduced to less than significant levels. Therefore, this impact would be **less than significant with mitigation incorporated.**

d) *The Proposed Project would not expose sensitive receptors to substantial pollutant concentrations with implementation of mitigation*.

Sensitive receptors are specific population groups who are most sensitive to the adverse health effects of air pollution, as well as the land uses where these groups would reside for long periods. There are residences in the vicinity of the Proposed Project, where individuals who could be sensitive receptors reside. As discussed in (b) above, the Proposed Project may result in short-term increases in emissions. However, the temporary nature of construction, coupled with the implementation of the recommended PCAPCD mitigation measures (Mitigation Measure AIR-1), would not result in conditions where sensitive receptors would be exposed to substantial pollutant concentrations. Under the PCAPCD mitigation measures, the District would submit to the PCAPCD for approval an Asbestos Dust Management Plan to prevent any naturally occurring asbestos potentially present in the Project work areas from becoming airborne.Therefore, this impact would be **less than significant with mitigation incorporated.**

e) *The Proposed Project would not create objectionable odors affecting a substantial number of people*.

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact. The Proposed Project could create odors resulting from the draining/drying of sediment piles and from exhaust fumes, as discussed below.

The decomposition of organic materials during the draining/drying of removed sediments on the District property adjacent to the reservoir could temporarily emit odors. These piles of sediments would be located on private the District property that is surrounded by eight adjacent private parcels. The nearest homes are located approximately 0.10 mile from the private land where the District would

temporarily place the sediments. The presence of these piles would be temporary, only remaining for the time necessary for sufficient liquid to drain and evaporate prior to the transport of sediment offsite. As described in Mitigation Measure AIR-2, these piles would be periodically overturned or rowed up to reduce the potential for odor emissions. In addition, as described in Mitigation Measure BIO-1, the District will remove stockpiled sediments and resume normal reservoir operations between construction seasons. The potential odors emanating from the piles would dissipate with increased distance from the source; and the number of people who could potentially enter the range of the smell would not be considered substantial. Therefore, this impact would be **less than significant with mitigation incorporated.**

The Proposed Project would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. However, construction-generated emissions would occur intermittently throughout the workday and would dissipate rapidly within increasing distance from the source. As a result, short-term construction activities would not expose a substantial number of people to frequent objectionable odors. The Proposed Project would not result in the installation of any equipment or processes that would be considered odor-emission sources. These factors, as well as the implementation of Mitigation Measure AIR-1, AIR-2, and BIO-1 would reduce potential odors resulting from exhaust fumes to **less than significant with mitigation incorporated.**

3.3.4 Mitigation Measures

AIR-1. Air Quality Best Management Practices.

The District will implement all applicable BMPs employed by the PCAPCD under Rule 228 (Appendix B). These BMPs will be incorporated into construction specifications and implemented by the contractor during construction.

AIR-2. Stockpile Odor Reduction.

Sediment piles placed in upland areas for drying will be periodically overturned/rowed up to reduce the potential for odor emission.

Refer also to Mitigation Measure BIO-1 in Section 3.4, Biological Resources.

3.4 Biological Resources

Would the Proposed Project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US 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?	☐	☐	☐	☑

3.4.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to biological resources if the Project would:

- 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 CDFW or USFWS;
- 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 CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

3.4.2 Setting

This section describes the biological setting of the Project area, including aquatic and terrestrial vegetation communities/wildlife habitats and special-status plants and wildlife. Provided below is a summary of the methods used to obtain information on biological resources in the Project area, and the resulting description of these resources.

Methods

This section summarizes the methods and results of the literature review and biological resource surveys completed to determine the presence of special-status plant and wildlife species or their habitat in the Project area.

Literature Review

Existing documents pertinent to special-status plant and wildlife species in the vicinity of the Proposed Project were compiled, reviewed, and analyzed. This included a review of the CDFW California Natural Diversity Database (CNDDB 2017), the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2017), the Placer County General Plan (Placer County 2013), USFWS Species List (USFWS 2017a), USFWS National Wetlands Inventory (NWI) (USFWS 2017b), the University of California, Davis' (UC Davis) PISCES database (2017), and the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2017). Relevant technical information from these documents is incorporated and referenced as appropriate.

Biological Resource Surveys

The Project area was surveyed to determine biological resources present that may potentially be affected by the Project. First, vegetation community/wildlife habitat ground-truthing and wildlife reconnaissance surveys were conducted to assess habitats , and a site assessment for California red-legged frog (CRLF). Each of these is described below.

Vegetation Community/Wildlife Habitats

Vegetation communities present were identified through a review of aerial photographs of the Proposed Project vicinity and through ground-truthing surveys, which were conducted in conjunction with special-status plant and wildlife reconnaissance surveys. Vegetation communities were classified based on A Manual of California Vegetation (Sawyer *et al.* 2009) and cross-referenced with wildlife habitat types as classified in California Statewide Wildlife Habitat Relationships System (CWHR) (Mayer and Laudenslayer 1988).

This included identification of habitats that are considered sensitive by a local, state, or federal agency, as described below.

- **Waters of the U.S. and Waters of the State, including wetlands:** Any potential wetlands or other water features that would qualify as waters of the United States (WOUS) or of California (WOS),

as well as other sensitive natural communities, were documented based on a review of NWI layers (USFWS 2017b) and confirmed during vegetation communities/wildlife habitat surveys. A focused wetland delineation was not conducted.

The USACE has regulatory authority over WOUS which include wetlands pursuant to Section 404 of the CWA. Jurisdictional WOUS are defined by the U.S. Supreme Court Decision in Rapanos v. United States & Carabell v. United States. According to the Rapanos Decision, the USACE exerts jurisdiction over:

- Traditional navigable waters (TNWs) and wetlands adjacent to TNWs.
- Non-navigable tributaries of TNWs called relatively permanent waters (RPWs) that flow year-round or have continuous flow at least seasonally and wetlands that directly abut such tributaries.
- In addition, the USACE may, on a case-by-case basis, exert jurisdiction over the following:
- Wetlands that are adjacent to but that do not directly about a RPW.
- Non-navigable tributaries that are not relatively permanent and wetlands adjacent to such tributaries.

Specifically, 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 under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987).

- **Riparian Habitat:** Riparian habitat is defined as areas adjacent to the banks of rivers, streams, or other waterways that contain vegetation that is distinct from upland species. Typical riparian species include cottonwood (*Populu*s spp.), alder (*Alnus* spp.), ash (*Fraxinus* spp.) and willow (*Salix* spp.) These habitats are important to wildlife for foraging, nesting, refuge, and as migratory corridors. Riparian habitats are protected by CDFW under Fish and Game Code 1600–1603. In addition, the Natural Resources Element of the Placer County General Plan includes several policies that protection riparian corridors (Placer County 2013).
- **Oak Woodlands:** State laws that regulate protection of oak woodlands include Professional Forester's Law (PFL) and CEQA according to Public Resources Code Section 21083.4. Oak woodlands are defined as areas having 10% oak canopy cover or greater. "Oaks" are defined in Public Resources Code Section 21083.4 as a native tree species in the genus *Quercus*, that is 5 inches diameter at breast height (dbh) or greater. The Oak Woodlands Conservation Act (SB 1334) provides funding for the conservation and protection of oak woodlands in California. Oak woodland habitats are protected under the Placer County Tree Preservation Ordinance (Article 12.16 of the Placer County Code) and the Oak Woodland Management Plan (Placer County 2013).

Special-Status Plants

For the purposes of this document, a special-status plant species is defined as any species that is granted status by a federal, state, or local agency. Federally listed plant species are defined as those species granted status by the USFWS under the ESA and include threatened (FT), endangered (FE), proposed threatened or endangered (FPT, FPE), candidate (FC), or listed species proposed for delisting (FPD). State of California listed plant species, which are granted status by CDFW under the California Endangered Species Act (CESA), include rare (CR), threatened (CT), or endangered (CE) species. Under CEQA, special-status

plants include species listed by CNPS as rare, threatened, or endangered in California and plants for which more information is needed (CNPS Lists 1B, 2B, and 3) (CNPS 2017).

Special-status plant surveys were conducted in accordance with the *Protocol for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (CDFW 2009) during the known blooming periods for special-status plant species identified as having the potential to occur in the Proposed Project vicinity. Surveys were floristic in nature, and nomenclature was based on *The Jepson Manual* (Baldwin *et al.* 2012). Floristic survey methods involve identifying all species to the level necessary to determine if they are a special-status plant, or whether they are a plant species with unusual or significant range extensions. Plant species observed during field surveys were recorded. Photographs and GPS coordinates were obtained for each special-status plant species or population observed, an estimate of the number of individuals present, their phenology, and associated vegetation was recorded. All GPS coordinates are in NAD 83. If a special-status plant species was observed, the location was mapped on a 7.5-minute USGS quadrangle. California Native Species field survey forms were completed and submitted to the CNDDB.

Special-Status Wildlife

For the purposes of this document, a special-status wildlife species is defined as any species that is granted status by a federal, state, or local agency. Federally listed species are those granted status by federal agencies as FT, FE, FPT, FPE, FC, or FPD. State of California listed wildlife species are defined as those species granted status as CT, CE, California Fully Protected species (CFP), and species of special concern (CSC). In addition, this document includes raptor species protected under Section 3503.5 of the California Fish and Game Code and bird species protected under the MBTA (16 USC 703–711).

Wildlife reconnaissance surveys were conducted to obtain information on any special-status wildlife species and their habitats present in the Project area on July 29, 2014. Species were recorded as present if they were observed, if species-specific vocalizations were heard, or if diagnostic field signs (e.g., scat, tracks, pellets, nests, or den sites) were found. Some species that are known to occur in the study area and/or for which suitable habitat is present within the study area were recorded as potentially occurring, but not observed. General observations of the suitability of available habitat for various special-status species were also recorded.

Protocol-level surveys were also conducted for California black rail. The surveys were conducted by a CDFW-authorized ornithologist and an assisting wildlife biologist. The surveys were conducted using call-and-response methods described in Evens (1991), as well as portions of the Conway (2011) marsh bird survey protocol. Surveys were comprised of a total of two visits between March 15 and May 31, 2015 from sunrise to no later than 9:30 a.m. Ten broadcasting stations were established 50 meters apart. At each station, surveyors listened for 1 minute; broadcasted California black rail vocalizations for 1.5 minutes; and then listened for responses for 3.5 minutes (a total of 6 minutes per station). In addition, vocalizations of other primary marsh bird species, including Virginia rail, sora, common gallinule, and American bittern, were broadcasted at every other station for a total of 4 minutes (Conway 2011).

A CRLF site assessment was conducted in the Project area and within 1 mile of the Project area by a CRLF expert (Jeff Alvarez), and a JNA-Consulting biologist on July 19 and August 8, 2017. The site assessment was conducted in accordance with the *USFWS Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (USFWS Guidance, 2005). Specifically, the site assessment included:

1) Identification and mapping of known occurrences of CRLF within 1 mile of the Project area; 2) conducting field surveys to identify, map, and describe upland and aquatic habitats within 1 mile of the Project area, and 3) identifying and mapping of the potential dispersal barriers (e.g., urban and suburban developments, wide or fast-flowing rivers and streams, lakes and reservoirs larger than 50 acres, and heavily travelled roads). Results of the site assessment were compiled into a report and submitted to USFWS on September 18, 2017.

Results

Vegetation community/wildlife habitat ground-truthing, late season special-status plant surveys, and wildlife reconnaissance surveys were conducted by two biologists on July 29, 2014; April 27, 2015; and May 7, 2015. Results of these surveys, as well as the literature review, are provided below.

Vegetation Communities/Wildlife Habitats

The Proposed Project is located in a residential area characterized by blue oak-foothill pine woodland. Orr Creek and the Orr Creek Reservoir represent aquatic, wetland, and riparian habitat. Soils underlying the Project area are primarily identified as Auburn-Argonaut-Rock complex, Auburn-Sobrante-Rock outcrop complex, and Boomer-Rock outcrop complex (5-30% slope) (NRCS 2017). Auburn, Argonaut, and Sobrante soils are well-drained silt-loams overlying bedrock and are derived from residuum weathered from metamorphic rock. Boomer soils are well-drained with moderately slow permeability derived from residuum weathered from metavolcanics. Rock outcrops are composed of unweathered bedrock (NRCS 2017).

Vegetation communities are typical of the western slopes of the Sierra Nevada foothills. These include *Quercus douglasii* Woodland Alliance (blue oak woodland); *Aesculus californica* Woodland Alliance (California buckeye groves); *Rubus armeniacus* Semi-Natural Shrubland Stands (Himalayan blackberry brambles); *Bromus* sp. Semi-Natural Herbaceous Stands (annual grasslands); and *Typha* Herbaceous Alliance (Cattail marshes). These vegetation communities are equivalent to blue oak–foothill pine, montane hardwood forest, valley-foothill riparian, annual grasslands, and fresh emergent wetland wildlife habitats as classified by the CWHR system. The Project area also includes lacustrine aquatic habitat. These wildlife habitats, as well as common wildlife species observed during field surveys, are briefly described below.

Blue Oak–Foothill Pine

The blue-oak foothill pine habitat occurs between 500 and 3,000 feet in elevation in the Sierra Nevada foothills and is typically composed of a diverse mix of hardwoods, conifers, and shrubs. In the Project area, this habitat is dominated by blue oak (*Quercus douglasii)*, California black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizenii*), foothill pine (*Pinus sabianana*), and California buckeye (*Aesculus californica*) with scattered ponderosa pine (*Pinus ponderosa*). Common shrub species found in the understory include California coffeeberry (*Frangula californica*), deerbrush (*Ceanothus integerrimus*), and poison oak (*Toxicodendron diversilobum*). The herbaceous layer includes annual grasses, spreading hedgeparseley (*Torillis arvensis*), pink honeysuckle (*Lonicera hispidula*), and bedstraw (*Galium* sp.). Common wildlife species observed in this habitat during 2014 surveys included American robin, acorn

woodpecker, Nuttall's woodpecker, and belted kingfisher. Project access routes and staging areas are located within this habitat type.

Valley-Foothill Riparian

Valley-foothill riparian habitats typically occur below 3,000 feet in elevation in the Sierra Nevada foothills. These habitats are generally associated with low velocity flows, flood plains, and gentle topography and are characterized by tree species such as cottonwood (*Populus fremontii*), box elder (*Acer negundo*), and Oregon ash (*Fraxinus latifolia*). Typical understory shrub layer plants include Himalayan blackberry (*Rubus armeniacus*), wild grape (*Vitis californica*), wild rose (*Rosa* sp.), poison oak, and willows (*Salix* sp.). Valley-foothill riparian habitats provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife. There is valley-foothill riparian habitat along Orr Creek upstream and downstream of the reservoir. Beaver sign was observed in the Orr Creek riparian corridor upstream of the reservoir. The realignment of the pipe leading from the reservoir dam to the Gold Hill I Canal will occur within valley-foothill riparian habitat.

Annual Grassland

Annual grassland habitats are open grasslands composed primarily of non-native, annual plant species, many of which also occur in the herbaceous layer in adjacent woodland habitats. These habitats occupy what was once native grassland in California. Species composition and structure varies depending on weather patterns and livestock grazing. Plants in this habitat tend to grow during the cool winters and spring, maturing and dying by late spring or early summer, with standing dead material remaining in the summer depending on the amount of grazing pressure. In the Project area this habitat is dominated by an assortment of California natives and non-natives, including brome grass (*Bromus* sp.), wild oats (*Avena* sp.), turkey mullein (*Eremocarpus setigerus*), and yellow starthistle (*Centaurea solstitialis*). Cattle were observed grazing in annual grassland areas directly surrounding the Orr Creek Reservoir within the survey area during 2014 surveys. Common wildlife species observed included fence lizard, red-shouldered hawk, and California towhee. Sediment laydown areas will be located within this habitat type.

Fresh Emergent Wetland

Fresh emergent wetlands are distinguished from deep water aquatic habitats and wet meadows or grassland habitats by the presence of tall, erect, grass-like plants that are rooted in soils that are permanently or seasonally flooded or inundated. These habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. However, they are most common on level to gently rolling topography (Mayer and Laudenslayer 1988). In the foothill region of Placer County, fresh emergent wetlands are often associated with small manmade ponds and natural drainages. Portions of the bank of the Orr Creek reservoir contain fresh emergent wetland habitat dominated by plants such as water primrose (*Ludwigia* sp), arumleaf arrowhead (*Saggitaria cuneata*), Himalayan blackberry, and various sedge and rush species (*Cyperus* spp. *Carex* spp, and *Juncus* spp.). Common wildlife species observed in this habitat during 2014 surveys included Pacific chorus frog (*Pseudacris egilla*) and ash-throated flycatcher. An estimated 1.12 acre of this habitat type was identified in the Project area. Of this, approximately 0.18 acre of this habitat type will be removed to restore the original storage capacity of the

reservoir. This includes approximately 0.7 acre on the western shoreline of Orr Creek reservoir adjacent to the dam; and approximately 0.11 acre on the eastern shoreline.

Lacustrine Aquatic Habitat

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water. These habitats are found throughout California at almost all elevations and include permanently flooded lakes and reservoirs, intermittent lakes, and shallow ponds. Water tends to be relatively calm, with lower dissolved oxygen content than that found in running water. In the Project area, Orr Creek Reservoir is considered lacustrine habitat. Common wildlife species observed in this habitat during 2014 surveys included Canada goose, mallard, and foraging black phoebe.

Sensitive Habitats

Sensitive habitats, including WOUS/WOS, riparian habitat, and oak woodland are present the Project area. A description of the location of these habitats is provided below.

- **WOUS/WOS, including Wetlands:** Orr Creek and Orr Creek Reservoir are considered WOUS/WOS. Based on a review of the USFWS NWI (USFWS 2017b) Orr Creek Reservoir is classified as a freshwater pond (2.40 acre), while a portion of the eastern shore (1.12 acre) is classified as freshwater emergent wetland.
- **Riparian Habitat:** As described above, there is Valley-foothill riparian habitat along Orr Creek both upstream and downstream of the reservoir. Vegetation includes California black oak, white alder (*Alnus rhombifolia*), and willow (*Salix* spp.) in the overstory and dense thickets of Himalayan blackberry and California wild grape in the understory.
- **Oak Woodland:** As stated above, oak woodland (specifically oak-foothill pine woodland) is the dominant vegetation community/wildlife habitat within the Project area, with an estimated 30–50% canopy cover.

Special-Status Plants

Based on the elevation, habitats, and soils present, 17 special-status plant species may potentially occur in the Project area. Refer to Appendix C for information on the status, life history, distribution, and potential for occurrence of these special-status plant species.

The nearest recorded special-status plant occurrence is a population of Jepson's onion (*Allium jepsonii*) located approximately 2 miles southeast of the Project area (CDFW 2017). However, this species is associated with serpentine or gabbroic soils, which are not present in the Project area. There are no other records for special-status plant species within 5 miles of the Project area.

A late-season special-status plant survey was conducted July 29, 2014; and an early-season special-status plant survey was conducted on May 7, 2015. No special-status plant species were observed during these surveys. A list of all species observed is provided as Appendix D.

Special-Status Wildlife

Based on the elevation and the habitats present onsite, 18 special-status wildlife species may potentially occur in the Project area. Information on the status, life history, distribution, and potential for occurrence of these species is described below and summarized in Appendix C. Refer to Figure 4 for a map of special-status wildlife species known to occur within 5 miles of the Project area.

A reconnaissance-level wildlife survey was conducted in the Project area on July 29, 2014. None of these species or their signs were observed.

Special-Status and Resident Fish

Based on the region, elevation, and available records of fish occurrences in the watershed, Orr Creek and Orr Creek Reservoir's fish community is dominated by warmwater native and non-native fish species. In addition, the CDFW stocked hatchery rainbow trout (*Oncorhynchus mykiss)* and non-native brown trout (*Salmo trutta*) in many water bodies and reservoirs throughout the Auburn Ravine and Bear River drainages until 1965 (Placer County 2002) and remnant populations may occur in the watershed where conditions are suitable for supporting these coldwater species. The University of California, Davis' (UC Davis) PISCES database (2017) identifies a total of 18 fish species potentially occurring historically or presently in the Orr Creek system, including seven California native and eleven non-native fish species (Appendix E).

The UC Davis PISCES database (a database that describes the best-known ranges for California's native fish) indicates that while Sacramento perch (*Archoplites interruptus*), a California Species of Special Concern, was potentially present in the Orr Creek system historically, the species is rare in its native range today, and only exists in Clear Lake and Alameda Creek/Calaveras Reservoir, as well as in some farm ponds and reservoirs in which it has been introduced (UC Davis 2017).

Central Valley steelhead, a federal and State-listed threatened species, may have occurred historically in the watershed. However, as discussed in further detail below, the PISCES database also notes that this species is not likely to occur in Orr Creek due to fish passage impediments. Access to Orr Creek and the Orr Creek Reservoir is precluded by natural and man-made barriers, including a large waterfall and a series of cascades located in a canyon on Coon Creek downstream of the terminus of Orr Creek (Bailey 2003). Other fish passage impediments in the lower portion of the watershed downstream of Orr Creek's terminus include insufficient flow in Auburn Ravine resulting from water diversions and the presence of beaver dams (Placer County 2002). Due to the presence of these barriers in the lower watershed, neither fall-run Evolutionary Significant Unit (ESU) Chinook salmon nor Central Valley Distinct Population Segment (DPS) steelhead are expected to occur in Orr Creek or in the vicinity of the Orr Creek Reservoir.

The remaining 16 fish species identified in the UC Davis PISCES database are likely to occur in Orr Creek and may be present in the Orr Creek reservoir. None of these fish are identified as candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the CDFW, National Marine Fisheries Service, or U.S. Fish and Wildlife Service. There were no observations of special-status fish during reconnaissance surveys conducted in the Project area.

Special-Status Amphibians and Reptiles

- **Foothill Yellow-Legged Frog (*Rana boylii* – CSC):** The foothill yellow-legged frog (FYLF) is a highly aquatic species that inhabits rocky streams and rivers below 3,200 feet in elevation, with

near-shore areas of low velocity, frequent depositional features, and cobble/boulder substrate for breeding and similar areas with gravel/sand substrate for rearing. Upland habitat for this species would include banks and uplands within approximately 33 feet of aquatic habitat. Breeding and egg-laying usually begins any time from mid-March to May, eggs hatch in about five days to more than 30 days and tadpoles transform in three to four months.

The closest known occurrence for this species is in the Bear River upstream of Lake Combie, approximately 8 miles northeast of the Project area. Orr Creek upstream and downstream of the dam represents appropriate habitat for the FYLF. Because FYLF is primarily a stream or riverine species, Orr Creek reservoir itself would not be considered appropriate habitat for FYLF. No FYLF were observed during reconnaissance surveys conducted on July 29, 2014.

- **California Red-Legged Frog (*Rana draytonii* – FT, CSC):** California red-legged frogs are found in permanent quiet pools of streams, marshes, and occasionally ponds, usually below 4,000 feet in elevation in the Sierra Nevada foothills. Breeding habitat includes aquatic areas with dense, shrubby, or emergent riparian vegetation and a permanent source of deep (greater than 2 1/3 feet deep) still or slow moving water. Upland dispersal habitat includes areas within 1 mile of aquatic breeding habitat with no impassable dispersal barriers. These are defined by USFWS as suburban areas, suburban developments, wide or fast flowing rivers or streams, lakes greater than 50 acres, and heavily traveled roads without underpasses or culverts as impassible dispersal barriers (USFWS 2006). Primary constituent elements that USFWS considers critical for CRLF include:
    - Aquatic Breeding Habitat: Freshwater water ponds, slow-moving streams or pools within streams; or other ephemeral or permanent water bodies that hold water for a minimum of 20 weeks in most years (USFWS). USFWS further defines aquatic breeding habitat to include a deep (greater than 2.3 feet) still or slow-moving permanent water body (less than 50-acres in size) closely associated with dense emergent riparian vegetation (USFWS 2007a).
    - Upland Habitat: Upland areas within 200 feet of the edge of the riparian vegetation or dripline surrounding aquatic and riparian habitat. Can include grasslands, woodlands, or wetland/riparian plant species (USFWS 2006).
    - Dispersal Habitat: Various natural or altered habitats such as agricultural fields which do not contain barriers to dispersal. This excludes moderate to high density urban areas with large expanses of asphalt or concrete and large reservoirs (over 50 acres in size) (USFWS 2006).

  In addition, most populations of CRLF are found in habitats that are free of introduced predators. Predators on one or more life stages of CRLF are believed to include bullfrogs, non-native crayfish, and various fishes including bass, catfish, and mosquito fish (USFWS 2002).

  The closest known occurrence for CRLF is in the American River Watershed approximately 20 miles east of the Project area in the Michigan Bluff USGS quad (specific location information suppressed) (CNDDB 2017). No CRLF were observed during reconnaissance surveys conducted on July 29, 2014 or during the site assessment conducted on July 19 and August 8, 2017. The Project area does not include any USFWS-designated critical habitat (USFWS 2006). Based on

USFWS criteria described above, Orr Creek Reservoir (a permanent fresh water body with adjacent emergent wetland and riparian habitat) may represent suitable aquatic habitat for CRLF, and the surrounding grasslands and oak woodlands within 200 feet of the reservoir may represent potential upland habitat for CRLF.

However, occupation of the reservoir by a CRLF population is unlikely for several reasons. The closest known occupied habitat is located more than 20 miles east of the Project area. As defined by USFWS, there are several potentially impassible barriers between this existing population and the Project area, including heavily travelled roads (i.e., Interstate 80 and Highway 49) and the Middle Fork American River that would be considered impassible for CRLF. In addition, Orr Creek Reservoir supports several species that are known to predate upon CRLF including predatory fish, crayfish, mesocarnivores, great blue heron, and bullfrogs. Therefore, while the Project area is within the current range of CRLF and has features considered by USFWS to represent potential habitat for this species, it is unlikely that this species is present in the reservoir or in surrounding uplands.

- **Western Pond Turtle (*Actinemys marmorata* – CSC):** The range for western pond turtle extends from the western Washington south to central California. In the Sierra Nevada, it historically occurred in most of the major drainages along the western slope. The western pond turtle occurs in a wide variety of permanent and ephemeral aquatic habitats, including ponds, lakes, streams, and irrigation ditches, with emergent vegetation and rock outcrops or floating debris for basking. They may also be found nesting or overwintering in adjacent upland habitats within approximately 325 feet of aquatic habitats (CDFW 2006). Western pond turtles nest on land between May and July within approximately 150 feet of water in dry clay, loam, or silt soils, in open areas with sparse, low vegetation (annual grasses and herbs). Although eggs hatch by September, hatchlings overwinter in the nest site and migrate to aquatic sites in March and April.

  There are CNDDB records for this species downstream of the Project area. No western pond turtles were observed during reconnaissance surveys conducted on July 29, 2014. However, suitable aquatic and upland breeding habitat for western pond turtle is present in and within 325 feet of Orr Creek and the Orr Creek reservoir. Additional wetlands, including semi-permanent natural ponds, or artificial impoundments are present in Proposed Project vicinity. Therefore, western pond turtle could potentially occur in the Project area.

- **Blainville's (Coast) Horned Lizard (*Phrynosoma blainvilli* – CSC):** The horned lizard occurs in grasslands, coniferous forests, woodlands, and chaparral on exposed sandy-gravelly substrate with scattered shrubs, and clearings at elevations of up to 4,000 feet in the Sierra Nevada. This species was not observed during reconnaissance surveys conducted on July 29, 2014. However, horned lizards could potentially occur in grasslands and woodlands in the upland areas surrounding the Orr Creek Reservoir.

Special-Status Birds

- **White-tailed Kite (*Elanus leucurus* – CFP (nesting)):** White-tailed kites require open grasslands, meadows, or marshes (for foraging) in proximity to isolated, dense-topped trees (for nesting and perching). Breeding season for this species extends from February to October. There are no records for the white-tailed kite in the vicinity of the Project area, and this species was not observed during

reconnaissance surveys conducted on July 29, 2014. However, it is a potential year-round breeding resident in grassland, riparian, and wetland habitats within and surrounding the Project area.

- **Bald Eagle (*Haliaeetus leucocephalus* – CE, CFP):** The bald eagle is a year-round resident in ice-free regions of California (USFWS 2007b). Foraging areas include regulated and unregulated rivers, reservoirs, lakes, estuaries, and coastal marine ecosystems. The majority of bald eagles in California breed near large reservoirs and nest trees are usually located within one mile of foraging habitat (USFWS 2007a). In general, bald eagles require large trees (usually conifers over 100 feet tall) to accommodate a large nest in a relatively secluded location (USFWS 2007a). However, sensitivity to human presence varies among individual eagles. This species typically requires large bodies of water with abundant fish for foraging habitat. Bald eagle is a potential migrant in the Project area. However, this species is unlikely to nest near the Orr Creek Reservoir due to its relatively small size, lack of availability of large (100-foot) conifer trees for nesting, and lack of availability for suitable and sufficient prey (e.g., salmonids.) Bald eagles were not observed during reconnaissance surveys conducted at the site on July 29, 2014.

- **American Peregrine Falcon (*Falco peregrines anatum* – BCC, CFP):** The American peregrine falcon is an uncommon breeding resident or migrant in California, with active nesting areas along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. The American peregrine falcon breeds in woodlands, forests, coastal habitats, and riparian areas near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, or mounds. Its nest is a scrape on a depression or ledge in an open area, on human-made structures, and occasionally in a tree or snag cavities or old nests of other raptors. Riparian areas and coastal and inland wetlands are important habitats year-round, especially in non-breeding seasons. It feeds on a variety of birds and occasionally takes mammals, insects, and fish. There are no records for the American peregrine falcons in the vicinity of the Project area, and this species was not observed during reconnaissance surveys conducted on July 29, 2014. However, suitable foraging and nesting habitat for American peregrine falcon is present throughout the Project area vicinity in blue oak-foothill pine woodland.

- **California Black Rail (*Laterallus jamaicensis coturniculus* – CT, CFP):** California black rails occur in salt marshes bordering larger bays, as well as in freshwater and brackish marshes at least 1 acre in size and supporting at least 1 inch of water. Vegetation composition is dependent on habitat type and includes plants of species *Scirpus (=Schoenoplectus), Juncus*, *Cyperaceae*, *Typha,* and *Poaceae*. The California black rail occurs in transition areas between wet and dry habitats, excluding deep/open water. Nesting habitat includes areas concealed in dense vegetation. The California black rail is extremely secretive and a rarely seen bird that tends to avoid areas of human activity.

  There are no known occurrences of California black rail in the Project area and no recorded sightings. The closest records for this species are approximately 5 miles northwest of the Project area near the Camp Far West Reservoir; and approximately 5 miles east of the Project Area near Hidden Falls Regional Park. Orr Creek Reservoir has several key habitat characteristics that indicate it could potentially be occupied by California black rail, including the presence of a small wetland or marsh located on a gently sloped site, densely vegetated with cattails, rushes, and bulrushes (Richmond, Tecklin, and Beissinger 2008). Dense brush (e.g., blackberry brambles) on the uplands next to the reservoir would provide additional cover for this species. Protocol-level

call-and-response surveys were conducted in the Project area on April 27, 2015 and May 7, 2015. No black rails were detected.

- **Lewis' Woodpecker (*Melanerpes lewis* – BCC, CE):** Lewis' woodpeckers breed east of the Sierra Nevada crest in cavities excavated in sycamore, cottonwood, oak, or conifer trees. This species is a winter resident in open oak savanna, deciduous, and coniferous forest habitats with sufficient supply of acorns and insects. Suitable winter foraging habitat for Lewis' woodpecker is present throughout the Project area in blue oak-foothill pine woodland. No Lewis' woodpecker were observed during reconnaissance surveys conducted on July 29, 2014. However, this species could potentially occur in the Project area.
- **Loggerhead Shrike (*Lanius ludovicianu*s – CSC (nesting)):** The loggerhead shrike is found in open habitats with sparse shrubs and trees (or other suitable perch sites) and bare ground and/or low, sparse herbaceous cover. Breeding habitat includes shrublands and open woodlands in tall shrubs and trees. Foraging habitat includes tall shrubs and trees for hunting perches and open grassy or bare areas for hunting. Loggerhead shrike is found in lowlands and foothills throughout California. Suitable nesting and/or foraging habitat for loggerhead shrike is present throughout the Project area in blue oak-foothill pine woodland. No loggerhead shrike were observed during reconnaissance surveys conducted on July 29, 2014. However, this species could potentially occur in the Project area.
- **Purple Martin (*Progne subis* - CSC):** The purple martin breeds in multi-layered, open forest and woodland with snags near a body of water in a variety of wooded, low-elevation habitats in California. This species is migratory and is absent from California late September–late March. No purple martins were observed during reconnaissance surveys conducted on July 29, 2014. However, the purple martin could potentially forage and nest during the summer within the Project area.
- **Yellow Warbler (*Dendroica petechia brewsteri* – CSC (nesting)):** The yellow warbler breeds in riparian vegetation along streams or in wet meadows, especially in willows, cottonwoods, and various riparian shrubs. It may occasionally use shrublands and understory trees in mixed conifer forests. The yellow warbler is fairly abundant in the Sierra Nevada, although nearly extirpated from the Central Valley. No yellow warbler were observed during reconnaissance surveys conducted on July 29, 2014. However, suitable nesting and/or foraging habitat (riparian vegetation) for yellow warbler is present in the vicinity of the Project area along Orr Creek.
- **Tricolored Blackbird (*Agelaius tricolor* – CSC):** The tricolored blackbird requires open water, protected nesting substrate, and a foraging area with insect prey within a few kilometers of the colony. Breeding season for this species extends from April to late July. There are no records for tricolored blackbirds in the Project vicinity, and this species was not observed during reconnaissance surveys conducted on July 29, 2014. However, appropriate foraging and nesting habitat for the tricolored blackbird is present within the Project area.

Other Protected Bird Species

In addition to the species listed above, the Project area may provide potential habitat for raptors protected under Section 3503.5 of the California Fish and Game Code or other bird species protected under the Migratory Bird Treaty Act (MBTA), including raptors such as osprey (*Pandion haliaetus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*); ground-nesting species such as California quail

(*Callipepla californica*); and nesting waterfowl such as Canada goose (*Branta canadensis*) and wood duck (*Aix sponsa*). A great blue heron rookery was observed in the Project area approximately 250 feet east of Orr Creek Reservoir.

Special-Status Mammals

- **Townsend's Big-eared Bat (*Corynorhinus townsendii* – CCT, CSC):** Townsend's big-eared bat is a year-round resident in California. The Townsend's big-eared bat is found primarily in rural settings, from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra Nevada foothills, and low to mid-elevation mixed coniferous-deciduous forests. It typically roosts during the day in caves and mines, but may roost in buildings that offer suitable conditions. Night roosts are typically located in more open settings such as bridges.

  There are no known occurrences of Townsend's big-eared bat in the Project area, and no bats were observed during reconnaissance surveys conducted on July 29, 2014. There are no mines, caves, or other structures in the Project area that provide roosting habitat for this species. Open areas over upland habitat and over Orr Creek Reservoir represent potential foraging habitat for this species. Therefore, this species could potentially occur in the Project area.

- **Pallid Bat (*Antrozous pallidus* – CSC):** The pallid bat is a year-round resident in California. The pallid bat is found in arid desert areas, grasslands and oak savanna, coastal forested areas, and coniferous forests of the mountain regions of California. Day and night roost sites typically include rock outcroppings, caves, hollow trees, mines, buildings, and bridges. Pallid bats will use more open sites such as eaves, awnings, and open areas under bridges for night feeding roosts.

  There are no known occurrences of pallid bat in the Project area, and no bats were observed during reconnaissance surveys conducted on July 29, 2014. Rock outcroppings and hollow trees in the Project area represent potential roosting habitat for this species. Open areas over upland habitat and over Orr Creek Reservoir represent potential foraging habitat for this species. Therefore, this species could potentially occur in the Project area.

- **Ringtail (*Bassariscus astutus* – CFP):** The ringtail is distributed in the Sierra Nevada foothills and throughout most of the western side of the Sierra Nevada up to 9,600 feet. It occurs in a variety of riparian habitats and in brush stands of most forest and shrub habitats at low to mid-elevations. It forages on the ground, among rocks and in trees usually near water. The ringtail is nocturnal and active year around (Zeiner *et al*. 1990).

  There are no known occurrences of ringtail in the Project area, and no ringtails were observed during reconnaissance surveys conducted on July 29, 2014. Stands of riparian or brushy vegetation adjacent to the Project area represent potential roosting and foraging habitat for ringtail. Therefore, ringtail could potentially occur in the Project area.

3.4.3 Discussion

a) The Proposed Project will not 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 CDFW or USFWS with implementation of mitigation.

The Proposed Project vicinity represents potential habitat for 22 special-status plant species and 18 special-status wildlife species, as well as raptors protected under California Fish and Game Code or other bird species protected under the MBTA. The following is a discussion of potential impacts to these special-status species.

Special-Status Plants

Use of heavy equipment, vegetation removal and drying of soils associated with the Project would not result in direct impacts to special-status plants.

The Proposed Project includes restoring Orr Creek Reservoir to its original capacity through excavation of sediments. A portion of the east shore and the west shore of the reservoir (immediately adjacent to the dam) have filled in with sediments and now support emergent wetland vegetation including arrowhead, cat-tails and bulrush. Approximately 0.18 acre of this emergent wetland vegetation would be removed when the shoreline is excavated. This vegetation removal could result in loss of special-status plants (aquatic special-status species, in particular). In addition, other Project activities such as use of heavy equipment and stockpiling sediments on uplands adjacent to the reservoir could also impact special-status plants. However, there are no records for special-status plants within the Project area, and no special-status plant species were detected during surveys conducted July 29, 2014 and May 7, 2015. Therefore, Proposed Project will have **no impact** on special-status plants**.**

Special-Status Wildlife

Provided below is discussion of potential impacts to special-status wildlife species, as well as raptors protected under California Fish and Game Code or other bird species protected under the MBTA.

Special-Status and Resident Fish

Dewatering of the reservoir and hydraulic suction dredging (if implemented) could result in direct impacts to resident fish.

As discussed above, no special-status fish are present in the Project area. However, Orr Creek and Orr Creek reservoir provide habitat to a number of native and non-native resident fish. The Project would require dewatering of Orr Creek Reservoir, which would directly affect the resident fish community through stranding of fish on the reservoir bed or in isolated pools behind the dam as the reservoir is drained. Dewatering could also result in impacts to resident fish downstream of the reservoir, if the dewatering resulted in reduction or cessation of flows into Orr Creek. There is low potential for direct impacts to fish during hydraulic suction dredging, if implemented, given that most juvenile and adult fishes are likely to avoid or survive passage through a suction dredger (Griffith and Andrews 1981, cited in Harvey and Lisle 1998). The potential direct impacts on the resident fish community associated with draining the reservoir or hydraulic suction dredging would be further minimized through the implementation of Mitigation Measures HYD-2, BIO-3 and BIO-4. Mitigation Measure HYD-2 states that the District will develop and implement a Dewatering and Diversion Plan that includes a requirement for maintenance of flows in Orr Creek downstream of the reservoir.

Mitigation Measure BIO-3 requires installation of mesh netting in Orr Creek upstream of the reservoir to prevent fish from moving downstream during construction. In addition, a fish rescue and relocation would be implemented by a qualified biologist(s) during draw-down of the reservoir. The biologist will relocate any fish present in the reservoir during dewatering to appropriate nearby habitats in Orr Creek, preferably

upstream of Orr Creek Reservoir to maximize the potential for re-colonization of the reservoir following construction. A report of all fish rescued and relocated will be provided to CDFW.

In addition, the suction dredger (if used) would have a silt curtain placed and anchored around the dredging operations at all times. The curtain will contain turbidity caused by dredging activity, resist wind, waves, and exclude fish from entering the dredging area. In addition, the outlet of the suction dredger would be monitored during suction dredging. In the unlikely event that live fish are found in the pipe outlet, they would be relocated in appropriate nearby habitats in Orr Creek, as described above, and included in the report to CDFW.

Mitigation Measure BIO-4 requires the District to obtain a Streambed Alteration Agreement from CDFW and to implement all required measures in the permit, including any measures to protect resident fish. Implementation of these measures will reduce the potential for direct impacts to fish associated with dewatering of Orr Creek Reservoir and removing sediment.

Implementation of Mitigation Measures HYD-2, BIO-3, and BIO-4 would reduce any impacts to resident fish to less than significant. Therefore, this impact is **less than significant with mitigation incorporated.**

In-reservoir construction activities and removal and drying of sediments may result in indirect temporary impacts to aquatic habitat for resident fish.

The Proposed Project could affect resident fish indirectly by affecting aquatic habitats and water quality. Use of construction vehicles and heavy equipment could result in increased erosion or in fuel spills. Dewatering and hydraulic suction dredging could result in increased turbidity or in suspension of contaminated sediments. However, the potential for suspension of contaminated sediment is low for several reasons. First, sediment characterization studies for Orr Creek Reservoir did not detect total concentrations of inorganic constituents (including mercury) that exceeded human health screen levels or that were elevated with respect to regional background conditions (NID 2018). In addition, hydraulic suction dredging is considered among the least environmentally harmful dredging alternative, in part because resuspension of sediment and turbidity is minimized.

The potential for water quality effects within aquatic habitats during construction will be minimized through implementation of Mitigation Measures BIO-4, and HYD-1, HYD-2, HYD-3 and HYD -4. Mitigation Measure BIO-4 states that the District will obtain relevant permits from USACE, RWQCB, and CDFW for all work conducted within WOUS/WOS and will comply with all water quality conditions contained in the permits.

Mitigation Measure HYD-1 states that water quality BMPs will be implemented by the District or its contractors. BMPs would include, but are not limited to securing stockpiled sediments with straw wattles, bales, or similar; developing a spill prevention and control plan (SPCP); and refueling, storing, and servicing equipment in a manner than does not impact water quality.

Mitigation Measure HYD-2 requires development and implementation of a plan that describes how dewatering and diversion will be implemented to reduce turbidity in the reservoir and requires maintenance of flows into Orr Creek. Mitigation Measure HYD-2 also requires the District to implement methods to ensure that water discharged into Orr Creek downstream of the dam does not result in scour.

Mitigation Measure HYD-3 requires development of a water quality monitoring plan (WQMP) that describes the approach for monitoring water quality during dewatering and sediment removal activities; specifies adaptive management actions; and requires suspension of work if constituents exceed threshold levels.

Mitigation Measure HYD-4 requires modification of the rate and method of cutter head rotation speed and swing speed, as necessary, to maintain compliance with water quality thresholds as defined in the WQMP; prohibits bank undercutting; and requires use of a silt curtain anchored around the dredging operations at all times. The curtain would be designed to contain turbidity caused by dredging activity, and to resist wind and wave action. HYD-4 also states that, if the District opts to use hydraulic suction dredging and does not employ mechanical water removal methods, the slurry suctioned from the reservoir will be discharged first to temporary storage tanks, and the sediment would be allowed to settle, prior to returning clarified water to the reservoir.

Mitigation Measures BIO-4, HYD-1, HYD-2, HYD -3 and HYD-4 would minimize potential short-term temporary impacts to water quality. Therefore, this impact is **less than significant with mitigation incorporated.**

Long-term operation of the low-level outlet could result in degradation of habitat for resident fish in Orr Creek downstream of the reservoir.

Long-term operation of the low-level outlet could result in turbidity in Orr Creek downstream of the diversion through bank erosion and through release of sediments from the reservoir. To prevent potential impacts to water quality from long-term operation of the low-level outlet, the District will implement Mitigation Measure HYD-6. This measure requires that the District will include a dissipation structure to reduce the potential for scour where water is discharged at the outlet. In addition, the low-level outlet would only be operated during periodic reservoir maintenance or during high flows, when water is spilling over the existing spillway. This would ensure that there is sufficient water to carry sediments downstream. Implementation of Mitigation Measure HYD-6 would reduce the potential for turbidity and sediment build-up in Orr Creek downstream of the new low-level outlet. This impact is **less than significant with mitigation incorporated**.

Special-Status Amphibians and Reptiles

Foothill Yellow-Legged Frog

Dewatering and other construction-related activities could result in direct impacts to FYLF or in degradation of aquatic habitat.

There are no recorded occurrences of FYLF in the Project vicinity. However, Orr Creek upstream and downstream of the reservoir represent potential habitat for the FYLF. In-reservoir activities including mechanical excavation, repair of the dam, and installation of the low-level outlet would require dewatering of Orr Creek Reservoir. While the reservoir itself does not provide appropriate habitat for FYLF populations, individual frogs, if present, could potentially be stranded in the reservoir during dewatering. Dewatering could also result in impacts to FYLF downstream of the reservoir, if the dewatering resulted in reduction or cessation of flows into Orr Creek. In order to prevent direct impacts to FYLF or other amphibians, the District will implement Mitigation Measures HYD-3, HYD-4, BIO-2 and BIO-5.

Mitigation Measure HYD-3 and HYD-4 states that the District will develop and implement a Dewatering and Diversion Plan and a WQMP that includes a requirement for maintenance of flows in Orr Creek downstream of the reservoir and water quality monitoring during and following Project implementation.

Mitigation Measure BIO-2 states that all construction personnel will attend an environmental awareness training which includes a review of special-status species potentially in the Project area and mitigation measures that must be implemented to reduce the potential for effects to these species or their habitat.

Mitigation Measure BIO-5 states that the reservoir will be surveyed each day prior to commencement of excavation activities. Any frogs present in the reservoir would be allowed to move out of harm's way, or if necessary be captured and relocated by a qualified biologist to the nearest appropriate habitat outside of the Project area. A record of all individuals relocated will be maintained and provided to CDFW.

The Project could also result in short-term temporary impacts to aquatic habitat for FYLF in Orr Creek downstream of the reservoir as a result of discharge of flows from diversion piping, as well as installation of the low-level outlet. To preserve water quality and maintain aquatic habitats downstream of the dam during construction, the District would implement Mitigation Measure BIO-4, which requires the District to obtain relevant permits from USACE, RWQCB, and CDFW for all work conducted within WOUS/WOS and to implement all water quality and aquatic species protection measures contained in the permits. Mitigation Measure HYD-2 also requires the District to place rip-rap to ensure that water discharged from the temporary diversion pipe into Orr Creek downstream of the dam does not result in scour.

Implementation of these measures would minimize potential effects to FYLF, if present in the Project area. Therefore, impacts to FYLF are **less than significant with mitigation incorporated.**

Long-term operation of the low-level outlet could result in degradation of habitat for FYLF in Orr Creek downstream of the reservoir.

Long-term operation of the low-level outlet could result in turbidity in Orr Creek downstream of the diversion through bank erosion and through release of sediments from the reservoir. To prevent potential impacts to water quality from long-term operation of the low-level outlet, the District will implement Mitigation Measure HYD-6. This measure requires that the District will include a dissipation structure to reduce the potential for scour where water is discharged at the outlet. In addition, the low-level outlet would only be operated during periodic reservoir maintenance or during high flows, when water is spilling over the existing spillway. This would ensure that there is sufficient water to carry sediments downstream. Implementation of Mitigation Measure HYD-6 would reduce the potential for turbidity and sediment build-up in Orr Creek downstream of the new low-level outlet. This impact is **less than significant with mitigation incorporated**.

California Red-Legged Frog

Dewatering, construction activities, and vegetation removal could result in direct impacts to California red-legged frog, if present.

Based on the results of the CRLF Site Assessment, the Project area does not represent appropriate breeding habitat for CRLF and there are several impassable dispersal barriers as defined by USFWS (i.e., Interstate 80, Highway 49, and the Middle Fork American River). In addition, no CRLF were observed in the Project

area during the reconnaissance survey or the CRLF site assessment. The nearest known location of CRLF is in the American River Watershed approximately 20 miles east of the Project area. The results of the CRLF Site Assessment were provided to USFWS for review on September 18, 2017. The District requested that USFWS concur with the findings of the site assessment and determine that the Project area does not represent appropriate breeding habitat for CRLF based on the following:

- Upland habitat in the study area consists of grassland, blue oak/foothill pine, and valley foothill riparian vegetation communities. Upland habitat in the study area are suitable for non-breeding CRLF as it provides upland refugia.
- Orr Creek Reservoir is a small, shallow reservoir that is impacted with sediment from Orr Creek. Emergent and riparian vegetation are abundant around the edges of the reservoir; however, multiple wildlife species known to predate upon CRLF were observed in and adjacent to the reservoir during the CRLF site assessment. Therefore, it is unlikely that Orr Creek Reservoir represents breeding habitat for CRLF. If CRLF were present within the Project area, Orr Creek Reservoir could provide marginal dispersal habitat.
- Based on review of aerial photographs, Dry Creek supports in-channel pools with slow-moving water and emergent and overhanging vegetation. If CRLF were present within the study area Dry Creek could provide suitable breeding and non-breeding habitat for CRLF.
- Gold Hill I Canal and Lone Star Canal are part of the District's raw water conveyance system. The geomorphology of these canals results in swift-moving water and steep banks, which is not conducive to the development of ponded or backwater areas. In addition, they do not have the characteristic vegetation to support populations of CRLF due to regular District maintenance. These canals do not represent potential breeding habitat, but may be used as dispersal habitat if CRLF were present.
- Orr Creek directly upstream of Orr Creek Reservoir is characterized by in-channel pools that are highly vegetated. These pools support emergent vegetation, overstory cover, and several predators to CRLF. The remainder of Orr Creek within the Project area is a confined channel and there are no backwater or ponded areas, and limited emergent vegetation. Therefore, Orr Creek does not represent potential breeding habitat for CRLF. However, Orr Creek represents marginal dispersal habitat if CRLF were present.
- There are 82 ponds located on private property within the study area, defined to include a 1-mile area around surrounding the Project. Access to these ponds was not granted during ground surveys. Based on review of aerial photographs, all the ponds may represent potential breeding and/or dispersal habitat for CRLF, if present.

On September 19, 2017, the USFWS provided concurrence with the above findings, stating that based on the information provided in the report the Project area does not contain CRLF breeding habitat and that due to the lack of breeding habitat within the Project area and the significant distance from the closest known CRLF breeding population, it is unlikely that CRLF occur in the Project area. The concurrence is provided in Appendix F. Therefore, impacts to CRLF would be **less than significant**.

Western Pond Turtle

Dewatering, construction activities, and vegetation removal could result in direct impacts to western pond turtle.

There are no recorded occurrences of western pond turtle in the Project vicinity. However, suitable aquatic habitat for western pond turtle is present in the reservoir and in Orr Creek; and land within 325 feet of the creek and reservoir represents potential upland habitat for this species. Dewatering of the reservoir could directly impact turtles; as could hydraulic suction dredging, if turtles in the reservoir were suctioned up by the machinery. Finally, placement of excavated sediment on uplands for drying could potentially result in crushing or suffocating of turtles, if present. The District will implement Mitigation Measures HYD-2, BIO-1, BIO-2, BIO-4, BIO-5, and BIO-6 to implement potential impacts to western pond turtle.

Mitigation Measure HYD-2 states that the District will develop and implement a Dewatering and Diversion Plan that includes a requirement for maintenance of flows in Orr Creek downstream of the reservoir. Mitigation Measure BIO-1 requires the District to designate access routes and staging areas on previously disturbed areas and to limit vegetation removal to that which is necessary for implementation of the Project. Mitigation Measures BIO-2 states that all construction personnel will attend an environmental awareness training which includes a review of special-status species potentially in the Project area and mitigation measures that must be implemented to reduce the potential for effects to these species or their habitat. Mitigation Measure BIO-4 requires the District to obtain a Streambed Alteration Agreement from CDFW and to implement all permit conditions, including measures to protect western pond turtles. Mitigation Measure BIO-5 states that the reservoir will be surveyed each day prior to commencement of excavation activities. Any turtles present in the reservoir would be allowed to move out of harm's way, or if necessary be captured and relocated by a qualified biologist to the nearest appropriate habitat outside of the Project area. A record of all individuals relocated will be maintained and provided to CDFW. Mitigation Measure BIO-6 requires monitoring to ensure that no animals are present prior to placement of stockpiles of excavated sediment. If any turtles are present, they will be allowed to move out of harm's way, or, if necessary, prior to any work, the individual will be relocated by a qualified biologist to the nearest appropriate habitat outside the Project area.

Implementation of these measures will reduce the potential for direct impacts to western pond turtle. Therefore, this impact is **less than significant with mitigation incorporated.**

The Proposed Project could result in construction-related temporary impacts to aquatic and upland habitat for western pond turtles.

The Proposed Project could result in temporary effects to aquatic habitats for western pond turtle. Use of construction vehicles and heavy equipment could result in increased erosion or in fuel spills. Dewatering and hydraulic suction dredging could result in increased turbidity or in resuspension of contaminated sediments. The Project could also result in short-term temporary impacts to aquatic habitat downstream of the reservoir as a result of discharge of flows from diversion piping downstream of the dam, as well as installation of the low-level outlet. To minimize effects to aquatic habitats during construction, the District would implement Mitigation Measures BIO-4, and HYD-1 through HYD -4.

Mitigation Measure BIO-4 states that the District will obtain appropriate permits from USACE, RWQCB, and CDFW for all work conducted within WOUS/WOS and will comply with all water quality conditions contained in the permits. Mitigation Measure HYD-1 states that water quality BMPs will be implemented by the District or its contractors. Mitigation Measures HYD-2 requires development and implementation a Dewatering and Diversion Plan will be implemented to reduce turbidity in the reservoir, requires maintenance of flows into Orr Creek, and requires implementation of methods to ensure that water discharged into Orr

Creek downstream of the dam does not result in scour. Mitigation Measure HYD-3 requires water quality monitoring, and HYD-4 protects water quality in the reservoir during implementation of hydraulic suction dredging.

The Project would also result in temporary impacts to upland habitat from placement of excavated sediments for drying. The District expects to remove an estimated 4,000 cubic yards of sediment from the reservoir each work season, which would be stockpiled in upland annual grasslands on District-owned land adjacent to the reservoir to dry prior to hauling the sediment off-site. Assuming the stockpiles are 2 feet deep, this would temporarily remove approximately 1.2 acres of potential upland habitat for western pond turtle. As described in Mitigation Measure BIO-6, stockpiled materials would be removed as soon as possible, and the areas would be allowed to revegetate naturally. In addition, as described in Mitigation Measures BIO-1, if excavation of the reservoir is not completed in the first year of construction, the District will remove and dispose of stockpiled upon conclusion of each construction season.

Mitigation Measures BIO-1, BIO-4, BIO-6, and HYD-1 through HYD -4 would minimize potential short-term temporary impacts to aquatic and upland habitats for western pond turtle. Therefore, this impact is **less than significant with mitigation incorporated.**

Blainville's (Coast) Horned Lizard

The Proposed Project could potentially result in direct impacts to coast horned lizard.

Annual grassland and oak woodland habitats in the Project area represent potential habitat for coast horned lizard. Use of construction vehicles and heavy equipment, as well as placement of excavated sediment on upland habitat for drying, could result in direct impacts to coast horned lizards, if present. Mitigation Measures BIO-1, BIO-2, and BIO-6. Mitigation Measure BIO-1 requires the District to designate access routes and staging areas on previously disturbed areas and to limit vegetation removal to that which is necessary for implementation of the Project. Mitigation Measures BIO-2 states that all construction personnel will attend a 15-minute environmental awareness training which includes a review of special-status species potentially in the Project area and mitigation measures that must be implemented to reduce the potential for effects to these species or their habitat. Mitigation Measure BIO-6 requires monitoring to ensure that no animals are present prior to placement of stockpiles of excavated sediment. If any animals (including lizards) are present, they will be allowed to move out of harm's way, or, if necessary, the individual will be relocated by a qualified biologist to the nearest appropriate habitat outside the Project area. These measures would reduce potential impacts to the coast horned lizard to **less than significant with mitigation incorporated.**

The Proposed Project could result in construction-related temporary impacts to upland habitat for coast horned lizards.

The Project would result in temporary impacts to upland habitat from placement of excavated sediments for drying. In addition, the weight of the sediment could crush grasses and other plants, resulting in a degradation of this habitat. Temporary impacts to 1.2 acre of potential upland habitat would be less than significant with incorporation of Mitigation Measures BIO-1 and BIO-6. As described in Mitigation Measure BIO-6, stockpiled materials would be removed as soon as possible (and between construction seasons, if necessary [Mitigation Measure BIO-1]), and the areas would be allowed to revegetate naturally

after completion of the Project. Therefore, this impact is **less than significant with mitigation incorporated.**

Special-Status Birds

The Proposed Project may result in direct impacts to special-status raptors and other bird species.

The Project area represents appropriate habitat for special-status avian species including osprey, white-tailed kite, bald eagle, America peregrine falcon, Lewis' woodpecker, loggerheaded shrike, purple martin, yellow warbler, and tricolored blackbird. During the CRLF site assessment a great blue heron rookery was identified within the Project area approximately 250 feet east of Orr Creek Reservoir. Other raptors protected under Section 3503.5 of the California Fish and Game Code or other native bird species protected by the MBTA may also occur in the Project area.

Tree-nesting birds could potentially be affected by removal of trees for the replacement of the diversion pipe to the Gold Hill I Canal, and ground-nesting birds could be affected by use of heavy equipment and placement of stockpiles in upland annual grasslands. Noise and other disturbance from use of equipment and the presence of construction crews could result in short-term, temporary disturbance of birds known or potentially nesting or foraging in the Project area. The District will implement Mitigation Measures BIO-1, BIO-2, and BIO-7 to reduce the potential for loss or disturbance of nesting or foraging birds. Mitigation Measure BIO-1 states that the District will implement general construction measures to reduce impacts to biological resources, including birds. This includes using designating access and staging areas in previously disturbed areas, limiting work to the hours between sunrise and sunset, and limiting vegetation removal to that necessary for implementation of the Project. Mitigation Measure BIO-2 states that the District will require construction personnel to participate in training regarding sensitive biological resources (including special-status birds) in the Project area. Mitigation Measure BIO-7 states that, if the Proposed Project is scheduled to occur during the nesting season (March 1 through August 15), a qualified biologist will conduct a preconstruction survey within 30 days prior to Project initiation to determine if active nests are present in trees or on the ground in the Project vicinity. If active nests are found, the District would implement the appropriate no-disturbance buffer around the nest until the young have fledged, as determined by a qualified biologist, unless the District receives written authorization from CDFW to proceed. With implementation of these mitigation measures, potential impacts to birds would be considered **less than significant with mitigation incorporated**.

Stockpiling and drying of sediments would result in temporary impacts to potential habitat for birds in upland grassland habitats.

Stockpiling of sediments for drying would result in temporary impacts to birds that use grassland habitat. In addition, stockpiling of sediment could result in a degradation of this habitat. Temporary impacts to 1.2 acre of potential upland habitat would be less than significant with incorporation of Mitigation Measures BIO-1 and BIO-6. As described in Mitigation Measure BIO-6, stockpiled materials would be removed as soon as possible (and between construction seasons, if necessary [Mitigation Measure BIO-1]), and the areas would be allowed to revegetate naturally after completion of the Project. Therefore, this impact is **less than significant with mitigation incorporated.**

Vegetation removal would result in permanent loss of habitat for special-status raptors and other birds.

The Proposed Project will require the removal of approximately 0.18 acre of emergent wetland vegetation to restore the reservoir's original storage capacity. In addition, replacement and realignment of the diversion pipe to the Gold Hill I Canal could require removal of up to 10 trees, depending on the design of the alignment. Removal of this vegetation would result in the loss of nesting and foraging habitat for special-status raptors or other birds. The District would implement Mitigation Measures BIO-1, BIO-8, and BIO-9 to minimize impacts to habitat. Mitigation Measures BIO-1 and BIO-8 state that removal of vegetation, including riparian vegetation, will be limited to that necessary for the Project. Measure BIO-1 further states that the District will use designated access and staging areas located within in previously disturbed areas, and will limit vegetation removal to that necessary for implementation of the Project. Mitigation Measure BIO-8 requires the District to erect construction fencing around all remaining riparian areas that could potentially be affected by the Project. Mitigation Measure BIO-9 states that the District will not remove any native oaks and will prohibit use of equipment or disturbance of soil within the dripline of any trees. Removal of 0.18 of a total of 1.12 acre of wetland vegetation and removal of up to 10 trees would not result in significant changes to the proportion of vegetation types present in the Project area, the structure of canopy layers, or the extent of canopy cover in the Project area. In combination with implementation of mitigation, the District will minimize removal of foraging and/or nesting habitat for special-status birds or other birds and raptors protected under the California Fish and Game Code or the MBTA. Therefore, potential impacts to foraging and/or nesting special-status avian species resulting from vegetation removal would be **less than significant with mitigation incorporated**.

Special-Status Mammals

Construction activities could result in temporary disturbance of special-status mammals.

Noise and human presence from construction activities may cause short-term, temporary disturbance of special-status mammal species that may forage, den, or roost in the Project area including pallid bat, and Townsend's big-eared bat, and ringtail. However, any potential disturbance to these species would be minimal for several reasons. The Project is short-term and temporary in nature, and would be implemented outside the maternal breeding season for these species. Mitigation Measure BIO-1 requires that the District establish access routes and staging areas in predisturbed areas and restricts construction activities to the hours between sunrise and sunset. Bats and ringtail are crepuscular species that typically would not be foraging in the Project area during daylight hours (bats and ringtail typically forage after sunset). Therefore, this impact is **less than significant with mitigation incorporated.**

Dewatering of the reservoir would result in temporary loss of aquatic foraging habitat for special-status bats.

Bat species such as pallid bat and Townsend's big-eared bat forage for insects over aquatic features. Therefore, the dewatering of Orr Creek Reservoir would result in temporary loss of aquatic foraging habitat for these species. Temporary loss of this habitat would have a minimal effect on special-status bats for several reasons. The Project is short-term and temporary in nature, and would be implemented outside the maternal breeding season for these species. Orr Creek upstream and downstream of the Project will provide alternate habitat during implementation of the Project, and the reservoir will be rewatered following completion of the Project. In addition, the District will maintain the quality of the aquatic habitat through implementation of water quality measures described in Mitigation Measures BIO-4 and HYD-1 through HYD-4. Therefore, this impact is **less than significant with mitigation incorporated.**

Removal of riparian vegetation for replacement and realignment of the diversion to the Gold Hill I Canal would result in permanent loss of riparian habitat for ringtail.

Riparian habitats in the Project area represent foraging and denning habitat for ringtail. Replacement and realignment of the diversion pipe to the Gold Hill I Canal could require removal of up to 10 trees, depending on the design of the alignment. Therefore, removal of this vegetation would potentially result in the loss of potential habitat for ringtail. The District would implement Mitigation Measures BIO-1 and BIO-10 to minimize impacts to habitat. Mitigation Measures BIO-1 and BIO-8 state that removal of vegetation, including riparian vegetation, will be limited to that necessary for the Project. Mitigation Measure BIO-8 also requires the District to erect construction fencing around all remaining riparian areas that could potentially be affected by the Project. Removal of up to 10 trees would not result in significant changes to the woodland type, the structure of canopy layers, or the extent of canopy cover in the Project area. Therefore, the Proposed Project would not significantly alter the presence of riparian habitat for ringtail. Therefore, this impact is **less than significant with mitigation incorporated.**

b) *The Proposed Project will not have a substantial adverse effect on any riparian habitat or other sensitive natural communities identified in local or regional plans, policies, and regulations or by the CDFW or USFWS with implementation of mitigation*.

The Project area supports oak woodland, riparian and emergent wetland habitats which are considered sensitive by CDFW, USFWS, and Placer County. The Project area is dominated by oak woodlands (specifically oak-foothill pine habitat). In addition, valley-foothill riparian habitat borders Orr Creek both upstream and downstream of the reservoir, and there is approximately 1.12 acre of freshwater emergent wetland vegetation within and immediately surrounding the western and eastern shores of the reservoir. Mitigation Measures BIO-1, BIO-8, BIO-9, and HYD-1 would minimize any adverse impacts to these habitats. These measures limit vegetation removal to that necessary to meet project objectives, require erection of construction fencing to protect riparian habitat, prohibit the removal of native oak trees or use of equipment or ground disturbance within the dripline of native oaks, and prevent effects to habitat resulting from construction-related erosion or spills. The Project would not result in significant changes to the proportion of vegetation types present in the Project area, the structure of canopy layers, or the extent of canopy cover in the Project area. Therefore, this impact would be **less than significant with mitigation incorporated.**

c) *The Proposed Project will not 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 with implementation of mitigation.*

The Proposed Project is the removal of sediments from within Orr Creek Reservoir (a water of the U.S. under jurisdiction of USACE) to restore the original capacity of the reservoir. This action will require removal of approximately 0.18 acre of a total of 1.12 acre of freshwater emergent wetland habitat that has become established on sediments that have accumulated inside the reservoir. To mitigate for impacts to WOUS/WOS, including wetlands, the District will implement Mitigation Measure BIO-4 which requires obtaining authorization from USACE under Section 404 to implement the Project. The District will comply with all conditions of the 404 permit, including avoidance and protection measures and any compensatory mitigation required by USACE for issuance of the permit. The District will also

obtain a 401 Water Quality Certification from the Regional Water Quality Control Board and a Streambed Alteration Agreement from CDFW. All conditions required in the Certification/Agreement will be implemented as part of the Project. Implementation of Mitigation Measures BIO-8, and HYD-1 through HYD-4 would further minimize potential impacts to WOUS/WOS, including wetlands. **This impact is less than significant with mitigation incorporated.**

d) *The Proposed Project would not interfere substantially with the movement of any native resident or migratory species or with established native resident or migratory wildlife corridors because the Project is not located in a known migration corridor or recognized flyway. The Proposed Project would not impede the use of native wildlife nursery sites through implementation of mitigation.*

The Project area is not located in a known migration corridor or recognized flyway, and would not impede the use of native wildlife nursery sites. The Project is short-term and temporary, and Mitigation Measure BIO-1 states that activities would be restricted to designated work areas, access routes and staging areas on District-owned land around the reservoir; and will be restricted to the hours between sunrise and sunset. In addition, the District will clean up the site prior to the conclusion of each construction season, including removing and disposing of sediment piles; removal of equipment and vehicles from the site; and resumption of normal reservoir operations. Any effects on the movement of wildlife would be temporary. **This impact would be less than significant.**

e) *The Proposed Project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance with implementation of mitigation.*

Placer County has a several policies and ordinances that protect native and landmark trees, oak woodlands, and riparian corridors. These policies are detailed in the Natural Resources Element of the Placer County General Plan (Placer County 2013), the Tree Preservation Ordinance (Article 12.16 of the Placer County Code), and the Oak Woodland Management Plan (Placer County 2003). These policies are applicable to ministerial Projects that require approval by Placer County.

The Proposed Project involves potential removal of up to 10 trees for the replacement and realignment of the diversion pipe to the Gold Hill I Canal. This action would not conflict with Placer County policies for several reasons. The Proposed Project is implemented by the District and is subject to approval by the District Board of Directors, rather than County. In addition, while mitigation would not be required, the Project incorporates a number of mitigation measures that would minimize impacts to and protect biological resources including oak woodlands and riparian areas, including Mitigation Measures BIO-1, BIO-2, BIO-6, BIO-8, and BIO-9. This impact would be **less than significant with mitigation incorporated.**

f) The Proposed Project will 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.

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 because the Proposed Project does not occur in an area covered by any of these types of plans (USFWS 2013c). The Project area falls within the geographic jurisdiction of the draft PCCP. While the District is not a pre-approved permittee under the draft PCCP, they are considered a Participating

Special Entity in Section 8.5 of the draft PCCP, which means that when implementation of the final PCCP has begun, the District can request coverage under the final PCCP for take authorization for eligible Projects and activities. According to Section 2.3.3 of the draft PCCP, the Proposed Project would be considered eligible for coverage, as if falls within the category of "In-Stream Projects" (Placer County 2011). If the PCCP becomes effective prior to the implementation of the Proposed Project, participation in the PCCP by the District would be optional. The District can instead decide to work directly with resource agencies to obtain all applicable authorizations and permits. Because the draft PCCP is not yet finalized, approved, and in effect, and any future participation by the District would be optional, the Proposed Project would not conflict with any applicable habitat conservation plan or natural community conservation plan. Therefore, there would be **no impact.**

3.4.4 Mitigation Measures

BIO-1. General Construction Measures.

The District will implement the following to minimize disturbance of sensitive resources in the Project area:

- Construction activities will be limited to a designated work area (including the work corridor and staging area). The work area will be clearly identified on the construction drawings and will be staked and flagged where necessary prior to initiation of construction activities.
- All staging areas and access routes will be located on developed roads and areas that have already been disturbed.
- Construction activities, including activities within equipment staging areas, will be limited to the hours between sunrise (but no earlier than 7:00 a.m.) and sunset (but no later than 7:00 p.m.) on weekdays. Construction work on weekends and District-recognized holidays will be avoided when practical. If required, work on weekends and District-recognized holidays will be limited to the hours between 8:00 a.m. and 7:00 p.m.
- Vegetation removal will be limited to that which is necessary for implementation of the Project. This includes removal of approximately 0.07 acre of vegetation on the western shoreline of Orr Creek reservoir adjacent to the dam and approximately 0.11 acre on the eastern shoreline; as well as up to 10 trees for the realignment of the diversion to the Gold Hill I Canal. No other vegetation will be removed.
- The District will implement the following between-season activities:
    - Any sediment stockpiled in upland areas will be removed and disposed of properly prior to the next work season;
    - All equipment and vehicles will be removed from the Project area; and
    - The District will resume normal reservoir operations.

BIO-2. Environmental Awareness Training.

Construction personnel will attend an environmental awareness training prior to initiation of construction. The training will include a review of:

- Special-status species potentially occurring on site;
- Mitigation measures and BMPs to be implemented as part of the Project;

- Pertinent measures included in agency permits obtained for the Project;
- Procedures for reporting the presence of special-status species on site as well as any issues related to air or water resources.

BIO-3. Fish/Aquatic Species Rescue.

The District will develop and implement a fish rescue plan to avoid impacts to fish potentially present in the Orr Creek Reservoir. The plan will be reviewed and approved by CDFW as part of the Streambed Alteration Agreement application process. The plan will include (but is not limited to) the following:

- Prior to dewatering of Orr Creek Reservoir, (either prior to excavation or after completion of suction dredging, depending on which sediment removal method is selected), mesh netting will be installed across the creek channel upstream of the reservoir to prevent the downstream movement of fish into the reservoir. This netting will be routinely checked and maintained to ensure that it is effective and free of debris. The netting will be removed upon rewatering of the reservoir at the conclusion of Project activities.
    - Orr Creek Reservoir will be monitored during the dewatering process, and any fish that are stranded during the draw-down will be rescued.
    - Rescued fish will be captured and relocated to the nearest appropriate site outside of the work area.
- The following additional measures will be implemented if sediment is to be removed by suction dredging:
    - A silt curtain will be placed and anchored around the dredging operations at all times.
    - The outlet pipe of the suction dredger will be monitored for the presence of live fish, and any live fish found would be rescued.
    - Rescued fish will be captured and relocated to the nearest appropriate site outside the work area.
- A record will be maintained that will include the following data for each individual rescued and relocated (or as specified in CDFW permit conditions):
    - Date of capture and relocation,
    - Method of capture,
    - Fish species, life stage, fork length, and weight
    - Location of relocation in relation to the Project area, and
    - Total number of fish captured and relocated.
- The fish capture and relocation record will be provided to CDFW following completion of the Project.

BIO-4. Clean Water Act Permitting and California Fish and Game Code Compliance.

The District will obtain relevant CWA permits (e.g., Section 401. 402, and 404), and any permits required under the California Fish and Game Code (e.g., Section 1602 Streambed Alteration Agreement) and/or the

California Water Code (e.g., WDRs). The specific permits to be obtained may vary depending on the sediment removal method selected. All conditions identified in the permits will be implemented as part of the Project.

BIO-5. Frog and Turtle Monitoring

The following measure will be implemented to avoid impacts to special-status frogs and western pond turtle if mechanical excavation is the method selected for cleaning of the reservoir:

- Orr Creek Reservoir will be surveyed prior to commencement of activities to ensure that no turtles or frogs are present within the reservoir.
- If any animals are present, the animal(s) will be allowed to move out of harm's way, or, if necessary, a qualified biologist will relocate the individual(s) to the nearest area of suitable habitat outside of the Project area.
- A record will be maintained of all species relocated. The record will include:
    - Species,
    - Date of capture and relocation,
    - Method of capture,
    - Location of relocation in relation to the Project area, and
    - Total number of individuals captured and relocated.
- The frog and turtle relocation record will be provided to CDFW following completion of the Project.

BIO-6. Monitoring Prior to Stockpiling of Excavated Sediments.

The District will implement the following measures to reduce the potential for impacts to special-status wildlife during stockpiling of excavated sediments:

- The contractor will conduct a clearance survey every morning prior to stockpiling sediments to ensure that no wildlife are present in designated areas where excavated sediments would be stockpiled.
- If any animals are present, the animal will be allowed to move out of harm's way, or, if necessary, a qualified biologist will relocate the individual to the nearest area of suitable habitat outside of the Project area.
- Stockpiled materials would be removed as soon as possible following completion of each season of construction, and the areas would be allowed to revegetate naturally.

BIO-7. Protection of Special-Status Raptors or Other Bird Nests.

The District will implement the following measures to avoid disturbance of raptor or other bird nests:

- To avoid disturbing any raptor and bird nests, construction activities will be conducted during the non-breeding season for these species (between August 16 and February 28).

- If construction activities must be conducted during nesting season (between March 1 and August 15), a preconstruction survey will be conducted by a qualified biologist to determine if there are active nests present. The survey will be conducted no more than 30 days prior to Project initiation. If the biologist determines that the area surveyed does not contain any active nests, then Project activities can begin without any further mitigation.
- If active raptor nests are found, construction will not occur within 500 feet of an active nest until the young have fledged, as determined by a qualified biologist, or until the District receives written authorization from the CDFW to proceed.
- A 200-foot protective buffer will be established around the heron rookery present in the Project area. This protective buffer will be maintained throughout the Project.
- If active nests of non-raptorial birds are found, a 25-foot buffer will be established, and the nest will be avoided until the young have fledged, as determined by a qualified biologist.

BIO-8. Protection of Riparian and Wetland Habitats.

The District will implement the following mitigation measures to minimize potential impacts to riparian and emergent wetland habitats:

- No riparian or emergent wetland vegetation will be removed beyond that which is necessary for implementation of the Project.
- Prior to implementation of staging and construction or ground disturbing activities, the District will install orange or yellow construction fencing around all other riparian areas that could potentially be affected by Project activities. These areas will be avoided throughout Project implementation.

BIO-9. Protection of Oak Woodlands.

The District will implement the following mitigation measures to minimize potential impacts to oak woodlands:

- No native oaks will be removed during implementation of the Project.
- The District will erect construction fencing around the dripline of native oaks trees in or adjacent to Project work and staging areas, and will prohibit use of equipment or disturbance of soil within the fencing.

Refer also to Mitigation Measure HYD-1, HYD-2, HYD-3, HYD-4 and HYD-6 in Section 3.9, Hydrology and Water Quality.

3.5 Cultural and Tribal Resources

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☑
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 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?	☐	☑	☐	☐
e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native Tribe and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5050.1(k), or	☐	☑	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1 In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American Tribe.	☐	☑	☐	☐

3.5.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to cultural resources if the Project would:

- Cause a substantial adverse change in the significance of a unique archaeological resource or a historical resource as defined in Section 15064.5 of the State CEQA Guidelines, respectively;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.
- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native Tribe and that is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5050.1(k), or

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1 In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significant of the resource to a California Native American Tribe

Section 15064.5 of the State CEQA Guidelines defines "substantial adverse change" as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings.

3.5.2 Setting

Provided below is the natural and cultural setting of the Project as well as results of research conducted to obtain information on cultural resources within the Area of Potential Effects (APE), including a records search, a Native American consultation, and a field survey. The APE is defined to include the District-owned 30-acre parcel containing the reservoir. Information in this section is based on the *Orr Creek Reservoir Project Cultural Resources Inventory and Evaluation* (Windmiller *et al.* 2014).

Natural and Cultural Setting

The Project area is located in western Placer County, in the Sierra Nevada foothills, approximately two miles north of the City of Auburn. Geologic maps show that the APE is underlain entirely by igneous rock.

Until 1848, the greater Auburn region, including the Orr Creek Reservoir area, was within the Foothill Nisenan territory. Foothill Nisenan were mobile hunter-gatherers who constructed their camps and villages near water sources. Unlike the Sacramento Valley Nisenan, the Foothill Nisenan did not have large year-round villages. Instead, there were hundreds of small campsites and villages. One of the Foothill Nisenan's major centers was located at Auburn. Its sphere of influence during the early years of European-American contact included Foresthill Ridge to the east, Bear River to the north, south to the Middle Fork of the American River and down Auburn Ravine to the Lincoln vicinity.

The historical period of the Auburn region began with the discovery of gold in Auburn Ravine near Ophir on May 16, 1848, four months after Marshall's discovery at Coloma. Water was essential for productive mining. The first canal of importance was the Gold Hill and Bear River Canal, which transported water from the Bear River to Doty Flat, Ophir, Gold Hill, Oro city, Virginia, and other mining areas along the Auburn Ravine. Several companies were operational during this period, including the Gold Hill and Bear River Water Company, the Auburn and Bear River Water and Mining Company (later called the South Yuba Water Company). In 1910, the South Yuba Water Company deeded its assets to the Pacific Gas & Electric Company (PG&E). PG&E's acquisition notwithstanding, many of the old reservoir and canal systems built during the Gold Rush had become underused and in need of repair. The Nevada County Farm Bureau and community leaders became determined to acquire the old systems, improve them and create a new public water system. Engineering studies, negotiations for water rights and a campaign to muster support were undertaken between 1917 and 1921. Toward the end of 1921, the District was formed. Five years later, Placer County residents joined the District. The District began delivering water to local farms in 1927.

Records Search

A search of the North Central Information Center (NCIC), house at California State University, Sacramento was conducted on July 30, 2014. The search included the Area of Potential Effects (APE) for the Proposed Project, plus a 0.25-mile buffer. The APE is defined to include the District-owned 30-acre parcel containing the reservoir.

NCIC staff identified one available report covering the Project area, a 1972 archaeological survey by Jerald Johnson of approximately 75 miles of canals in Nevada and Placer Counties. The information center reported no listings on the Office of Historic Preservation's Historic Property Directory; no listings in the Archaeological Determinations of Eligibility and; no listings in the California Inventory of Historic Resources.

The 1972 report reports one cultural resource: A small midden surrounded by granite outcrops with three mortar holes. This resource is within the 0.25-mile buffer around the APE, but outside of the APE itself.

A review of geologic maps and search of the University of California Museum of Paleontology database indicated that the entire the District 30-acre property is mapped as igneous rocks. The landscape is metavolcanic. None of the rocks in this area have any potential to yield fossils.

Native American Consultation

The District contacted the Native American Heritage Commission (NAHC) on January 22, 2014 to request a sacred lands file search, obtain a list of Native American individuals or groups to notify regarding the Project and to elicit any concerns or information they wished to convey. The NAHC conducted a sacred lands file search, and failed to identify any known Native American cultural resources in the Project area. The NAHC provided a list of 12 Native American contacts. A letter was mailed to each contact on October 2, 2014, along with a map, Project description, and request for knowledge of any Native American cultural resources.

One letter response was received as a result of the Native American consultation. Daniel Fonseca, Cultural Resources Director of the Shingle Springs Rancheria, contacted the District in a letter dated October 7, 2014. Mr. Fonseca indicated that the Shingle Springs Band of Miwok Indians was not aware of any known cultural resources within the APE. However, Mr. Fonseca requested continued consultation through updates as the Project progresses. If, during implementation of the Project, any additional information or human remains come to light, Mr. Fonseca expressed the desire to discuss the tribe's process to protect sacred objects (Windmiller *et al.* 2014).

Assembly Bill (AB) 52 established a formal consultation process with all Native American Tribes on the NAHC list (effective July 1, 2015). Since the Project was not previously implemented, and with the enactment of AB 52, the District contacted the NAHC again on August 17, 2017 to update its tribal consultation efforts. The NAHC conducted a sacred lands file search, and failed to identify any known Native American cultural resources in the Project area. The NAHC provided a list of 6 Native American contacts. A letter was mailed to each contact on September 6, 2017, along with a map, Project description, and request for knowledge of any Native American cultural resources.

During the consultation conducted in 2017, two responses were received, one from United Auburn Indian Community (UAIC) and one from Shingle Springs Rancheria. Cherilyn Neider, Tribal Historic

Preservation Administrative Assistant of the UAIC, contacted the District in an e-mail dated September 25, 2017 and requested consultation for the Project. In addition, the UAIC requested that a tribal representative be allowed to observe and participate in cultural resource surveys for the Project; that a tribal monitor be present for ground-disturbing activities if cultural resources are identified within the Project area; and that consultation with UAIC be conducted, and written consent received, prior to any subsurface testing and data recovery. Daniel Fonseca, Tribal Historic Preservation Officer of the Shingle Springs Rancheria, contacted the District via letter dated October 10, 2017 and requested copies of all completed record searches, surveys, and reports conducted in the Project area, and to be notified if new information or human remains are found during Project implementation.

On October 24, 2017, the District sent UAIC and Shingle Springs Rancheria electronic copies of all existing cultural resource assessments and record searches conducted in the Project area and provided proposed mitigation measures for review. The District requested that UAIC and Shingle Springs Rancheria respond with any comments or revisions before November 15, 2017. To date, no responses were received.

Field Survey

A pedestrian survey was conducted on July 19, 2014, which included an inspection of the APE along zig-zag transects approximately 15 meters apart. The APE is largely wooded. Ground visibility was approximately 50%. Cultural resources were recorded on DPR 523 series forms from the California Office of Historic Preservation.

Field Survey Results

Results of the field surveys are summarized from the Orr Creek Reservoir Project Cultural Resources Inventory and Evaluation (Windmiller *et al.* 2014). Four cultural resources were identified as a result of field surveys. This includes Orr Creek Dam; the Gold Hill I Canal; an extensive ditch system (pre-dating the Gold Hill I Canal) on the eastern side of Orr Creek; and an isolated Native American bedrock milling station with two mortar holes. No paleontological resources were identified. The area encompassing the APE is mapped entirely as igneous rock, which does not have any potential to yield paleontological resources.

A brief description of each of the cultural resources is provided below.

The Orr Creek Dam was built between 1944 and 1953 by Nevada Irrigation District. The District retained Blackie and Wood, a San Francisco engineering firm to construct the Gold Hill I Canal and flume. Most likely, this firm designed and constructed the Orr Creek Dam, which acts as the canal's headworks. The dam is not associated with the District's initial development in the 1920s, nor is it associated with District's expansion of its canal and reservoir system during its Yuba-Bear River Power Project completed in the 1960s. The dam does not appear to be associated with a person important in history, nor does the dam appear to have historical importance for engineering or design. The dam appears to be a simple functional structure. The dam and associated features are not eligible under any National Register or California Register criteria and does not qualify as a “unique archeological resource” under CEQA (Windmiller *et al.* 2014).

An approximately 220-foot-long segment of the Gold Hill 1 Canal is located within the APE. The segment begins as a pipeline extending from the west side of Orr Creek Dam's outlet gate. The pipeline is supported by a pipe bridge. The bridge is constructed of steel framing supported by concrete piers. A steel catwalk

with guard rails is embedded into the top of the pipeline. The pipeline ends at the south side of an access road where it spills into the earthen portion of the canal, which meanders southward. The canal segment was constructed in 1947. Nevada Irrigation District retained Blackie and Wood, a San Francisco engineering firm, to construct the canal flume and, most likely, its associated headworks. The short, approximately 25-foot-long reach of earthen canal completes the portion located within the APE. The canal segment is located on a north-facing slope in rocky ground. The earthen portion of the water conveyance feature appears unaltered. However, the pipeline built in 1964 replaced a 1947 flume. The canal segment is not eligible under any National Register or California Register criteria and does not qualify as a "unique archeological resource" under CEQA (Windmiller *et al.* 2014).

The isolated bedrock milling station is a minor archeological resource on a metavolcanic rock outcrop measuring 2.4 meters north–south and 3.2 meters east–west. No cultural deposit was noted from surface observations. The site boundary is the rock outcrop itself. The site is not eligible under any National Register or California Register criteria and does not qualify as a "unique archeological resource" under CEQA (Windmiller *et al.* 2014).

The ditch system consists of four segments of earthen ditch totaling 900 feet in length located on a flat near the east edge of Orr Creek Reservoir. Based on available maps, the ditch pre-dates the Gold Hill I Canal. The ditch system includes a "spill" into the reservoir. The top width of the ditch varies between 10 and 14 feet. The bottom width varies between 2 and 3 feet. Depth varies between 3 and 4 feet. Small shrub oaks grow from the ditch banks. The ditch is not eligible under any National Register or California Register criteria and does not qualify as a "unique archeological resource" under CEQA (Windmiller *et al.* 2014).

3.5.3 Discussion

a) *The Proposed Project would not cause a substantial adverse change in the significance of a unique historical resource as defined in Section 15064.5 of the State CEQA Guidelines.*

Four cultural resources were identified during field surveys conducted in the Project area. As described above, this includes Orr Creek Dam; the Gold Hill I Canal; an extensive ditch system (pre-dating the Gold Hill I Canal) on the eastern side of Orr Creek; and an isolated Native American bedrock milling station with two mortar holes. These resources are not eligible under any National Register or California Register criteria and do not qualify as unique archeological resources under CEQA (Windmiller *et al.* 2014). Therefore, the Project will have **no impact** on a unique cultural resource as defined in Section 15064.5 of the State CEQA Guidelines.

b) *The Proposed Project would not cause a substantial adverse change in the significance of a unique archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines with implementation of mitigation.*

No archaeological resources were identified within the Project area. However, while it is unlikely, the possibility remains that previously unidentified archaeological resources may be encountered during Project activities. Thus, the Proposed Project could potentially adversely affect unique archaeological resources. Implementation of Mitigation Measure CULT-1 would minimize the potential for the Proposed Project to adversely affect unique archaeological resources. Therefore, this impact is **less than significant with mitigation incorporated**.

c) *The Proposed Project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature with implementation of mitigation.*

Consulting Paleontologist, Kenneth L. Finger, Ph.D., completed a paleontological resources search on July 29, 2014 (Windmiller *et al.* 2014). A review of geologic maps and search of the University of California Museum of Paleontology database indicated that the entire the District 30-acre property is mapped as igneous rocks. The landscape is metavolcanic. None of the rocks in this area have any potential to yield fossils. Therefore, the Project area has no sensitivity for paleontological resources. No further paleontological mitigation measures are recommended.

Ground-disturbing activities have the potential to disturb unknown or unidentified buried paleontological resources within the Project area. Implementation of Mitigation Measures CULT-1 would minimize the potential of the Proposed Project to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Therefore, this impact is **less than significant with mitigation incorporated.**

d) *The Proposed Project would not disturb any human remains, including those interred outside of formal cemeteries with implementation of mitigation.*

Human remains were not discovered during the current field investigation. While it is unlikely, there is a possibility that buried human remains may be encountered during construction activities. Implementation of Mitigation Measure CULT-1 would minimize the potential for the Proposed Project to disturb any human remains and CULT-2 includes tribal consultation in the event that surveys are conducted, tribal cultural resources are identified, or if subsurface testing must be implemented. Therefore, this impact would be **less than significant with mitigation incorporated.**

e) *The Proposed Project would not Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074.*

As described in Section 3.5.2, NID conducted consultation with Native American Tribes pursuant to AB 52 and received responses from the UAIC and the Shingle Springs Rancheria. Both indicated that no known tribal cultural resources are known from the Project. However, as described under item b), above, the possibility remains that previously unidentified cultural tribal resources may be encountered during Project activities. The Shingle Springs Rancheria requested to be notified if new information or human remains are found during Project implementation. Therefore, the District will implement Mitigation Measure CULT-1 would minimize the potential for the Proposed Project to disturb any human remains and CULT-2 includes tribal consultation in the event that surveys are conducted, tribal cultural resources are identified, or if subsurface testing must be implemented. With implementation of these measures, impacts to tribal cultural resources would be **less than significant with mitigation incorporated.**

3.5.4 Mitigation Measures

CULT-1. Accidental Discovery of Cultural Resources

If archeological materials, historic-era resources, or human remains are uncovered at any time during implementation of the Project, the District will treat those materials in a manner consistent with District Policy 6085 for Cultural Resources. The full text of this policy is provided as Appendix G. In addition, if cultural resources are uncovered during implementation of the Project, the District will notify tribal representatives from United Auburn Indian Community and Shingle Springs Rancheria.

CULT-2. Tribal Consultation

The District will notify tribal representatives that expressed an interest in the Project in the event of the following:

- If additional cultural resource surveys are required, one week prior to the survey the District will notify tribal representatives and invite them to participate.
- Previously unknown tribal cultural resources are identified within the Project area.
- Subsurface testing and data recovery must be implemented.

3.6 Geology, Soils, and Seismicity

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	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:	☐	☐	☐	☑
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☐	☑
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☑	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑

3.6.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to geology, soils, or seismicity if the Project would:

- 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;
    - Strong seismic ground shaking;
    - Seismic-related ground failure, including liquefaction; or
    - Landslides.
- Result in substantial soil erosion or the loss of topsoil;

- 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;
- 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; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

3.6.2 Setting

General Geology

The geology of the area includes metamorphosed volcanic and ultramafic rocks of the Foothill-Melange-Ophiolist Terrane. The ages of these rocks range from late Paleozoic to early Mesozoic (Kohler 1984). The Orr Creek Reservoir site is primarily in metamorphosed volcanic rock but less than 1 mile upstream of the reservoir the creek flows through the Wolf Creek Fault Zone and a block of ultramafic rock.

The California Department of Conservation, California Geological Survey (2006) has mapped the Orr Creek Reservoir area as moderate for the presence of naturally occurring asbestos, which is known to be present in these rock types in Placer and nearby counties. Fault zones (such as the Wolf Creek Fault Zone) may contain slivers of serpentinite and high concentrations of talc and chlorite, and are considered the most likely settings for naturally occurring asbestos in these rocks.

Soils

Soils underlying the Project area include Auburn-Argonaut-Rock complex (2-15% slope), Auburn-Sobrante-Rock outcrop complex (2-30% slope), and Boomer-Rock outcrop complex (5-30% slope) (NRCS 2017). Auburn, Argonaut, and Sobrante soils are well-drained silt-loams overlying bedrock and are derived from residuum weathered from metamorphic rock. Boomer soils are well-drained with moderately slow permeability derived from residuum weathered from metavolcanics. Rock outcrops are composed of unweathered bedrock (NRCS 2017).

Seismicity

The Project area is in the vicinity of the Wolf Creek Fault Zone, which generally trends north to northwest and roughly coincides with the Highway 49 alignment between Auburn and Grass Valley. However, no individual faults have been mapped by the California Division of Mines and Geology within the Project area addressed in this analysis. The Wolf Creek Fault Zone is part of the Foothills Fault System, which originated as a pre-Quaternary (i.e., greater than 1.6 million years before present) structure. It is categorized as a Type C fault zone, with low seismicity and a low rate of recurrence. However, individual fault segments within Foothills Fault System have become reactivated within the Holocene (the current geological epoch).

The site is not located in an Alquist-Priolo Earthquake Fault Zone (California Department of Conservation 2017). Alquist-Priolo Earthquake Fault Zones are active faults, which represent the highest earthquake hazard and are those that have ruptured to the ground surface during the Holocene period (about the last 11,000 years).

3.6.3 Discussion

a) *The Proposed Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving*:

i) *The Proposed Project would not result in impacts due to ground rupture at the Project area*.

The Project area is located in the vicinity of the Wolf Creek Fault Zone. However, this is not a known active earthquake fault zone; therefore, ground rupture at the site resulting from seismic activity is unlikely. Therefore, there would be **no impact.**

ii) *The Proposed Project would not result in increased exposure or risk to people or property due to seismic ground-shaking*.

The Project area may be subject to ground shaking associated with distant seismic activity. If seismic activity centered outside the Project area were to result in ground shaking, the Proposed Project would not contribute to a significant increase in the risk of injury or death related to such ground shaking. Therefore, there would be **no impact.**

iii) The Proposed Project would not result in seismic-related ground failure, including liquefaction.

Liquefaction occurs when a water-saturated soil temporarily loses its strength and liquefies when subjected to intense and prolonged ground shaking. This most often occurs in areas of loose, sandy soils. The Proposed Project would entail the removal of sediments from the Orr Creek Reservoir lake bed, as well as some minor infrastructure improvements to the reservoir dam and related facilities. This would not increase the likelihood of seismic-related ground failure, including liquefaction. Therefore, there would be **no impact.**

iv) *The Proposed Project would not result in landslides.*

The Project area is characterized by low to moderate slopes and does not support unstable soils that pose a risk for landslide. Excavated sediments removed from the reservoir would be stockpiled on flat upland areas immediately adjacent to the reservoir. After drying the stockpiles would be removed and disposed of at an appropriate location. None of these Project activities would occur on steep slopes or increase the potential risk of landslides. Therefore, there would be **no impact.**

b) *The Proposed Project would not result in substantial soil erosion or the loss of topsoil.*

Construction activities associated with the Proposed Project could result in temporary construction-related erosion. To minimize the potential for erosion, the District will implement Mitigation Measure HYD-1, which requires incorporation of appropriate BMPs into the Project including, but not limited to, securing stockpiled sediments or areas where high surface runoff is expected with silt fences, straw wattles or similar measures. Therefore, this impact would be l**ess than significant with mitigation incorporated.**

c) *The Proposed Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project and would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse*.

The Proposed Project is not located on a geologic unit or soil that is considered unstable, or that would become unstable as a result of the Project. As described for item (a) above, the Project area would not result in an increased risk for landslide, lateral spreading, subsidence, liquefaction, or collapse. Therefore, this impact would be **no impact**.

d) *The Proposed Project would not be located on expansive soil, creating substantial risks to life or property*.

Expansive soils are typically fine-grained, clay soils that swell when they absorb water and shrink as they dry. Soils in the Project area are predominantly well-drained loams, with only minor clay components (NRCS 2017). Therefore, the Proposed Project is not located on expansive soils and would not create substantial risks to life or property. Therefore, there is **no impact**.

e) *The Proposed Project would not be located on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater*.

The Proposed Project does not include use of septic tanks or the development of wastewater treatment systems. Therefore, there would be **no impact.**

3.6.4 Mitigation Measures

Refer to Mitigation Measures HYD-1 in Section 3.9, Hydrology and Water Quality.

3.7 Greenhouse Gases and Climate Change

Would the Project	Potentially Significant Impact	Less than Significant with Mitigation	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?	☐	☐	☑	☐

3.7.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact on the environment related to GHG and climate change if the Project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

3.7.2 Setting

Several state and local actions have been taken to limit GHG emissions implicated in global warming. Those actions are described below.

Executive Order S-3-05

On June 1, 2005, California Governor Arnold Schwarzenegger issued Executive Order S-3-05. It included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80% below 1990 levels. To meet the targets, the governor directed several state agencies to cooperate in the development of a climate action plan. The secretary of the California Environmental Protection Agency (Cal-EPA) leads the Climate Action Team (CAT), whose goal is to implement global warming emission reduction programs identified in the climate action plan and to report on the progress made toward meeting the emission reduction targets established in the executive order.

The first report to the governor and the legislature was released in March 2006, to be issued bi-annually thereafter. The CAT report to the governor contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met (Cal-EPA 2010).

California Global Warming Solutions Act of 2006 (Assembly Bill 32)

In 2006, the California state legislature adopted the California Global Warming Solutions Act of 2006 (AB 32). AB 32 establishes a cap on statewide GHG emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emission levels. Under AB 32, GHGs are defined as carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires that ARB:

- Adopt early action measures to reduce GHGs;
- Establish a statewide GHG emissions cap for 2020 based on 1990 emissions;
- Adopt mandatory report rules for significant GHG sources;
- Adopt a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms, and other actions; and
- Adopt regulations needed to achieve the maximum technologically feasible and cost-effective reductions in GHGs.

On April 23, 2009, the ARB adopted a low carbon fuels standard (LCFS). This standard requires that all fuels sold in California must have a reduced carbon content that will lower emissions by 10% by 2020.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. The bill directed the OPR to prepare, develop, and transmit to the California Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The California Resources Agency adopted those guidelines on December 30, 2009 and they became effective on March 18, 2010.

Senate Bill 32

SB 32 was signed on September 8, 2016 to establish a California GHG reduction target of 40% below 1990 levels by 2030. California is on track to meet or exceed this current target, as established in AB 32. This new emission reduction target will make it possible to reach the ultimate goal of reducing emissions 80% under 1990 levels by 2050.

Actions Taken by the Governor's Office of Planning and Research

In June 2008, the Governor's Office of Planning and Research (OPR) issued a Technical Advisory on CEQA and Climate Change (OPR 2008). This document recommends that, for Projects subject to CEQA, emissions be calculated and mitigation measures be identified to reduce those emissions. The OPR report does not identify emission thresholds for GHGs, but instead recommends that each lead agency develop its own thresholds.

On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines for GHG emissions, as required by Senate Bill 97 (Chapter 185, 2007). These Guideline amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The Natural Resources Agency conducted formal rulemaking in 2009, prior to certifying and adopting the amendments, as required by SB 97. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010.

Actions Taken by California Attorney General's Office

The California Attorney General (AG) has filed comment letters under CEQA about a number of Proposed Projects. The AG has also filed several complaints and obtained settlement agreements for CEQA documents

covering general plans and individual programs that the AG found either failed to analyze GHG emissions or failed to provide adequate GHG mitigation. The AG's office has prepared a report that lists measures that local agencies should consider under CEQA to offset or reduce global warming impacts. The AG's office also has prepared a chart of modeling tools to estimate GHG emissions impacts of Projects and plans. Information on the AG's actions can be found on at the California Department of Justice Office of Attorney General web site (California Department of Justice 2017).

3.7.3 Discussion

a) *The Proposed Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment*.

CEQA Guidelines § 15064.4 allow for a qualitative analysis to determine the extent to which a Project increases GHG emissions compared to the existing environmental setting. The Proposed Project would result in minor, short-term increases in GHGs associated with vehicle and equipment use. During implementation, the Proposed Project would generate intermittent and short-term carbon dioxide emissions associated with combustion of gasoline and diesel fuel resulting from the operation of the equipment identified in the Project Description, daily commutes to and from the site by workers on weekdays over a period of up to 120 days each work season, and up to an estimated maximum of approximately 400 trips to transport sediment off-site (up to 7 trips per day during up to 60 working days per work season). In addition, Placer County is designated as a non-attainment zone for ozone, which is considered a GHG. The Project would produce NOx, which is a pre-curser for ozone. As described in Section 3.3.3, the most recent air quality plan for Placer County was adopted in 2015 and includes an updated emission inventory for NOx. The Proposed Project would not result in emissions beyond those accounted for in the regional emissions inventory, which assumes routine use of on-road equipment such as trucks, as well as "other mobile source groupings" such as construction equipment (Placer County 2015). Construction GHG emissions would be intermittent and substantially less than the lower reporting limit for major stationary sources established by the ARB. That reporting limit requires sources that generate more than 25,000 metric tons per year of CO_2 equivalent (CO_2e) to report GHG emissions to ARB. Implementation of the Proposed Project would entail the operation of small gas or diesel-powered equipment and vehicles and would include no stationary emission sources. Thus, Proposed Project operation would not have a significant impact on the environment resulting from GHG emissions. This impact would be **less than significant.**

b) *The Proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases*.

State guidelines on GHG emissions do not establish any specific thresholds for determining whether those emissions are significant. However, in October 2016, PCAPCD adopted significance thresholds for criteria pollutants and GHG emissions (Placer County 2016). For a project's construction-related GHG emissions PCAPCD has established a threshold of 10,000 metric tons (MT) of CO_2e per year. PCAPCD also establishes a "De Minimis" category for projects emitting less than 1,100 MT CO_2e per year.

As described in (a) above, GHG emissions associated with the Proposed Project would be negligible and temporary. The Proposed Project would not conflict with any existing GHG laws, plans, policies, or regulations adopted by the California legislature, the ARB, the California AG, the California OPR, or the PCAPCD. Therefore, this impact would be less **than significant**.

3.7.4 Mitigation Measures

No significant impacts related to greenhouse gases and climate change would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.8 Hazards and Hazardous Materials

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	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?	☐	☑	☐	☐

3.8.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to hazards and hazardous materials if the Project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- 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, create a significant hazard to the public or the environment;

- 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, result in a safety hazard for people residing or working in the Project area;
- For a Project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the Project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- 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.

3.8.2 Setting

Hazardous materials and wastes are regulated by federal and state laws and are required to be recycled or properly disposed. Placer County Department of Environmental Health is the local Certified Unified Program Agency (CUPA) that manages programs for hazardous materials storage and hazardous waste disposal. No hazardous waste sites are located within or adjacent to the Project area (California Department of Toxic Substances Control [DTSC] 2017). The closest hazardous waste site is Cruz Ranch, located approximately 2 miles northeast of the Project area, a 10-acre parcel with soil contaminated with lead, chromium, copper, and other compounds from illegal dumping activity that took place in the early 1990s.

The geology of the Project area includes metamorphosed volcanic and ultramafic rocks of the Foothill-Melange-Ophiolist Terrane. The Orr Creek Reservoir site is primarily in metamorphosed volcanic rock but less than 1 mile upstream of the reservoir the creek flows through the Wolf Creek Fault Zone and a block of ultramafic rock. The California Department of Conservation, California Geological Survey (2006) has mapped the Orr Creek Reservoir area as moderate for the presence of naturally occurring asbestos, which is known to be present in these rock types in Placer and nearby counties. Fault zones (such as the Wolf Creek Fault Zone) may contain slivers of serpentinite and high concentrations of talk and chlorite, and are considered the most likely settings for naturally occurring asbestos in these rocks. In addition, the reservoir was constructed during an era in which hydraulic gold mining was occurring in the upper watershed, and there is therefore some potential for high mercury levels in the sediments of the reservoir. Therefore, sediments within the reservoir may potentially contain minerals and metals that are hazardous to the natural or human environment.

In general, the potential severity of a hazardous material incident depends on the type, location, and quantity of the material released. The potential for hazardous material or waste spills during transport generally reflects the greatest risk of public exposure given residences that are typically close to transportation corridors.

3.8.3 Discussion

a) *The Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.*

b) *The Proposed Project would not 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.*

Although flammable and combustible materials such as gasoline and diesel fuel would be used during Project implementation, their use is temporary and all materials would be used in accordance with applicable federal, state, and local laws, including Cal-OSHA requirements and manufacturer's instructions. As described in Mitigation Measure HYD-1, the District's contractor would prepare a SPCP for the Proposed Project that would be implemented in the case that spills occurred during construction.

Sediments would be stockpiled on land adjacent to the reservoir for drying, and dewatered sediment will be hauled off site for disposal/use. Based on the geology of the area and the known historical environmental impacts of mining in the watershed, sediments could potentially contain minerals or metals that are considered hazardous to human health. The District will implement Mitigation Measure HYD-5 to ensure proper stockpiling, storage, and disposal of excavated or dredged sediments. This measure requires sampling and analysis of the soil for metals, and comparison of the results to applicable health screening levels. The results of this analysis would indicate the best disposal or use options for the sediments. Sediments would be dried in lined containment structures. If sediment is to be disposed of in a landfill, no further restrictions on disposal are required, since landfills operate under their own WDR and/or NPDES permits that are designed to protect water quality. If sediment is to be reused:

- If concentrations exceed Hazardous Waste Thresholds, the sediment will be disposed of in accordance with relevant hazardous waste regulations.
- If concentrations of all metals are below Hazardous Waste Thresholds, no restrictions on reuse will be implemented.
- If concentrations of individual metals exceed Human Health Screening Levels or Regional Screening Levels, but not Hazardous Waste Thresholds, the sediment will only be reused on a site where the native soil contains equivalent or higher concentrations of these metals. That is, soil will be sampled and tested for metals for which the sediment exceeds the above thresholds at the proposed disposal/reuse site and compared to the concentrations in the sediment. If the native soil metals concentrations are higher than the sediment concentrations, the sediment can be reused/disposed of without further characterization.

With incorporation of Mitigation Measures HYD-1 and HYD-5, this impact would be **less than significant with mitigation incorporated**.

c) *The Proposed Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.*

The Project area is not located within ¼ mile of an existing or proposed school. Therefore, there is **no impact.**

d) *The Proposed Project is not located on a site which is included on a list of hazardous materials sites and would not create a significant hazard to the public or the environment.*

Based on a search of the DTSC EnviroStor database, the Project area is not located on, or near, any federal-, state-, or local-designated hazardous wastes site (DTSC 2017). Therefore, there would be **no impact.**

e) *The Proposed Project is not located within an airport land use plan or within two miles of a public airport or public use airport and would not result in a safety hazard for people residing or working in the Project area*.

The Proposed Project is not located within an airport land use plan or within 2 miles of a public airport. The closest airport is the Auburn Municipal Airport, located approximately 2.5 miles southeast of the Project area. Implementation of the Proposed Project would not result in a safety hazard for people residing or working in the Project area. Therefore, there would be **no impact**.

f) *The Project area is not located within the vicinity of any private airstrip and, therefore, would not pose a safety hazard related to such facilities or for people residing or working in the Project area*.

The Project area is not located in the vicinity of a private airstrip. Therefore, there would be **no impact**.

g) *The Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan*.

The Proposed Project is located in a low-density rural area and all activities would be restricted to District's private property around Orr Creek Reservoir. As described in Mitigation Measure TRA-1, the District will implement standard construction traffic, access and transportation controls including notifying residents of work, implementing traffic controls consistent with State standards, lighting any barricades at night, and ensuring all roads used during construction are restored to pre-Project condition or better following completion of the Project. Therefore, this impact is **less than significant with mitigation incorporated.**

h) *The Proposed Project would not 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 with implementation of mitigation*.

Project activities would primarily be located within the Orr Creek Reservoir and would not pose a significant wildland fire risk. However, fire risk could result from refueling and operating vehicles or other construction equipment. The District would implement Mitigation Measure HAZ-1, which includes standard fire-prevention measures. This would reduce potential construction-related fire hazard impacts to a **less than significant level with mitigation incorporated.**

3.8.4 Mitigation Measures

HAZ-1. Standard Fire Prevention Measures.

The District's contractor will implement standard fire prevention measures, including but not limited to, requiring fire prevention equipment to be available at all times, identifying construction sites as non-smoking areas, and providing fire prevention training to construction personnel. Portable communication devices (i.e., radio or mobile telephones) would be made available to all construction personnel to allow for prompt notification to the District or other local authorities in case of a fire.

Refer also to Mitigation Measures HYD-1 and HYD-5 in Section 3.9, Hydrology and Water Quality.

3.9 Hydrology and Water Quality

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	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 a 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?	☐	☐	☐	☑

3.9.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to hydrology and water quality if the Project would:

- Violate any water quality standards or waste discharge requirements;
- 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;

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- 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;
- 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;
- Otherwise substantially degrade water quality;
- 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;
- Place structures within a 100-year flood hazard area that would impede or redirect flood flows;
- 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; or
- Result in inundation by seiche, tsunami, or mudflow.

3.9.2 Setting

The Proposed Project is located in the Bear River watershed. Existing water quality objectives for the physical, chemical, and bacterial constituents are established in the "Sacramento River Basin and San Joaquin River Basin Water Quality Control Plan" (Basin Plan) (CVRWQCB, Fourth Edition revised July 2016), "Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California" (Federal Register, 65 FR 31682, EPA 2000), and the "Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants" (Federal Register, 57 FR 60848, EPA 1992). The Basin Plan includes water quality objectives established by the Central Valley Regional Water Quality Control Board.

3.9.3 Discussion

a) *The Proposed Project would not violate any water quality standards or waste discharge requirements with implementation of mitigation.*

Water quality may be affected by Project activities including reservoir dewatering, use of construction vehicles and heavy equipment, and excavation and other ground disturbance within the reservoir itself and in adjacent upland areas. Effects to water quality could vary based on the sediment removal method selected. A discussion of potential impacts and mitigation measures to reduce such impacts to less-than-significant levels is provided below.

Heavy equipment required for sediment removal has the potential to cause accidental spills of fuel, and lubricating oil and contaminants could be released into the watershed and adversely affect water quality. Tracking of sediment could occur as a result of movement of vehicles between the reservoir and sediment laydown areas. Surface runoff into drainages from the transport of the removed sediment to the dewatering areas could also affect water quality. In order to reduce the potential for these and other construction-related water quality impacts, the District will implement Mitigation Measure HYD-1 which states that water quality BMPs will be implemented by the District or its contractors including, but not

limited to, limiting work within the dewatered reservoir to dry weather conditions; using rubber mats and sediment erosion structures to prevent sediment tracking along routes between the reservoir and sediment laydown areas; securing stockpiled sediments with straw wattles, bales, or similar; preparing and implementing an SPCP; and refueling, storing, servicing and maintaining equipment in a manner than does not impact water quality. In addition, as stated in Mitigation Measure BIO-4, all water quality conditions specified in CWA, California Water Code, and California Fish and Game Code permits will be implemented as part of the Project.

The Project requires dewatering of the reservoir either prior to mechanical excavation or after completion of suction dredging, which will necessitate significantly reducing the water level and isolating the reservoir from incoming and outgoing water. Flows from upstream Orr Creek will be conveyed in piping to the downstream side of the dam and discharged back into the Gold Hill I Canal and Orr Creek (Figure 3). To reduce the potential for impacts to water quality during dewatering, the District will implement Mitigation Measures HYD-2 and HYD-3. HYD-2 requires development and implementation of a plan that describes how dewatering and diversion will be implemented to reduce turbidity in the reservoir. The plan will also require the District to implement methods to ensure that water discharged into Orr Creek downstream of the dam does not result in scour. The plan will be submitted for agency approval as part of water quality permit application packages and implemented as part of the Project. HYD-3 requires development of a WQMP that describes the approach for monitoring water quality during dewatering and sediment removal activities; specifies adaptive management actions; and requires suspension of work if constituents exceed threshold levels. The plan will be submitted for agency approval as part of water quality permit application packages and implemented as part of the Project.

The District may opt to use a hydraulic suction dredger to remove sediment. Use of this equipment could potentially increase turbidity within the reservoir. In addition, because hydraulic gold mining has occurred historically in the watershed upstream of Orr Creek Reservoir, there is some potential for high mercury levels in the sediments of the reservoir, which could be resuspended as a result of use of the dredger. However, water quality effects resulting from hydrologic suction dredging are expected to be minimal for several reasons. First, hydraulic suction dredging is considered among the least environmentally harmful dredging alternative, in part because resuspension of sediment and turbidity is minimized. Second, sediment characterization studies conducted recently for Orr Creek Reservoir did not detect total concentrations of inorganic constituents (including mercury) that exceeded human health screen levels or that were elevated with respect to regional background conditions (Appendix H, NID 2018). Finally, any potential for resuspension of sediment and turbidity would be further minimized through implementation of the WQMP, described above (HYD-3) and HYD-4, which requires modification of the rate and method of cutter head rotation speed and swing speed, as necessary, to maintain compliance with water quality thresholds as defined in the WQMP; prohibits bank undercutting; and requires use of a silt curtain anchored around the dredging operations at all times. The curtain would be designed to contain turbidity caused by dredging activity, and to resist wind and wave action. Implementation of HYD-3 and HYD-4 would minimize resuspension of sediment and turbidity both within the water and in Orr Creek downstream of the dam.

The District may potentially dewater the sediment mechanically, in which case the water that is drained from the sediment is returned to the reservoir via a return line. If the District does not use mechanical drying methods, Mitigation Measure HYD-4 states that slurry suctioned from the reservoir will be discharged first to temporary storage tanks, and the sediment would be allowed to settle, prior to

returning clarified water to the reservoir. If either of these options is implemented, water returned to the reservoir will be sufficiently clarified that the discharge meets all Basin Plan objectives, including those for sediment, settleable material, suspended material, and turbidity.

Dewatered sediment will be hauled off site for disposal/use. As described previously, based on the geology of the site and known historical environmental impacts of mining in the watershed, sediments could potentially contain metals that may affect water quality in areas where the sediment will be used or disposed. Recent sediment characterization studies conducted by the District indicate that concentrations of inorganic constituents are within acceptable limits (NID 2018). To further minimize any potential for contamination during disposal of excavated or dredged sediments, the District will implement Mitigation Measure HYD-5, which commits the District to obtain one sample for every 2,000 cubic yards of sediment and to screen the sediments for metals. Sediments will be disposed or used as appropriate based on the results of the testing.

Finally, long-term operation of the low-level outlet could result in turbidity in Orr Creek downstream of the diversion through bank erosion and through release of sediments from the reservoir. To prevent potential impacts to water quality from long-term operation of the low-level outlet, the District will implement Mitigation Measure HYD-6. This measure requires that the District will include a dissipation structure to reduce the potential for scour where water is discharged at the outlet. In addition, the low-level outlet would only be operated during periodic reservoir maintenance or during high flows, when water is spilling over the existing spillway. This would ensure that there is sufficient water to carry sediments downstream.

With incorporation of HYD-1 through HYD-6, and BIO-4, potential impacts to water quality resulting from dewatering and diversion; excavation, removal, and drying of sediments; and disposal or use of excavated sediments would be **less than significant with mitigation incorporated.**

b) *The Proposed Project would not 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*.

The Project includes dewatering of the reservoir. Although the reduced water level will temporarily reduce the percolation to groundwater, the ground under the reservoir would still be saturated. Furthermore, the Proposed Project will remove accumulated sediment deposits within the reservoir. This will result in percolation rates from the reservoir, once refilled, either staying the same or increasing. The plan area of the reservoir will not change, and thus the total areal extent of percolation will not change. The larger reservoir capacity will increase detention time in the reservoir, increasing the amount of percolation to groundwater from the reservoir. Finally, by installing the low-level outlet works to allow sediment to drain from the reservoir, reduced sediment accumulation in the future is expected. By reducing future sediment deposits, the Proposed Project will reduce the potential for accumulated sediments to impact the percolation rate. Effects on local groundwater supplies would be **less than significant**.

c) *The Proposed Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site through implementation of mitigation.*

The addition of a low-level outlet drain from the reservoir is the only change to an existing drainage pattern that would occur with the Proposed Project. As described under a), Mitigation Measure HYD-6 requires that the outlet be designed to include features to reduce the potential for release of sediment

or bank erosion in Orr Creek at the outlet. Thus, this impact is expected to be **less than significant with mitigation incorporated.**

d) *The Proposed Project would not 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 through implementation of mitigation.*

The topography surrounding the site and the overall existing drainage patterns of the site will not be changed by the Project. The Project will result in a small positive impact to drainage patterns with regard to flooding by increasing the available flood control storage in the reservoir. There would be **no impact.**

e) *The Proposed Project would not 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.*

Any draining or runoff during proposed activities would occur within the reservoirs confines and be well within the capacity of the reservoir. There would be **no impact.**

f) *The Proposed Project would not otherwise substantially degrade water quality through implementation of mitigation.*

Please see impact assessment a) above.

g) *The Proposed Project would not 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.*

The Proposed Project would not involve the construction of housing. The Project area is not located within a 100-year flood hazard area. Therefore, no impact would result from development of the Project. There would be **no impact.**

h) *The Proposed Project would not place structures within a 100-year flood hazard area that would impede or redirect flood flows.*

The Project area is not located within a 100-year flood hazard area and therefore, Project development would not result in the placement of structures that would impede or redirect flood flows. Therefore, no impact would result from development of the Project. There would be **no impact.**

i) *The Proposed Project would not 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.*

The Project does not propose new housing or structures that could expose people to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam (or the reservoir). There would be **no impact.**

j) *The Proposed Project would not result in inundation by seiche or tsunami. The Proposed Project would not result in inundation by mudflow.*

The Project area is not located in an area subject to seiche, tsunami or mudflow. Therefore, no impact would result from development of the Proposed Project. There would be **no impact.**

3.9.4 Mitigation Measures

HYD-1. Water Quality Best Management Practices.

Prior to commencement of ground disturbing activities, the District will identify site-specific BMPs to effectively control erosion and sediment loss and to protect water quality. During the project, these BMPs for erosion and sediment control shall be implemented by the project contractor. These BMPs will include, but are not limited to:

- Excavated sediments that have been stockpiled for drying will be secured using silt fences, straw wattles, geotextiles and mats, straw bales, or other similar methods. If straw wattles or straw bales are used, all straw will be certified weed-free.
- Erosion control structures (e.g., coir rolls, plastic sheeting, rubber mats) will be placed in areas where high surface runoff is expected; along truck routes between the reservoir and sediment laydown areas; around spoil piles; and at channel entrances or adjacent to drainage channels.
- To the degree possible, the stationary hydraulic suction dredger, if used, will be located at least 50 feet from flagged wetland and riparian areas. If practicable, the dredger would be placed on mats to protect the banks of the reservoir. Spill containment devices will be placed under and/or around the dredger.
- Prior to the initiation of Project activities, the District's contractor will prepare an SPCP that will be implemented during Project activities.
- To reduce potential contamination by spills, all refueling, storage, servicing, and maintenance of equipment will be performed at designated sites and not within 50 feet of wetted areas or other sensitive environmental resources. Absorbent material or drip pans will be used during refueling or servicing of trucks or other equipment. Any fluids drained from the machinery during servicing will be collected in leak-proof containers and taken to an appropriate disposal or recycling facility. If such activities result in spills or accumulation of a product on the soil, the contaminated soil will be disposed of properly.
- All maintenance materials (i.e., oils, grease, lubricants, antifreeze) will be stored at staging areas in appropriate storage containers. If these materials are required during Project implementation, they will be placed in a designated area away from site activities and sensitive resources.

HYD-2. Diversion and Dewatering Plan.

The District will implement the following measures to protect water quality and aquatic habitats during dewatering of Orr Creek Reservoir:

- District will develop a plan that describes methods (e.g., temporary coffer dams and diversion piping) for diverting flows and dewatering the reservoir. These methods will isolate work areas from the affected water body and minimize the potential for turbidity-related impacts.
- Flows to Orr Creek and to the Gold Hill I Canal downstream of the dam will be maintained throughout Project implementation
- District will place rip-rap at the outlet of the diversion pipe downstream of the dam to ensure that the temporarily diverted water does not cause scour of the channel of Orr Creek.

- All dewatering devices and rip-rap will be removed upon completion of construction and original contours and water flow will be restored.
- The Diversion and Dewatering Plan will be submitted for agency approval with relevant permit applications (see Mitigation Measure BIO-4), and will be implemented as part of the Project.

HYD-3. Water Quality Monitoring Plan.

The District will prepare a WQMP for the Project. This WQMP will describe the approach for monitoring water quality (baseline and Project conditions) during dewatering and sediment removal activities. The Plan will include:

- Compliance thresholds and adaptive management to address potential water quality issues should any arise.
- Water quality monitoring for the following constituents water temperature, dissolved oxygen (DO), turbidity, total dissolved solids (TDS) and total suspended solids (TSS).
- Monitoring reports will be developed and provided to agencies during Project implementation.
- Sediment removal will be suspended and agencies will be notified within 24 hours if any constituents exceed thresholds developed through agency consultation with consideration of pre-project background levels.
- The WQMP will be submitted for agency approval with relevant permit applications (see Mitigation Measure BIO-4), and will be implemented as part of the Project.

HYD-4 Hydraulic Suction Dredging.

District will implement the following during implementation of hydraulic suction dredging:

- The rate and method of cutter head rotation speed and swing speed will be reduced, as necessary, to maintain compliance with water quality thresholds as defined in the WQMP (refer to HYD-2).
- No undercutting of the banks of Orr Creek Reservoiris permitted.
- Silt curtains will be used to minimize transport of resuspended sediment downstream.
- If mechanical drying equipment is not used, slurry suctioned from the reservoir will be discharged first to temporary storage tanks, and the sediment would be allowed to settle, prior to returning clarified water to the reservoir.

HYD-5 Disposal of Sediments.

District will implement the following to ensure appropriate disposal of excavated or dredged sediments:

- In order to determine acceptable reuse and/or disposal procedures, sediment shall be sampled and analyzed to assess sediment quality and identify any potential hazards to the public or environment during excavation, transportation, and reuse and/or disposal of the sediment.
    - Based on the known historical environmental impacts of mining in the watershed, characterization of the sediment shall be limited to metals as the primary constituents of concern.

- Approximately one sample will be taken per 2,000 cubic yards of sediment removed.
- Results of the sediment sampling will be compared to applicable health screening levels issued by State and federal agencies that include:
  - Hazardous Waste Thresholds (Title 22 Chapter 11 of California Code of Regulations),
  - California Office of Environmental Health Hazard Assessment Human Health Screening Levels, and
  - Federal EPA Regional Screening Levels.

- Disposal/reuse of dredged sediment may be subject to waste discharge requirements (WDR), and/or a waiver of WDRs for disposal of dredge material to land.
- If sediment is to be disposed of in a landfill, no further restrictions on disposal are required, since landfills operate under their own WDR and/or NPDES permits that are designed to protect water quality.
- If sediment is to be reused:
  - If concentrations exceed Hazardous Waste Thresholds, the sediment will be disposed of in accordance with relevant hazardous waste regulations.
  - If concentrations of all metals are below Hazardous Waste Thresholds, no restrictions on reuse will be implemented.
  - If concentrations of individual metals exceed Human Health Screening Levels or Regional Screening Levels, but not Hazardous Waste Thresholds, the sediment will only be reused on a site where the native soil contains equivalent or higher concentrations of these metals. That is, soil will be sampled and tested for metals for which the sediment exceeds the above thresholds at the proposed disposal/reuse site and compared to the concentrations in the sediment. If the native soil metals concentrations are higher than the sediment concentrations, the sediment can be reused/disposed of without further characterization.

HYD-6. Low-Level Outlet Design.

To prevent potential impacts to water quality from long-term operation of the low-level outlet, the District will implement the following:

- Install a water dissipation device on the low-level outlet on the dam so that it will not cause increased erosion and sedimentation downstream in Orr Creek.
- Operate/open the low-level outlet only when required for periodic reservoir maintenance or when there is water spilling over the existing spillway to ensure that there are sufficient flows present to flush sediments and prevent turbidity in Orr Creek downstream of the reservoir.

Refer also to Mitigation Measure BIO-4 in Section 3.4, Biological Resources.

3.10 Land Use and Planning

Would the Project…		Potentially Significant Impact	Less than Significant with Mitigation	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?	☐	☐	☐	☑

3.10.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to land use and planning if the Project would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

3.10.2 Setting

The Proposed Project is located in an unincorporated area of Placer County approximately 2 miles north of the City of Auburn. This area is governed by the Placer County General Plan, adopted in 1994 and updated in 2013 (Placer County 2013), and the Auburn/Bowman Community Plan, approved in 1994 and updated in 1999 (Placer County 1999). The Auburn/Bowman Community Plan is a component of the Placer County General Plan and serves as the official land use policy document within the unincorporated area of approximately 40 square miles just north of the City of Auburn and bordering Nevada County. The Placer County Community Development Resource Agency (CDRA) regulates land use and development in the unincorporated areas of Placer County. The Planning Services Division of the CDRA provides information on land development and zoning, reviews and makes recommendation on land development applications, assists the Placer County Board of Supervisors and Planning Commission in planning for growth, and enforces the Placer County Zoning Ordinance (Placer County 2017e).

Land uses for the area are defined in the Auburn/Bowman Community Plan, while zoning designations are defined in the Placer County General Plan. The designated land use at Orr Creek Reservoir is Riparian Drainage and it is zoned as Greenbelt/Open Space (Placer County 1999 and 2017a). The Land Use Designations for the parcels surrounding the Reservoir are Agricultural and Rural Estate (Placer County 1999). Zoning Designations for the surrounding parcels are Agriculture and Rural Residential (Placer County 2017a).

The Greenbelt/Open Space designation is intended to identify and protect important open space lands within Placer County, including sites or portions of sites with natural features such as unique topography,

vegetation, habitat, or stream courses. Typical land uses allowed within Greenbelt and Open Space areas are limited to low-intensity agricultural and public recreational uses, with structural development being restricted to accessory structures necessary to support the primary allowed uses, and necessary public utility and safety facilities (Placer County 2013). The Riparian/Drainage land use designation identifies areas along streams, creeks, and riparian corridors and reflects the 100-year flood plain of the streams and/or areas previously designated with special setbacks from a stream. Areas with this land use designation are also secondarily zoned as Flood-Hazard zones. This designation is added to the principal underlying zone designation on properties adjoining riparian/drainage areas, which in turn references the County's Flood Damage Prevention Ordinance (Placer County 1999).

The Agricultural land-use and zoning designations allow uses associated with farming and ranching, including crop production, orchards and vineyards, grazing, pasture and rangeland, Christmas tree farms, horse ranches, hobby farms, as well as facilities that directly support agricultural operations, such as agricultural products processing (Placer County 1999 and 2013). Rural Estate land use and Rural Residential zoning is applied to areas generally located away from cities and unincorporated community centers, in hilly, mountainous, and/or forested terrain and as a buffer zone where dispersed residential development on larger parcels would be appropriate, and is compatible with smaller-scale farming and ranching operations (Placer County 2013).

3.10.3 Discussion

a) *The Proposed Project would not physically divide an established community*.

The Project would not include any activities that would contribute to the physical division of an established community. Therefore, there would be **no impact.**

b) *The Proposed Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect.*

Pursuant to California Government Code Section 53091(d), a Project is exempt from conforming to County building and zoning regulations when the Project facility is for the production, generation, storage, or transmission of water. In-reservoir activities associated with the Project will occur within WOUS, under the jurisdiction of USACE, and WOS, which are regulated by the RWQCBs and CDFW. As described in Mitigation Measure BIO-4, the District will obtain all appropriate permits for work within jurisdictional waters, and will implement all conditions contained in the permits. Therefore, this impact would be **less than significant with mitigation incorporated.**

c) *The Proposed Project would not conflict with any applicable habitat conservation plan or natural community conservation plan.*

The Project Area also falls within the geographic jurisdiction of the draft Placer County Conservation Plan (PCCP), a County-proposed solution to provide an effective framework to protect, enhance, and restore the natural resources in specific areas of western Placer County, while streamlining the permitting of covered activities (Placer County 2011). The draft PCCP includes two integrated programs:

- A combined Natural Community Conservation Plan (NCCP) and Habitat Conservation Plan (HCP) that will protect fish and wildlife and their habitats and fulfill the requirements of the ESA,

California Endangered Species Act (CESA), and the Natural Community and Conservation Plan Act (NCCP Act); and

- A County Aquatic Resources Program (CARP) that will protect streams, wetlands, and other water resources and fulfill the requirements of the federal CWA and analogous state laws and regulations.

An administrative draft of the PCCP was provided to the Placer County Board of Supervisors in 2011. Preparation of the final PCCP, as well as coordination with wildlife agencies, is currently ongoing, as of 2017.

The Project area falls within the geographic jurisdiction of the draft PCCP. While the District is not a pre-approved permittee under the draft PCCP, they are considered a Participating Special Entity as specific in Section 8.5 of the draft PCCP, which means that when implementation of the final PCCP has begun, the District can request coverage under the final PCCP for take authorization for eligible Projects and activities. According to Section 2.3.3 of the draft PCCP, the Proposed Project would be considered eligible for coverage, as it falls within the category of "In-Stream Projects" (Placer County 2011). If the PCCP becomes effective prior to the implementation of the Proposed Project, participation in the PCCP by the District would be optional. The District can work directly with resource agencies to obtain all applicable authorizations and permits. Because the draft PCCP is not yet finalized, approved, and in effect, and any future participation by the District would be optional, the Proposed Project would not conflict with any applicable habitat conservation plan or natural community conservation plan.

Additionally, in 2000 Placer County adopted a voluntary, non-regulatory program called Placer Legacy which protects and conserves open space and agricultural lands in the county through mechanisms including fee-title and development rights acquisition, agricultural and conservation easements, and public outreach (Placer County 2017c). Because this program is voluntary and the District is not currently seeking to sell or develop a conservation easement for the Orr Creek Reservoir parcel, the Proposed Project would not conflict with the Placer Legacy program.

Therefore, there is **no impact** related to conflicts with any applicable habitat conservation plan or natural community conservation plan.

3.10.4 Mitigation Measures

Refer to Mitigation Measure BIO-4 in Section 3.4, Biological Resources.

3.11 Mineral Resources

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	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?	☐	☐	☐	☑

3.11.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to land use and planning if the Project would:

- 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; or
- 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.

3.11.2 Setting

Precious metals and commercially valuable rock and minerals have played an important role in the history of Placer County. Placer County General Plan policies serve to balance compatible mineral resources development and other land uses. General Plan policies are implemented by the County, in consultation with the California Division of Mines and Geology, through the evaluation of the relative value of identified potentially-significant mineral deposits and the designation of these significant areas with a mineral reserve (MR) combining district (Placer County 2013 and 2017e). There are no areas with the MR designation in the vicinity of the Project area and no known mineral resource extraction activities occurring within the Project area (Placer County 2017a).

The State of California conducted a mineral land classification of the northern end of Placer County and categorized land into Mineral Resource Zones (MRZ) (Kohler 1984). According to the study, Orr Creek Reservoir is situated within an area designated as MRZ-3a for copper, zinc and gold. This designation indicated that it is not known whether significant mineral resources exist based on available data.

3.11.3 Discussion

a) *The Proposed Project would not 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.*

The zoning designations in the Project area and vicinity allow for mining following the acquisition of a Conditional Use Permit from the county (Placer County 2017e). However, these areas do not have a MR combining district and are not located within an area of known important mineral resources. Therefore, the Proposed Project would not change the availability of a known mineral resource. There is **no impact**.

b) *The Proposed Project would not 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.*

There are no locally important mineral resource recovery sites delineated on a local general plan, specific plan or other land use plan located in the Project vicinity (Placer County 2017b). There is **no impact.**

3.11.4 Mitigation Measures

No significant impacts related to mineral resources would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.12 Noise

Would the Project result in:		Potentially Significant Impact	Less than Significant with Mitigation	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?	☐	☐	☐	☑

3.12.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to noise if the Project would result in:

- 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;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project;
- 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, expose people residing or working in the Project area to excessive noise levels; or
- For a Project within the vicinity of a private airstrip, expose people residing or working in the Project area to excessive noise levels.

3.12.2 Setting

Sound is mechanical energy transmitted through a medium (air) in the form of a wave from a disturbance or vibration. Noise, however, is generally defined as sound that is loud, unpleasant, unexpected, or

disagreeable. Placer County has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise-sensitive land uses. The County Noise Ordinance is the primary enforcement tool for operation of locally regulated noise sources such as mechanical equipment and construction activity. The County Noise Ordinance is set forth in Article 9.36 of the County Code. Noise associated with construction activities occurring between 6:00 a.m. and 8:00 p.m. Monday through Friday, and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday is exempted from the provisions of the County Noise Ordinance, provided that all construction equipment is fitted with factory-installed muffling devices and is maintained in good working order. The Noise Ordinance does not define quantifiable noise levels for construction-related activities within the above-listed allowable time periods.

3.12.3 Discussion

a) *The Proposed Project would not result in the 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 through implementation of mitigation.*

Noise-generating activities associated with the Proposed Project include use of vehicles and equipment described in the Project Description. Project activities would be restricted to the hours between 7:00 a.m. and 7:00 p.m. on weekdays. Work on weekends would be avoided, but if required would be conducted between 8:00 a.m. and 7:00 p.m. As described above, noise from construction activities occurring during these hours is exempted from the County Noise Ordinance, provided that construction equipment is fitted with factory-installed muffling devices and is maintained in good working order. To ensure that construction activities are implemented consistent with the County Noise Ordinance, the District will implement Mitigation Measure NZ-1 which limits the hours of construction activities, requires muffling devices on equipment, and includes other noise-reduction measures. This impact would be **less than significant with mitigation incorporated.**

b) *The Proposed Project would not result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.*

There are no federal, state, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, Caltrans has developed vibration criteria based on human perception and structural damage risks. Based on this analysis, vibrations of a peak particle velocity (ppv) of greater than 0.1 inch per second (in/sec) are the minimum level perceptible level for ground vibration; short periods of ground vibration in excess of 0.2 in/sec can be expected to result in increased levels of annoyance to people within buildings; and ppv levels greater than 0.4 in/sec may potentially cause structural damage (Caltrans 2002).

The Proposed Project would not involve the long-term use of any equipment or processes that would result in potentially significant levels of ground vibration. Construction activities associated with the Proposed Project would require the use of various types of equipment that might result in intermittent increases in ground vibration. Ground vibration generated by construction equipment spreads through the ground and diminishes in strength with distance. However, predicted ground vibration levels at nearby structures would not be anticipated to exceed the minimum perceptible threshold of 0.1 in/sec ppv for human annoyance, nor would ground vibration levels be anticipated to exceed the minimum threshold of 0.4 in/sec ppv for structural damage. Therefore, this impact would be **less than significant.**

c) *The Proposed Project would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.*

The Proposed Project is short-term and is anticipated to be completed in three working seasons over three or more years. Operation and maintenance of the reservoir following completion of the Proposed Project would be consistent with current conditions, and would not result in any permanent increases in ambient noise levels in the Project vicinity. Therefore, there would be **no impact.**

d) *The Proposed Project would not result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.*

As described above, equipment and vehicle use could result in temporary increases in noise levels in the Project vicinity. However, implementation of Mitigation Measure NZ-1 would reduce this potential impact to a less than significant level. Therefore, this impact would be **less than significant with mitigation incorporated.**

e) *The Proposed Project would not be located within an airport land use plan or within two miles of a public airport or public use airport and would not expose people residing or working in the Project area to excessive noise levels.*

The Project area is not located within an airport land use plan or within two miles of a public airport. Therefore, there would be **no impact.**

f) *The Proposed Project is not located within the vicinity of a private airstrip and would not expose people residing or working in the Project area to excessive l noise levels*.

The Proposed Project is not located in the vicinity of a private airstrip and would not expose people residing or working in the Project area to excessive noise levels. Therefore, there would be **no impact**.

3.12.4 Mitigation Measures

NZ-1. Noise Best Management Practices.

To reduce noise-related impacts to occupants of nearby residential land uses, the following BMPs will be incorporated into the Proposed Project:

- Construction activities, including activities within equipment staging areas, will be limited to the hours between sunrise (but no earlier than 7:00 a.m.) and sunset (but no later than 7:00 p.m.) on weekdays. Construction work on weekends and District-recognized holidays will be avoided when practical. If required, work on weekends and District-recognized holidays will be limited to the hours between 8:00 a.m. and 7:00 p.m.
- All construction equipment must have sound-control devices. No equipment will have an unmuffled exhaust system.
- Additional noise-reduction measures will be implemented as appropriate and practical, including but not limited to:
    - Changing the location of stationary construction equipment when practical to an area with less sensitive receptors; and
    - Limiting equipment (i.e., construction equipment and trucks) to five (5) or fewer minutes of idling time as well as rescheduling construction activity.
    - Stockpiles shall be located to minimize the need for haul trucks to back up for loading and exiting.

3.13 Population and Housing

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	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?	☐	☐	☐	☑

3.13.1 Thresholds of Significance

Appendix G of the State CEQA Guidelines states that a Project could have a significant impact related to population and housing if the Project would:

- Induce substantial population growth in an area, either directly or indirectly;
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

3.13.2 Setting

The Proposed Project is located in an unincorporated area of Placer County approximately 2 miles north of the City of Auburn near the border of Nevada County. The area is populated by rural residential dwellings. The United States Census Bureau's 2016 population estimate for Placer County was 380,531 (U.S. Census Bureau 2016). The 2016 population estimate for Auburn was 13,963 (U.S. Census Bureau 2016). There are approximately 22 residences in the Project vicinity (e.g., the area shown in Figure 2, generally bounded by Edwards Lane, Meadow View Lane, and Cramer Road).

3.13.3 Discussion

a) *The Proposed Project would not directly or indirectly induce substantial population growth in the area.*

The District proposes to restore the storage capacity of Orr Creek Reservoir, which would contribute to the long-term viability and operational flexibility of the Bear Creek Water System. The Project, however, would not result in an increase in water deliveries or result in indirect inducement of growth beyond that allowed in the Placer County General Plan. Therefore, this impact would be **less than significant**.

b) *The Proposed Project would not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.*

The Proposed Project would occur on District-owned property and would not result in the displacement of any existing housing. Therefore, there would be **no impact.**

c) *The Proposed Project would not result in displacement of people thereby necessitating the construction of replacement housing elsewhere.*

The Proposed Project would not result in removal of existing housing stock or related displacement of people residing in the Project area. Therefore, there would be **no impact.**

3.13.4 Mitigation Measures

No significant impacts related to population and housing would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.14 Public Services

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

3.14.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to public services if the Project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
- (i) fire protection,
- (ii) police protection,
- (iii) schools,
- (iv) parks, or
- (v) other public facilities.

3.14.2 Setting

Fire Protection

In Placer County, fire protection is provided by 25 fire districts, CAL FIRE, and the Tahoe and Eldorado National Forests (USDA Forest Service) (Placer County 2017a). The Project area is located in the jurisdiction of the Placer County Fire Protection District (CSA 28 Zone 193) (Placer County 2017a). The additional 24 fire districts are: Alpine Springs County Water District, Alta Fire Protection District (FPD), Auburn City Fire Department, Colfax City Fire Department, Dry Creek FPD, Dutch Flat FPD, Foresthill FPD, Lincoln City FPD, Loomis FPD, Newcastle FPD, North Tahoe FPD, Northstar Community Services District (CSD), Penryn FPD, Placer Hill FPD, Rocklin City Fire Department, Rocklin FPD, Roseville City

Fire Department, Sacramento Metropolitan Fire District, Sheridan FPD, South Placer FPD, Squaw Valley Public Services District (PSD) Suburban Pines CSD, Truckee FPD, and Western Placer FPD (Placer County 2017a).

Police Protection

Law enforcement services to the Project area are provided by the Placer County Sheriff's Department. The closest office is the Auburn Justice Center, located at 2929 Richardson Drive, Auburn (Placer County 2014d). This facility provides jail services, coroner's services, court security, and marshal duties to the entire county (Placer County 2017d).

Schools

There are 17 elementary school districts, eight high school districts, and one college district in Placer County (Placer County 2017a). The Project area is located in the Auburn Union Elementary School District, the Placer Union High School District, and the Sierra College District. The nearest school to the Project Area is Chana High, located south of the Project in the City of Auburn. Other Placer County elementary school districts include Ackerman Elementary, Alta Dutch Flat Elementary, Center Joint Unified, Colfax Elementary, Dry Creek Joint Elementary, Elverta Joint Elementary, Eureka Union, Foresthill Union, Loomis Union, Newcastle Elementary, Placer Hills Union, Pleasant Grove Joint Union, Rocklin Unified, Roseville Elementary, Tahoe Truckee Unified, and Western Placer Unified School Districts. High School Districts include Center Joint Unified, East Nicolaus Joint Union, Rocklin Unified, Roseville Joint, Tahoe Truckee Unified, Twin Rivers Unified, and Western Placer Unified School Districts.

Parks

Placer County has two park districts: Auburn Area Recreation and Park District and Truckee Donner Park and Recreation District. The Project area is located in the Auburn Area Recreation and Park District (Placer County 2017a). No public parks are located adjacent to the Project area (Placer County 2017a). The closest public parks are the Auburn District Regional Park, located in the City of Auburn approximately 2 miles south of the Project area, and the Hidden Falls Regional Park, located approximately 2.5 miles southwest of the Project area.

3.14.3 Discussion

a) *The Proposed Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services.*

   i) *The Proposed Project would not result in substantial adverse impacts related to the provision of fire protection services.*

   The Proposed Project would not significantly affect the response times of fire protection or other public services or increase demand for such services for the following reasons. The District will implement Mitigation Measure TRA-1 to allow for passage of vehicles, including emergency service vehicles, during travel to and from the site, including trips for the transportation of equipment and sediment. Mitigation Measure HAZ-1 would reduce the likelihood for construction-related fires by requiring implementation of standard fire prevention measures including, but not

limited to, equipping construction crews with fire-fighting equipment and prohibiting smoking in the work area. The Proposed Project would not result in an increased demand for police protection or other security services, nor would it significantly affect police response times. This impact would be **less than significant with mitigation incorporated.**

ii) *The Proposed Project would not result in substantial adverse impacts related to the provision of police protection services.*

The Proposed Project would not result in an increased demand for police protection or other security services, nor would it significantly affect police response times. As described previously, the District will implement Mitigation Measure TRA-1 to ensure that Project-related traffic doesn't affect access for emergency vehicles during construction. This impact would be **less than significant with mitigation incorporated.**

iii) *The Proposed Project would not result in substantial adverse impacts related to the provision of school services.*

iv) *The Proposed Project would not result in substantial adverse impacts related to the provision of park services.*

v) *The Proposed Project would not result in substantial adverse impacts related to the provision of other public facility services.*

There would not be any impacts related to the provision of school services, park services or other public facility services as the Proposed Project would not result in significant increase in demand for these services, relative to existing conditions. There are no schools or parks within or adjacent to the reservoir that would be affected by construction or operation activities.

The Proposed Project would not cause physical impacts that would adversely affect existing or future anticipated governmental or other public facility services nor would it require the construction of new facilities in order to maintain acceptable services for fire protection, police protection, parks, schools, or other public facilities/services. Therefore, there would be **no impact.**

3.14.4 Mitigation Measures

Refer to Mitigation Measure HAZ-1 in Section 3.8, Hazards and Hazardous Materials and to TRA-1 in Section 3.16, Transportation and Traffic.

3.15 Recreation

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) 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?	☐	☐	☐	☑

3.15.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to recreation if the Project would:

- 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, or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment.

3.15.2 Setting

The Project area is located in the Auburn Area Recreation and Park District (Placer County 2017a). Recreation activities offered by the Auburn Area Recreation and Park District include festivals; gymnasium use; dog park use; adult dance and fitness classes; children's sports, fitness, dance, and gymnastics classes and leagues; swimming pools and lessons; tennis courts; and disc golf. Additionally, the Auburn Area Recreation and Park District offers equestrian courses, which are held at "C" Horse Ranch, located on Lorenson Road approximately 0.25 mile from the Project area and along the main access route to the Project area (City of Auburn 2017). The Auburn Trap Shooting Club, a private shooting range, is also located in the Project vicinity, off Lorenson Road approximately 0.5 mile from the Project area, along the main access route to the Project area. The Auburn Valley Country Club, which has a public golf course, is located approximately 1.75 miles northwest of the Project area.

3.15.3 Discussion

a) *The Proposed Project would not 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.*

The Proposed Project would not induce growth beyond that included in the Placer County General Plan and would not result in new development in the area that would increase the use or demand for neighborhood, regional parks, or other recreational facilities. Therefore, there would be **no impact.**

b) *The Proposed Project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse effect on the environment.*

The Proposed Project would not result in development of any new recreational facilities. Therefore, there would be **no impact.**

3.15.4 Mitigation Measures

No significant impacts related to recreation would result from implementation of the Proposed Project. Therefore, no mitigation is required.

3.16 Transportation/Traffic

Would the Project…	Potentially Significant Impact	Less than Significant with Mitigation	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 freeway, 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 applicable adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑

3.16.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to transportation or traffic if the Project would:

- Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- 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;
- 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;
- Substantially increase hazards due to a design feature or incompatible uses;
- Result in inadequate emergency access; or
- Conflict with applicable adopted policies, plans, or programs supporting alternative transportation.

3.16.2 Setting

The Placer County General Plan classifies roads in the county in one of the following categories:

- Local streets provide direct access to abutting land, and access to the collector street system. The public uses these streets for local circulation. They carry little, if any, through traffic, and generally carry very low traffic volumes.
- Collector roadways are intended to "collect" traffic from local streets and carry it to roadways higher in the street classification hierarchy (e.g., arterials). The public uses these roadways as secondary circulation routes, and they generally carry light to moderate traffic volumes. Access to abutting land is normally permitted, but may be restricted to certain uses dependent upon future traffic volumes. In urban/suburban areas, major collector roadways will generally carry higher traffic volumes than minor collectors and thus require more right-of-way and have more access restrictions.
- Arterial roadways are fed by local and collector roadways and provide linkages to the State highway system as well as linkages to and between communities and major activity centers. The public uses these roadways as primary circulation routes for through traffic, and they carry higher volumes of traffic than local streets and collector roadways. In urban/suburban areas, major arterials will generally carry higher traffic volumes than minor arterials and thus require more right-of-way and have more access restrictions. Rural arterial roadways may or may not carry high traffic volumes, but do provide primary access routes for through travel in rural areas of the county.
- Thoroughfares are special arterial roadways with greater access control designed to carry high volumes of traffic with limited travel delay. Such roadways are used as primary circulation routes to carry longer distance.
- Expressways are high-speed, high-capacity roadways with very limited access control whose main purpose is to serve through traffic over long distances.

The General Plan also identifies minimum levels of service (LOS) for its roadway system, using a scale that measures the amount of traffic that can be accommodated on a roadway segment or at an intersection. Traffic levels of service range from A to F, with A representing the highest level of service (Placer County 2013).

The Placer County Transportation Planning Agency (PCTPA) is the forum for making decisions about the regional transportation in Placer County and is the county's Congestion Management Agency (CMA) (PCTPA 2017). The PCTPA also developed the 2036 Regional Transportation Plan (RTP) for Placer County to document the policy direction, actions, and funding recommendations to meet the needs of Placer County's transportation system through 2036 (PCTPA 2016).

Access to the Project area would require the use of State Highway 49, as well as Lorenson Road, and Edwards Lane, which are classified as "local streets" (Placer County 2013). At its intersection with Lorenson Road, State Highway 49 has four lanes, plus a turn-lane.

The Proposed Project would involve the removal of accumulated sediment from the Orr Creek Reservoir. Implementation of Project activities would require transportation of equipment and supplies, as well as

daily worker trips to and from the Project area and transportation of sediment offsite after it has been drained/dried on District property adjacent to the reservoir.

Besides road use, there will be no Project activities within County roadways or right-of-ways. Therefore a Placer County Encroachment Permit will not be required for the Proposed Project.

3.16.3 Discussion

a) *The Proposed Project would not exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.*

Local streets, including Lorenson Road and Edwards Lane, carry very little, if any, through traffic; therefore they are not evaluated in the County's Circulation Plan and are not analyzed for right-of-way, access control, planned travel lanes, and future traffic volumes

Implementation of the Proposed Project is expected to require three, 120-day work seasons over 3 years. Additional work seasons may be required to remove remaining sediment if there are delays due to funding, weather, or other unforeseeable factors. Construction workers would drive to and from the Project area via Lorenson Road and Edwards Lane on weekdays during this period. Lorenson Road would be accessed via State Highway 49, which is four lanes wide and includes a dedicated turn lane on to Lorenson Road. Equipment would be transported to and from the Project area, and sediment would be transported away from the Project area after being removed from the reservoir and drained/dried on adjacent District property. It is estimated that approximately 10,000 cubic yards of sediment would be removed from the reservoir and transported to appropriate disposal site(s) using 10-ton pickups and/or 18-ton trailers. A maximum of 4,000 cubic yards would be removed in a single work season. Assuming the drained sediment will have a maximum weight of 1 ton per cubic yard, and including additional trips for arrival/departure of construction workers and seasonal mobilization/demobilization of equipment, the maximum number of truck trips in a single year is estimated to be up to 600 trips, or approximately ten trips per day for 60 working days. It is estimated that it will take three work seasons to remove 10,000 cubic yards of sediment from the reservoir. The District will implement Mitigation Measure TRA-1 to ensure minimal disturbance to residents in the Project area. These measures include notifying residents prior to construction, implementing any traffic controls consistent with State requirements, fitting barricades with lights at night and restoring roads to pre-project or better condition following completion of the Project. Because of the current small volume of traffic on local access streets, this temporary increase in Project-related traffic, including construction workers, equipment and sediment transport, is not expected to result in significant construction-related delays or traffic congestion relative to the capacity of the street system.

Following completion of the Project, the continued operation of Orr Creek Reservoir would not result in any increase in operations-related traffic beyond existing conditions.

With incorporation of Migitation Measure TRA-1, this impact is **less than significant**.

b) *The Proposed Project would not 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.*

As stated previously, the PCTPA is Placer County's Congestion Management Agency. Lorenson Road and Edwards Lane are not addressed in the PCTPA's 2036 RTP or any other transportation or circulation related programs or documents. The 2036 RTP identifies State Highway 49 as a regionally significant state highway. The Proposed Project does not conflict with any applicable congestion management programs, standards, or measures. Therefore, there is **no impact.**

c) *The Proposed Project would not 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.*

The Proposed Project would not involve the use of any airplanes or flight equipment. There would be no operation-related impacts on air traffic. The Proposed Project would not result in a change in air traffic patterns. Therefore, there would be **no impact.**

d) *The Proposed Project would not substantially increase hazards due to a design feature or incompatible uses.*

The Project would remove accumulated sediment from the Orr Creek Reservoir to restore storage capacity. It would not increase any hazards due to a design feature or incompatible use, and it would not be incompatible with current residential uses in the area. Therefore, there would be **no impact.**

e) *The Proposed Project would not result in inadequate emergency access.*

The Project area is located on private District property located at the end of a private, gated gravel access road. Access points to the Project area and vicinity would not be blocked by Project activities. Emergency access would be maintained during Project implementation. Travel to and from the Project area and transportation of equipment would be minimal, and removal of sediment would be limited to no more than 7 trips per day for a 60-day period within each 120-day work season. Therefore, there would be **no impact.**

f) *The Proposed Project would not conflict with applicable adopted policies, plans, or programs supporting alternative transportation.*

The Proposed Project would not result in any conflicts with adopted policies, plans, or programs supporting alternative transportation methods such as public transit, bicycle, or pedestrian facilities, therefore, there would be **no impact**.

3.16.4 Mitigation Measures

TRA-1. Construction Traffic, Access, and Transportation Controls.

The District will implement measures to minimize impacts on residential traffic within the Project area resulting from construction-related trips to and from the Project area, including:

- Nearby residences will be notified at least two weeks prior to Project implementation regarding anticipated work dates and will be provided the District's contact information.
- The Project schedule will be posted on the District website.
- All traffic control, including devices and personnel requirements, will be consistent with the current State of California Manual of Traffic Controls for Construction and Maintenance Work Zones.

- Any barricades will be fitted with lights or reflectors at night.
- District will ensure that the road conditions in the construction area are restored to pre-Project condition or better following completion of the Proposed Project.

3.17 Utilities and Service Systems

Would the Project…		Potentially Significant Impact	Less than Significant with Mitigation	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 providers 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?	☐	☑	☐	☐

3.17.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, a Project could have a significant impact related to utilities or service systems if the Project would:

- Exceed wastewater treatment requirements of the applicable RWQCB;
- 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;
- 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;
- Have insufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed;
- 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 providers existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs; or
- Fail to comply with federal, state, and local statutes and regulations related to solid waste.

3.17.2 Setting

Residences in the vicinity of the Project area use private onsite wastewater treatment systems (e.g., septic systems) and typically have private onsite wells for household water. No developed stormwater drainage utilities are located in the area; however, drainage ditches, culverts, and/or cross drains are generally located along the roads in the Project area. Public water service of raw irrigation water in the Proposed Project vicinity is provided by the District. Public utilities serving the Project area include electrical power transmission lines owned by Pacific Gas and Electric Company and telephone lines. The closest solid waste disposal site is the Western Placer Waste Management Authority's (WPWMA's) Western Regional Sanitary Landfill, located near Highway 65 between Roseville and Lincoln, which provides disposal services to Western Placer County, including the Project area, and accepts green waste, wood waste, inert materials, and construction and demolition waste (WPWMA 2017).

3.17.3 Discussion

a) *The Proposed Project would not exceed wastewater treatment requirements of the applicable RWQCB.*

The closest wastewater treatment plant is Sewer Maintenance District 1 (SMD1), located off of Joeger Road, approximately 1 mile southeast of the Project area. The SMD1 is operated by Placer County's Facility Services Department and serves the area north of the City of Auburn. The SMD1's service area does not include residences in the Project vicinity, which, as stated previously, typically rely on private, individual septic systems. As of 2014, Placer County purchases raw District water via the Combie Ophir II canal for dilution of effluent from SMD1 that is currently released into Rock Creek, which is a tributary to Dry Creek, which joins Orr Creek downstream of the Orr Creek Reservoir to create Coon Creek. Because this process occurs upstream of Orr Creek's interception with Dry Creek, it will not be affected by any aspect of the Proposed Project, including potential diversion of water around the reservoir during Project implementation. Furthermore, Placer County is in the process of implementing the Midwestern Placer Regional Sewer Project, which will decommission the SMD1, cease discharge of effluent into Rock Creek, and convey sewage from the SMD1 service area to the City of Lincoln wastewater treatment and reclamation facility. Implementation of the Proposed Project would not change processes that relate to the generation of wastewater. The Proposed Project would not directly generate any new source of wastewater or result in the creation of new private septic systems. Therefore, there would be **no impact.**

b) *The Proposed Project would not 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.*

The purpose of the Proposed Project is to restore the raw water storage capacity of the Orr Creek Reservoir. This would not involve the development of land uses that generate wastewater and would not result in any new or expanded water or wastewater treatment facilities. Therefore, there would be **no impact.**

c) The Proposed Project would not 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.

The Proposed Project would not require the construction or expansion of any storm water drainage facilities. Vegetation removal would potentially increase the potential quantities or rates of storm water runoff. However, because removal of vegetation is anticipated to be minimal and in the direct vicinity

of the reservoir, any potential change in stormwater runoff would be minimal, would flow directly into the reservoir, and would not result in the need to construct new stormwater drainage facilities or expansion of existing facilities. Therefore, there would be **no impact.**

d) *The Proposed Project would have sufficient water supplies available to serve the Project from existing entitlements and resources, and no new or expanded entitlements would be needed*.

According to the District's Agricultural Water Management Plan, the District has pre-1914 rights to Orr Creek Water and diversion to the Gold Hill Canal (NID 2015). No new or expanded water entitlements would be needed as a consequence of the Project. Therefore, there would be **no impact.**

e) *The Proposed Project would 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*.

As described above, the parcels in the Project vicinity are outside existing waste water treatment service areas and use existing onsite private septic systems. Implementation of the Proposed Project would not alter the existing private wastewater treatment systems. Therefore, there would be **no impact**.

f,g) *The Proposed Project would not be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs and would comply with federal, state, and local statutes and regulations related to solid waste*.

Implementation of the Proposed Project would result in the removal of approximately 10,000 cubic yards of sediment from the Orr Creek Reservoir over three or more years. After this sediment is dried, it will be tested for metal contaminants and disposed of appropriately as described in Mitigation Measure HYD-5 in compliance with federal, state, or local regulations regarding solid waste. Therefore, this impact would be **less than significant with mitigation incorporated.**

3.17.4 Mitigation Measures

Refer to Mitigation Measure HYD-5 in Section 3.9, Hydrology and Water Quality.

3.18 Mandatory Findings of Significance

Does the Project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) 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) 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) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☑	☐	☐

3.18.1 Discussion

a) *The Proposed Project would not 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 with implementation of mitigation.*

The Proposed Project would have no effect on Mineral Resources (Section 3.11) and Recreation (Section 3.15). The Proposed Project would have less than significant impacts on Aesthetics (Section 3.1), Greenhouse Gases and Climate Change (Section 3.7), and Population and Housing (Section 3.13). The Proposed Project would have potentially significant impacts on Agriculture and Forest Resources (Section 3.2), Air Quality (Section 3.3), Biological Resources (Section 3.4), Cultural Resources (Section 3.5), Geology, Soils, and Seismicity (Section 3.6), Hazards and Hazardous Materials (Section 3.8), Hydrology and Water Quality (Section 3.9), Land Use and Planning (Section 3.10), Noise (Section 3.12), Public Services (Section 3.14), Transportation/Traffic (Section 3.16), and Utilities and Service Systems (Section 3.17). However, the implementation of the specific mitigation measures identified for each of these resource topics (see Table 1, or refer to individual sections), would reduce the potential impacts in the Project area to less than significant for all potential impacts identified in the analyses. Therefore, this impact would be **less than significant with mitigation incorporated.**

b) *The Proposed Project would not have impacts that are individually limited, but cumulatively considerable with implementation of mitigation.*

The purpose of the Proposed Project would be to restore the storage capacity of the Orr Creek Reservoir. The District's surface water supply system relies on nine water storage reservoirs, including Orr Creek Reservoir (NID 2015). Maintenance operations, including removing accumulated sediments to restore baseline depths, are ongoing for all the District storage reservoirs to provide optimum storage capacities.

The potential for Project-specific effects of the Proposed Project (i.e., construction- and operations-and-maintenance-related effects) to contribute considerably to significant cumulative impacts depends on the relative magnitude of the effects on the future cumulative condition. As identified in this IS/MND, the temporary construction activities could cause short-term impacts. However, Project-specific mitigation measures have been identified in this IS/MND to reduce construction-related impacts to less than significant levels (and be consistent with applicable adopted state and regional mitigation planning). This IS/MND also identifies mitigation for potential long-term impacts from operation of the Project following completion of infrastructure changes. The Proposed Project would not contribute considerably to future significant cumulative impacts. Therefore, this impact would be **less than significant with mitigation incorporated.**

c) *The Proposed Project would not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly with implementation of mitigation.*

Mitigation measures for potential impacts from construction-related air quality pollutant emissions (Mitigation Measure AIR-1), construction-related wildfire risks (Mitigation Measure HAZ-1), effects to water quality (Mitigation Measures HYD-1, HYD-2 HYD-3, HYD-5 and HYD-6), operation-related noise effects (Mitigation Measure NZ-1), and construction-related traffic impacts (TRA-1) would reduce these potential impacts to humans to less than significant levels. Therefore, this impact would be **less than significant with mitigation incorporated.**

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4 LIST OF PREPARERS

Janelle Nolan and Associates Environmental Consulting, Inc.

Janelle Nolan ..... Project Director
Sara Reece ..... Senior Analyst/Biologist
Sarah Foster ..... Wildlife Biologist
Jeff Alvarez ..... Senior Biologist
Tera Stoddard ..... Senior Biologist

Cardno, Inc.

Julie Smith ..... Senior Consultant
Eric Lee ..... GIS Specialist

Robertson-Bryan, Inc.

Keith Whitener ..... Senior Fisheries Biologist
David Thomas ..... Senior Fisheries Biologist
Ben Giudice ..... Senior Engineer/Water Quality Specialist

Ric Windmiller Associates (Cultural Resources)

Ric Windmiller ..... Registered Professional Archaeologist

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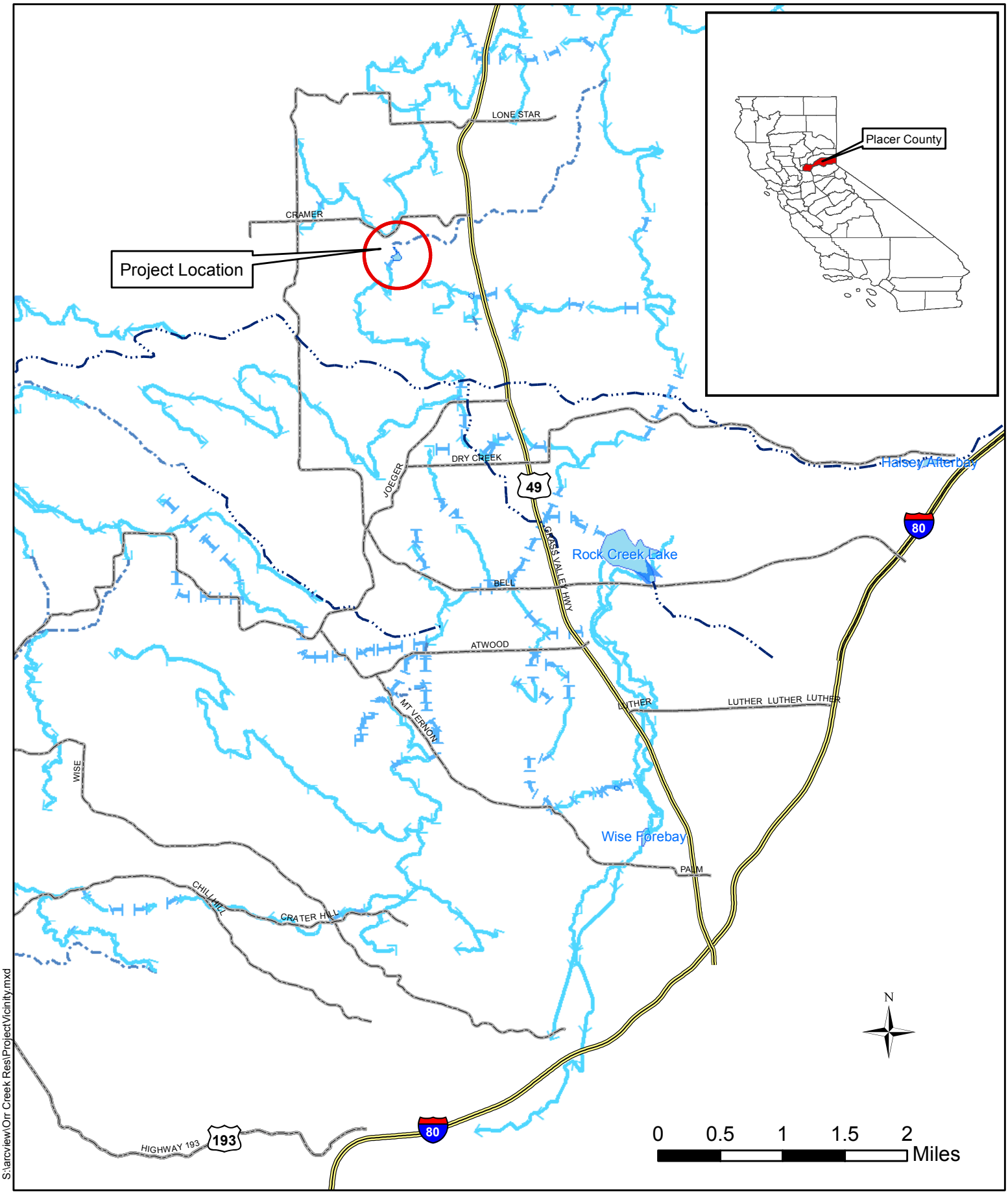
Figures



ORR CREEK RESERVOIR CLEANING AND INFRASTRUCTURE IMPROVEMENT PROJECT

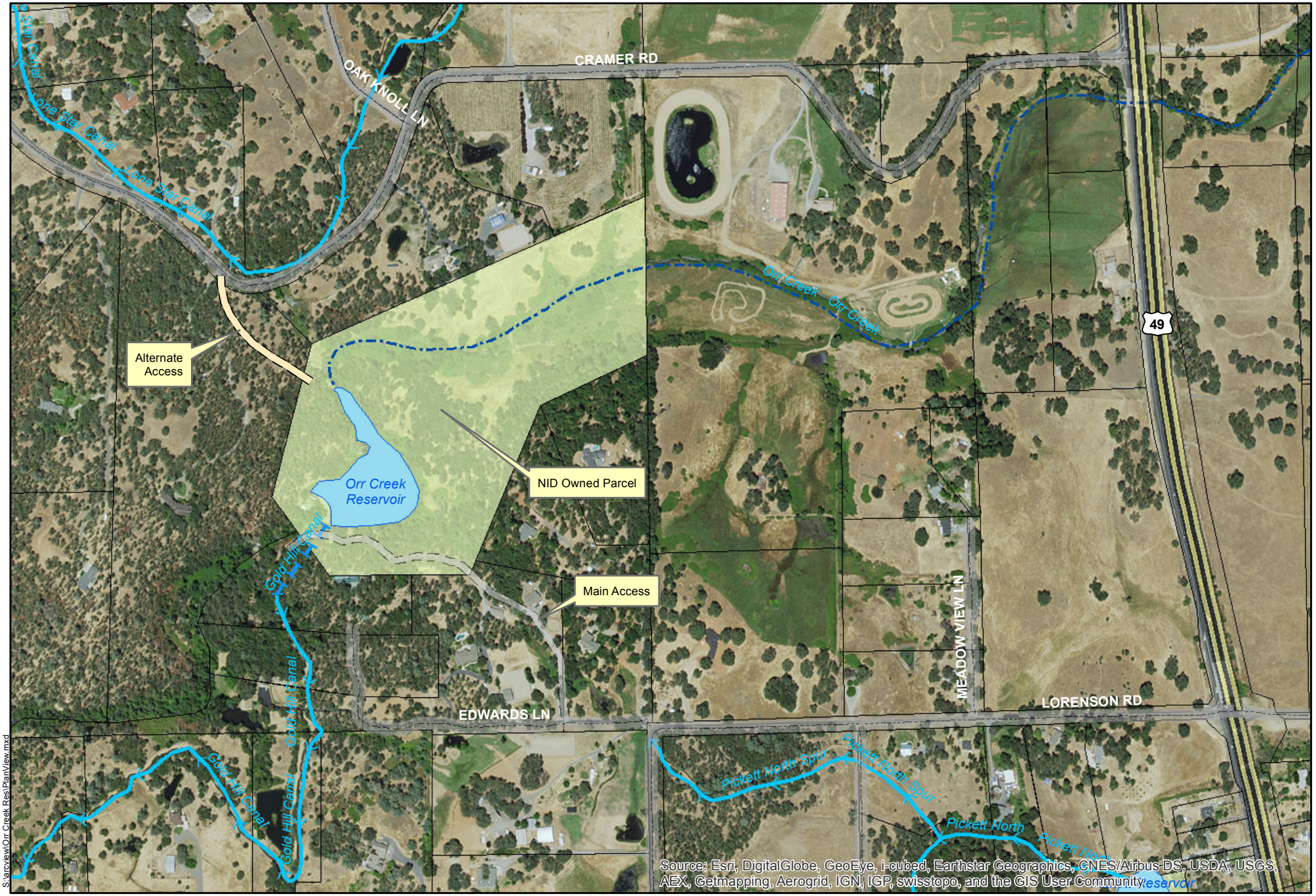
PROJECT VICINITY

Date: 9/21/2015

Drawn By: D. HUNT

NEVADA IRRIGATION DISTRICT
NEVADA COUNTY -- PLACER COUNTY
GRASS VALLEY, CALIFORNIA

FIGURE 1



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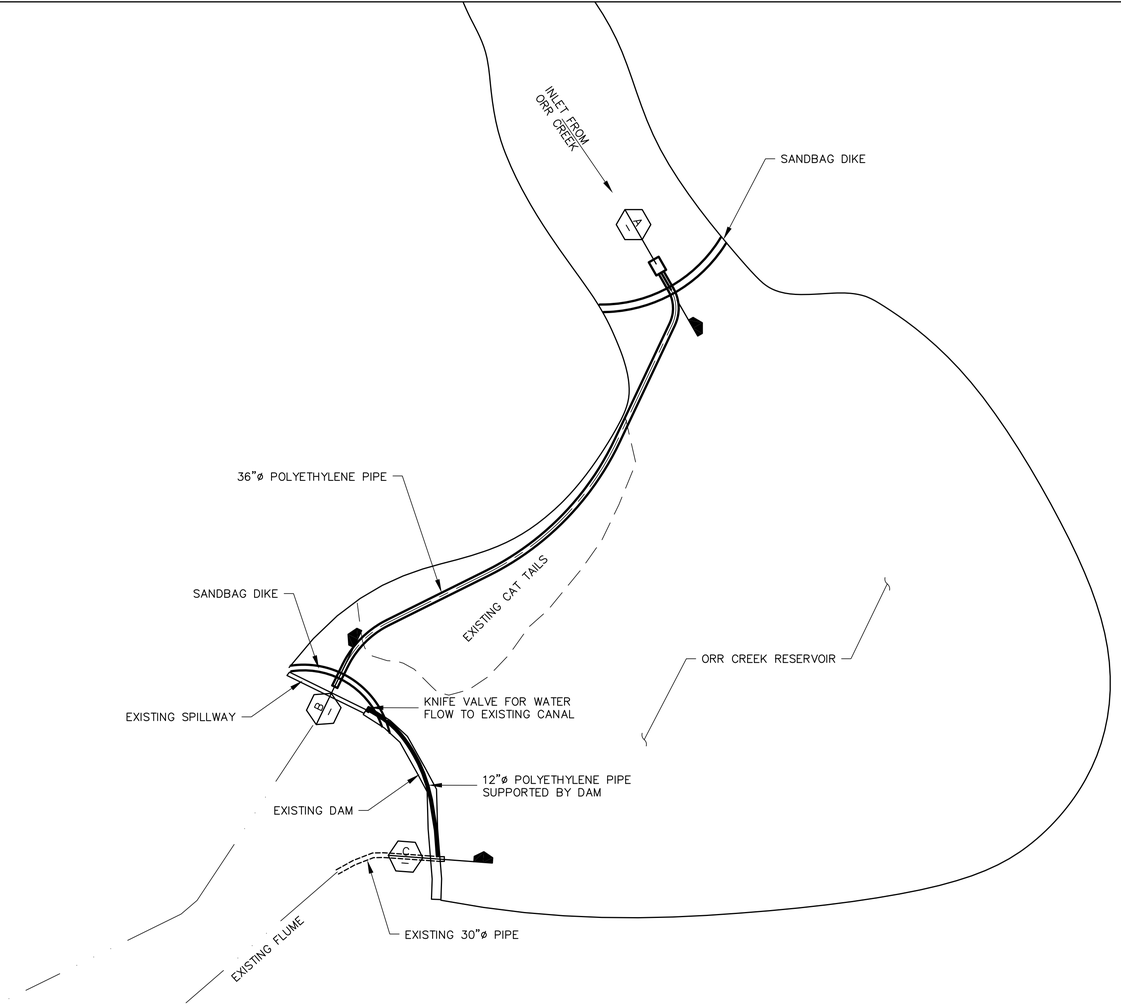
NEVADA IRRIGATION DISTRICT
NEVADA COUNTY -- PLACER COUNTY
GRASS VALLEY, CALIFORNIA

ORR CREEK RESERVOIR CLEANING AND INFRASTRUCTURE IMPROVEMENT PROJECT

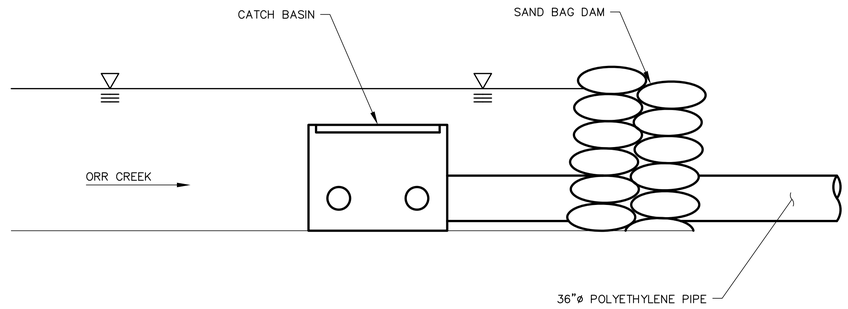
PLAN VIEW

FIGURE 2

Drawn By: D. HUNT Date: 9/21/2015 Scale: 1"=500' @ 8-1/2x11



PLAN VIEW – ORR CREEK BYPASS
SCALE: NTS



A DETAIL
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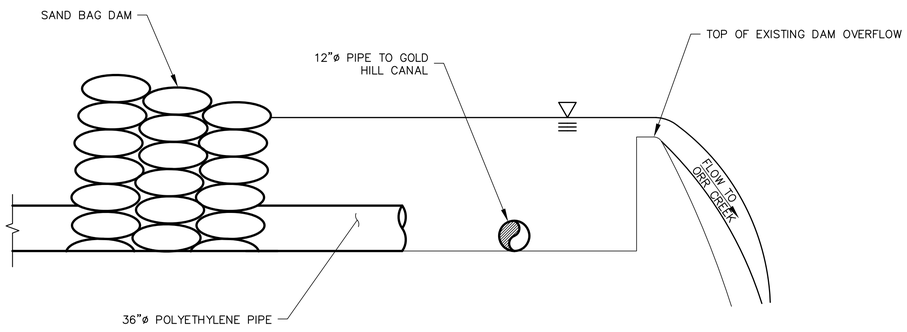

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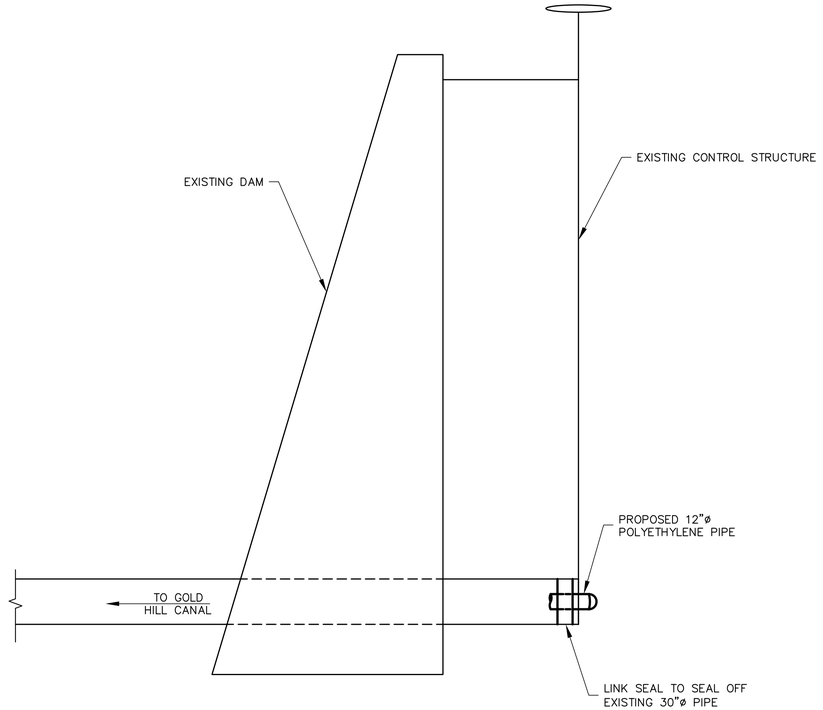

C DETAIL
SCALE: NTS

FIGURE 3. WATER DIVERSION SCHEMATIC.

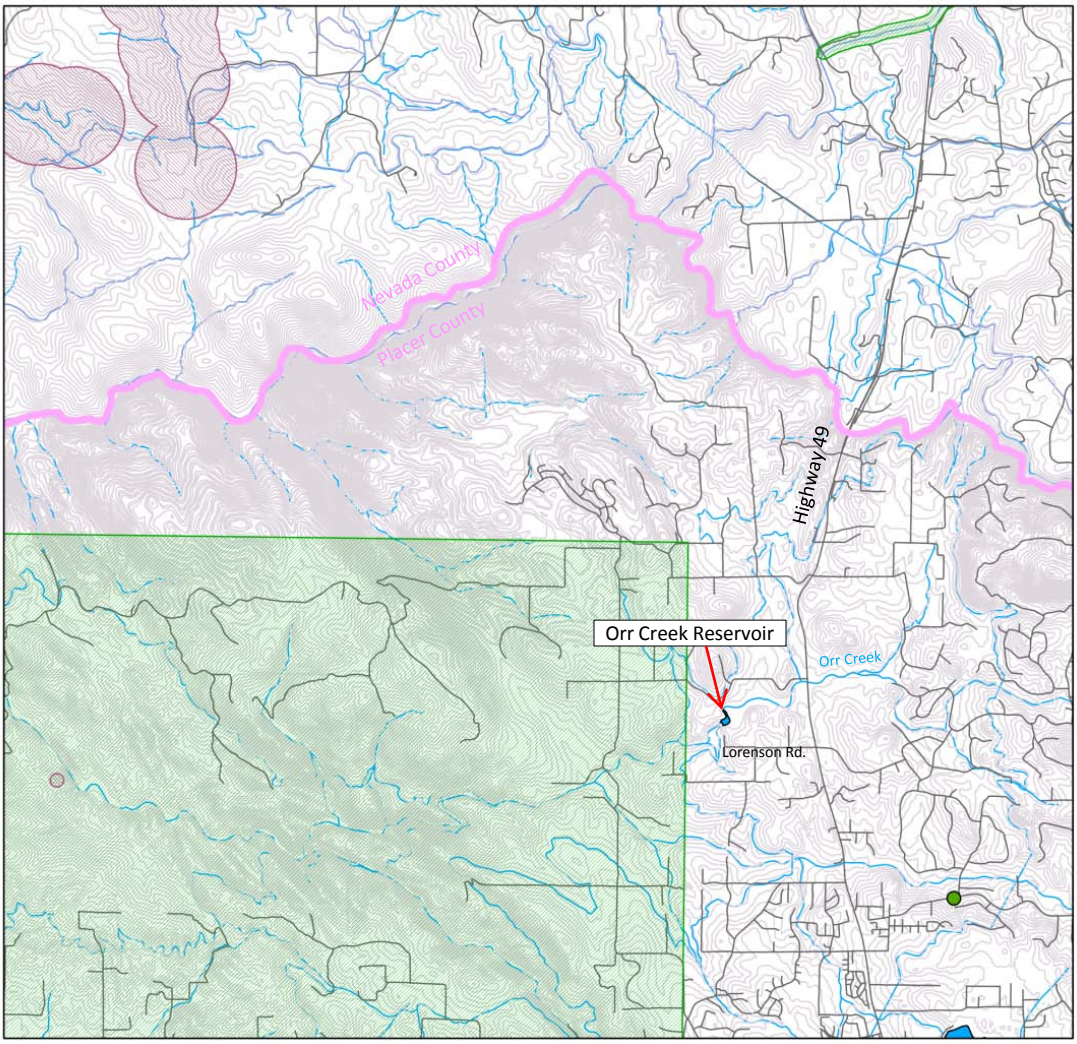

FIGURE 4. CNDDB Species Records

- Jepson's Onion
- Western Pond Turtle (specific location suppressed)
- California Black Rail

N
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E
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ROBERTSON - BRYAN, INC.
Solutions for Progress

Projection: UTM Zone 10
Datum: NAD 83
8/18/14

0 0.5 1.0 Miles

Appendix A

Supporting Information, Section 3.3, Air Quality

Criteria Air Pollutants: Summary of Common Sources and Effects.

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Particulate Matter (PM) Airborne solid particle and liquid particles. Grouped into 2 categories: "Coarse Particles" (PM_{10}) – from 2.5 to 10 microns in diameter. "Fine Particles" ($PM_{2.5}$) – less than 2.5 microns in diameter.	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Ozone (O_3) (Smog) A colorless or bluish gas.	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems, damages plants; reduces crop yield, damages rubber, some textiles and dyes.
Sulfur Dioxide (SO_2) A colorless, nonflammable gas.	Formed when fuel containing sulfur, such as coal and oil, is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, large ships, and fuel combustion in diesel engines.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel; damage crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO) An odorless, colorless gas.	Formed when carbon in fuel is not burned completely;' a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2) A reddish-brown gas.	Fuel combustion in motor vehicles and industrial sources. Motor vehicles; electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead Metallic element.	Metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: California Air Pollution Control Officers Association 2009.

Summary of Ambient Air Quality Standards.

Pollutant	Averaging Time	California Standards (a, c)	National Standards (b, c)	
			Primary (d)	Secondary (e)
Ozone (O_3)	1-hour	0.09 ppm (180 μg/m^3)	- -	Same as Primary
	8-hour	0.070 ppm (137 μg/m^3)	0.075 ppm (157 μg/m^3)	
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean (AAM)	20 μg/m^3	- -	
	24-hour	50 μg/m^3	150 μg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 μg/m^3	12 μg/m^3	15 μg/m^3
	24-hour	No Standard	35 μg/m^3	Same as Primary
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
	8-hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)	Same as Primary
	1-hour	0.18 ppm (470 μg/m^3)	100 ppb (188 μg/m^3)	
Sulfur Dioxide (SO_2)	AAM	–	0.03 ppm (80 μg/m^3)	–
	24-hour	0.04 ppm (105 μg/m^3)	0.14 ppm (365 μg/m^3)	–
	3-hour	–	–	0.5 ppm (1,300 μg/m^3)
	1-hour	0.25 ppm (655 μg/m^3)	75 ppb (196 μg/m^3)	–
Lead	30-day Average	1.5 μg/m^3	–	–
	Calendar Qtr.	–	1.5 μg/m^3	Same as Primary
	AAM	–	0.15 μg/m^3	
Sulfates	24-hour	25 μg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 μg/m^3)		
Vinyl Chloride	24-hour	0.01 ppm (26 μg/m^3)		
Visibility-Reducing Particles	8-hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe)		

Summary of Ambient Air Quality Standards.

Pollutant	Averaging Time	California Standards [a, c]	National Standards [b, c]	
			Primary [d]	Secondary [e]
		due to particles when the relative humidity is less than 70%.		

[a] California standards for O_3, CO (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, PM (PM_{10} and $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] National standards (other than O_3, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of daily concentrations, average over 3 years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25□C and a reference pressure of 760 torr.

[d] The levels of air quality necessary to protect the public health.

[e] The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Source: California Air Resources Board 2014.

Appendix B

Placer County Air Pollution Control District Best Management Practices

Placer County Air Pollution Control District
Air Quality Best Management Practices

- Prior to the commencement of any ground disturbance an Asbestos Dust Management Plan will be submitted and approved by the PCAPCD, including the following components:
    - The applicant shall prepare an Asbestos Dust Mitigation Plan pursuant to CCR Title 17 Section 93105 ("Asbestos Airborne Toxic Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations") and obtain approval by the Placer County APCD. The Plan shall include all measures required by the State of California and the Placer County APCD.
        - If asbestos is found in concentrations greater than 5 percent, the material shall not be used as surfacing material as stated in state regulation CCR Title 17 Section 93106 ("Asbestos Airborne Toxic Control Measure-Asbestos Containing Serpentine"). The material with naturally-occurring asbestos can be reused at the site for sub-grade material covered by other non-asbestos-containing material
    - NID will submit to PCAPCD a comprehensive inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower of greater) that will be used in aggregate of 40 or more hours for the construction project. If any new equipment is added after submission of the inventory, the prime contractor shall contact PCAPCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the PCAPCD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.
    - Prior to approval of Grading or Improvement Plans, whichever occurs first, NID shall provide a written calculation to the PCAPCD for approval demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average of 20% of NOx and 45% of DPM reduction as compared to CARB statewide fleet average emissions. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
- PCAPCD recommends including the following standard notes on the Improvement/Grading Plan, or as an attached form:
    - During construction the contractor shall utilize existing power sources (e.g., power poles) or clean fuel (e.g., gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.
    - During construction, the contractor shall minimize idling time to a maximum of 5 minutes for all diesel powered equipment.
    - Signs shall be posted in the designated queuing areas of the construction site to limit idling to a maximum of 5 minutes.
    - Idling of construction related equipment and construction related vehicles should not occur within 1,000 feet of any sensitive receptor.
- PCAPCD's Rules and Regulations are requested to be included as standard notes, or as an attached form to all subsequent Grading/Improvement Plans. A list of PCAPCD's Rules and Regulations can be found in the following appendix of the District's CEQA Handbook, **Appendix B,** District Rules & Regulations (Construction)

Placer County Air Pollution Control District
Air Quality Best Management Practices

- NID and contractors will limit idling time pursuant to County Code §10.14.0400, which requires that a driver of a vehicle must not cause or allow an engine to idle at any location for more than 5 consecutive minutes.
- Construction will comply with the BMPs set out in the PCAPCD's Rule 228 Dust Control. Earth-moving operations will be suspended if fugitive dust exceeds Rule 228 Dust Control limitations.
    - Unpaved areas subject to vehicle traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered.
    - The speed of any vehicles and equipment traveling across unpaved areas must be no more than 15 miles per hour.
    - Storage piles and disturbed areas not subject to vehicular traffic must be stabilized by being kept wet, treated with a chemical dust suppressant, or covered when material is not being added to or removed from the pile.
    - Prior to any ground disturbance, including grading, excavating, and land clearing, sufficient water must be applied to the area to be disturbed to prevent emitting dust exceeding Ringelmann 2 (i.e. 40% opacity) and to minimize visible emissions from crossing the NID property line.
    - Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt, from being released or tracked offsite.
    - When wind speeds are high enough to result in dust emissions crossing the NID property line, despite the application of dust mitigation measures, grading and earthmoving operations shall be suspended.
    - No trucks are allowed to transport excavated material off-site unless the trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments, and loads are either:
        - Covered with tarps; or
        - Wetted and loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.
    - In geographic ultramafic rock units, or when naturally-occurring asbestos, ultramafic rock, or serpentine is disturbed, all equipment must be washed down before moving from the property onto a paved public road.
    - In geographic ultramafic rock units, or when naturally-occurring asbestos, ultramafic rock, or serpentine is disturbed, upon completion of the project disturbed surfaces shall be stabilized using one or more of the following methods:
        - Establishment of a vegetative cover;
        - Placement of at least one (1.0) foot of non-asbestos-containing material;
        - Paving;
        - Any other measure deemed sufficient to prevent wind speeds of ten (10) miles per hour or greater from causing visible dust emissions.
    - NID shall take action(s), such as surface stabilization, to minimize wind-driven dust from inactive disturbed surface areas.

Placer County Air Pollution Control District
Air Quality Best Management Practices

- Signs shall be posted in the designated queuing areas of the construction site to remind off-road equipment operators that idling is limited to a maximum of 5 minutes.
- Idling of construction related equipment and construction related vehicles is not recommended within 1,000 feet of any sensitive receptor.
- The Project area is located in an area designated as moderately likely to contain NOA. If NOA is found onsite during Project implementation, NID will comply with all applicable state and PCAPCD requirements related to the disturbance of asbestos.

Appendix C

Special-Status Plants and Wildlife Potentially Occurring in the Project Area

Special-Status Plants Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name Common Name	Blooming/ Fertile Period	Federal Status	State Status	CNPS Rank	Habitat	Potential for occurrence in Orr Creek Reservoir Project Area
Special-Status Plants Potentially Occurring Within the Orr Creek Reservoir Project Area						
Brasenia schreberi watershield	June - September	—	—	2B.3	Ponds and slow streams below 7,300 feet elevation.	Potential for occurrence. Not detected during botanical surveys.
Cardamine pachystigma var. dissectifolia dissected-leaved toothwort	February-May	—	—	1B.2	Rocky or serpentine outcrops, slopes, cliffs, lava talus; 820–10,000 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.
Carex praticola northern meadow sedge	May- July	—	—	2B.2	Moist to wet meadows, riparian edges, open forest; 1,600–11,000 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.
Fritillaria eastwoodiae Butte County fritillary	March-June	—	—	3.2	Dry benches, slopes; Below 5,000 feet in elevation	Potential for occurrence. Not detected during botanical surveys.
Galium californicum ssp. sierrae El Dorado bedstraw	March-July	FE	SR	1B.2	Open pine, oak forests, chaparral, from 300–1,700 feet in elevation in the northern Sierra Nevada Foothills (El Dorado Co.)	Potential for occurrence. Not detected during botanical surveys.
Glyceria grandis American manna grass	June-August	—	—	2B.3	Wet places, meadows, lake and stream margins; below 7,000 feet in elevation	Potential for occurrence. Not detected during botanical surveys.
Horkelia parryi Parry's horkelia	April–September	—	—	1B.2	Chaparral, cismontane woodland on stony, disturbed sites with slightly acidic soils. From 250 to 3,600 feet in elevation. Sierra Nevada Foothills, especially the Ione Formation.	Potential for occurrence. Not detected during botanical surveys.
Juncus leiospermus var. leiospermus Red Bluff dwarf rush	March–May	—	—	1B.1	Vernal pool margins, wet places in chaparral, woodland. Below 5,000 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.
Juncus luciensis Santa Lucia dwarf rush	April-July	—	—	1B.2	Wet, sandy soils of seeps, meadows, vernal pools, streams, roadsides; 900-6,400 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.
Lewisia cantelovii Cantelow's lewisia	May–October	—	—	1B.2	Mesic, granitic, and sometimes serpentinite seeps in broad-leafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest, from 1,000 to 4,500 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.
Lycopodiella inundata Bog club-moss	June–September	—	—	2B.2	Coastal bogs and fens, mesic areas in lower montane coniferous forests, and margins of marshes and swamps, below 3,280 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.

Special-Status Plants Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name Common Name	Blooming/ Fertile Period	Federal Status	State Status	CNPS Rank	Habitat	Potential for occurrence in Orr Creek Reservoir Project Area
Poa sierrae Sierra blue grass	April-June	—	—	1B.3	Shady moist slopes, often on mossy rocks, in canyons, forest; 1,140–5,000 ft.	Potential for occurrence. Not detected during botanical surveys.
Potamogeton epihydrus Nuttall's ribbon-leaved pondweed	June-September	—	—	2B.2	Freshwater marshes and swamps, ponds, lakes, streams; 1,300–6,300 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.
Rhynchospora capitellata brownish beaked rush	July–August	—	—	2B.2	Mesic areas in upper and lower montane coniferous forest, meadows, marshes, and swamps; below 6,570 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.
Scutellaria galericulata marsh skullcap	June–September	–	–	2B.2	Lower montane coniferous forest, marshes and swamps, meadows and seeps. From 0 to 6,900 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.
Stuckenia filiformis ssp. alpina slender-leaved pondweed	May-July	–	–	2B.2	Marshes and swamps Shallow, clear water of lakes, drainage channels, marshes and swamps. 300–7,050 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.
Wyethia reticulata El Dorado County mule ears	April-August	–	–	1B.2	Wooded slopes, chaparral; From 450–2000 feet in elevation. Sierra Nevada Foothills (El Dorado Co.).	Potential for occurrence. Not detected during botanical surveys.
Special-Status Plants Unlikely to Occur Within the Orr Creek Reservoir Project Area						
Allium jepsonii Jepson's onion	April–August	—	—	1B.2	Chaparral, cismontane woodland, and lower montane coniferous forest on gabbroic or serpentinite soils. From 980 to 4,300 feet in elevation.	Unlikely; no appropriate habitat present.
Balsamorhiza macrolepis Big-scale balsamroot	March–June	—	—	1B.2	Chaparral, cismontane woodland and valley and foothill grassland, and vernally moist meadows on sandstone, serpentine, or basalt outcrops. From 300 to 4,600 feet in elevation.	Unlikely; no appropriate habitat present.
Carex sheldonii Sheldon's sedge	May–August	—	—	2B.2	Mesic areas in lower montane coniferous forest, freshwater marshes and swamps, and riparian scrub from 3,900 to 6,600 feet in elevation	Unlikely; project is outside of species' elevational range
Carex xerophila *Chaparral sedge*	March-June	—	—	1B.2	Chaparral, cismontane woodland, and lower montane coniferous forest. Serpentine, gabbroic. From 1,443 to 2,526 feet in elevation	Unlikely; project is outside of species' elevational range.
Calystegia stebbinsii Stebbins' morning-glory	April–July	FE	SE	1B.1	Chaparral (openings) and cismontane woodland on gabbroic or serpentinite soils. From 600 to 2,400 feet in elevation.	Unlikely; no appropriate habitat present.

Special-Status Plants Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name Common Name	Blooming/ Fertile Period	Federal Status	State Status	CNPS Rank	Habitat	Potential for occurrence in Orr Creek Reservoir Project Area
Ceanothus roderickii Pine Hills ceanothus	April-June	FE	SR	1B.2	Rocky, gabbroic substrates, chaparral, oak/pine woodlands. From 820 to 2,000 feet in elevation.	Unlikely; no appropriate habitat present.
Chlorogalum grandiflorum Red Hill's soaproot	May–June	—	—	1B.2	Cismontane woodland, chaparral, and lower montane coniferous forests on serpentine or gabbro soils. From 850 to 3,500 feet in elevation.	Unlikely; no appropriate habitat present.
Chloropyron molle ssp. hispidum hispid bird's-beak	June-September	—	—	1B.1	Saline marshes and flats; Below 430 feet in elevation. Great Central Valley.	Unlikely; no appropriate habitat present and project is outside of species' elevational range.
Croncanthemum suffrutescens *Bisbee peak rush-rose*	April-August	—	—	3.2	Often gabbroic or Ione soil; often disturbed areas. Chaparral. From 246 to 2,198 feet in elevation.	Unlikely; project is outside of the species' geographic range
Downingia pusilla dwarf downingia	March–May	—	—	2B.2	Vernal pools, roadside ditches; Below 500 feet in elevation.	Unlikely; project is outside of species' elevational range.
Epilobium oreganum Oregon fireweed	June-September	—	—	1B.2	Bogs, small streams; 1,800–6,000 feet in elevation.	Unlikely; project is outside of species' elevational range.
Eryngium jepsonii *Jepson's coyote thistle*	April-August	—	—	1B.2	Valley foothill grassland, vernal pools. Clay. 10-984 feet in elevation.	Unlikely; project is outside of species' elevational range.
Fremontodendron decumbens Pine Hill flannelbush	April–July	FE	SR	1B.2	Chaparral, cismontane woodland, and lower montane coniferous forest (openings), on gabbroic or serpentinite soils, from 1,395 to 2,500 feet in elevation.	Unlikely; project is outside of species' elevational range.
Gratiola heterosepala Bogg's Lake hedge-hyssop	April–September	—	SE	1B.2	Marshes and swamps, and vernal pools on clay soils, from 30 to 7,300 feet in elevation	Potential for occurrence. Not detected during botanical surveys.
Ivesia sericoleuca Plumas ivesia	May-September	—	—	1B.2	Dry, generally volcanic meadows; 4,000–8,000 feet in elevation.	Unlikely; project is outside of species' elevational range.
Juncus leiospermus var. ahartii Ahart's dwarf rush	March–May	—	—	1B.2	Vernal pool margins and grassland swales below 300 feet in elevation in the central valley.	Unlikely; project is outside of species' elevational range.

Special-Status Plants Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name Common Name	Blooming/ Fertile Period	Federal Status	State Status	CNPS Rank	Habitat	Potential for occurrence in Orr Creek Reservoir Project Area
Lathyrus sulphureus var. argillaceus dubious pea	April–July	—	—	3	Foothill woodland to fir forest; 1,900–8,200 feet in elevation.	Unlikely; project is outside of species' elevational range.
Legenere limosa legenere	April–June	—	—	1B.1	Vernal pools, below 2,500 feet in elevation.	Unlikely; no appropriate habitat present.
Lewisia serrata saw-toothed lewisia	May-June	—	—	1B.1	Rocky cliff faces and outcrops, riparian scrub, woodland, conifer forest; 2,900–4,700 feet.	Unlikely; project is outside of species' elevational range.
Monardella folletti Follet's monardella	June–September	—	—	1B.2	Lower montane coniferous forests on rocky, serpentine soils, from 1,650 to 6,550 feet in elevation.	Unlikely; project is outside of species' elevational range.
Navarretia myersii ssp. myersii pincushion navarretia	April-May	—	—	1B.1	Vernal pools below 300 feet in elevation.	Unlikely; no appropriate habitat present and project is outside of species' elevational range.
Orcuttia viscid Sacramento Orcutt grass	April -July	FE	SE	1B.1	Vernal pools below 350 feet in elevation.	Unlikely; no appropriate habitat present and project is outside of species' elevational range.
Packera (=Senecio) layneae Layne's ragwort (Layne's butterweed)	April–August	FT	SR	1B.2	Chaparral and cismontane woodland on rocky, gabbroic, serpentine or ultramafic soils. From 650 to 3,400 feet in elevation.	Unlikely; no appropriate habitat present.
Penstemon personatus Closed-throated beardtongue	June–September	—	—	1B.2	Chaparral, lower montane conifer forest, and upper montane coniferous forest; shade, semi-shade, or full sun, on metavolcanic-derived soils, from 3,500 to 7,000 feet in elevation.	Unlikely; project is outside of species' elevational range.
Phacelia stebbinsii Stebbins' phacelia	June–July	—	—	1B.2	Cismontane woodland, lower montane coniferous forest, and meadows and seeps on rocky soils of metamorphic origin, mostly north exposures, from 2,000 to 6,500 feet in elevation.	Unlikely; project is outside of species' elevational range.

Special-Status Plants Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name Common Name	Blooming/ Fertile Period	Federal Status	State Status	CNPS Rank	Habitat	Potential for occurrence in Orr Creek Reservoir Project Area
Pyrrocoma lucida sticky pyrrocoma	July–October	—	—	1B.2	Great Basin scrub, lower montane coniferous forest, and meadows and seeps on alkaline clay soils from 2,300 to 6,400 feet in elevation	Unlikely; project is outside of species' elevational range.
Sagittaria sanfordii Sanford's arrowhead	May-October	—	—	1B.2	Ponds, ditches below 1,000 feet in elevation.	Unlikely; project is outside of species' elevational range.
Sidalcea stipularis Scadden Flat checkerbloom	July–August	—	SE	1B.1	Marshes and swamps, wet montane marshes fed by springs, from 2,290 to 2,400 feet in elevation.	Unlikely; project is outside of species' elevational range.
Viburnum ellipticum oval-leaved viburnum	May–June	–	–	2B.3	Chaparral, cismontane woodland, and lower montane coniferous forest. From 700 to 4,600 feet in elevation.	Potential for occurrence. Not detected during botanical surveys.

Federal Status:
FT = Federal Threatened
FE = Federal Endangered
FC = Federal Candidate

State Status:
SR = listed by California as Rare
ST = California Threatened
SE = California Endangered

California Native Plant Society (CNPS) Rare Plant Rank:
1B = rare, threatened or endangered in California and elsewhere.
2B = rare in California but more common elsewhere.
3 = need more information
_.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
_.2 = Fairly threatened in California (20-80% occurrences threatened)
_.3 = Not very threatened in California (<20% of occurrences threatened or no current threats known)

Special-Status Wildlife Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name	Common Name	Federal Status	State Status	Habitat	Occurrence Notes
Invertebrates					
Branchinecta conservatio	conservancy fairy shrimp	FE	—	Vernal pools in the Central Valley and Interior Coast Ranges.	Unlikely to occur due to lack of suitable habitat. No vernal pools present within Project area. Not observed during field surveys
Branchinecta lynchi	vernal pool fairy shrimp	FT	—	Vernal pools throughout California west of the Sierra Nevada.	Unlikely to occur due to lack of suitable habitat. No vernal pools present within Project area. Not observed during field surveys
Lepidurus packardi	vernal pool tadpole shrimp	FE	—	Vernal pools in the Central Valley containing clear to highly turbid water.	Unlikely to occur due to lack of suitable habitat. No vernal pools present within Project area. Not observed during field surveys
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT	—	Elderberry shrubs throughout the Central Valley and foothills, typically below 500 feet in elevation (USFWS 2014)	Unlikely to occur due to lack of suitable habitat. No elderberry shrubs were detected during field surveys. VELB not observed during field surveys. No records for Nevada County (CDFW 2017).
Fish					
Hypomesus transpacificus	delta smelt	FT	SE, SSC	Estuaries, river channels, tidally influenced backwaters in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo counties.	Unlikely to occur because of lack of suitable habitat. No rivers or appropriate streams in Project area. Outside species current range.
Oncorhynchus clarkia henshawi	Lahonton cutthroat trout	FT	—	Rivers and creeks in Great Basin	Unlikely to occur because of lack of suitable habitat. Outside species current range.

Special-Status Wildlife Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name	Common Name	Federal Status	State Status	Habitat	Occurrence Notes
Oncorhynchus mykiss	steelhead-Central Valley DPS	FT	—	Streams with deep, low-velocity pools tolerant of a wide variety of temperatures.	Unlikely to occur because of lack of suitable habitat. No rivers or appropriate streams in Project area. Outside of species current range.
Oncorhynchus tshawytscha	Central Valley spring run Chinook salmon	FT	ST	Headwater streams of large river systems. Migrate to estuaries.	Unlikely to occur because of lack of suitable habitat. No rivers or appropriate streams in Project area. Outside species current range.
Oncorhynchus tshawytscha	winter run Chinook salmon, Sacramento River	FE	SE	Headwater streams of large river systems. Migrate to estuaries.	Unlikely to occur because of lack of suitable habitat. No rivers or appropriate streams in Project area. Outside species current range.
Amphibians and Reptiles					
Ambystoma californiense	California tiger salamander, central population	FT	ST WL	Occurs primarily in annual grassland habitat, but is also found in the grassy understory of valley-foothill hardwood habitats, and uncommonly along stream courses in valley-foothill riparian habitats. <3,200 feet.	Unlikely to occur. Project area is outside of the species' known geographic range. Not observed during field surveys.

Special-Status Wildlife Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name	Common Name	Federal Status	State Status	Habitat	Occurrence Notes
Rana boylii	foothill yellow-legged frog	—	SCT, SSC	Inhabits perennial rocky (pebble or cobble) streams with cool, clear water in a variety of habitats from valley and foothill oak woodland, riparian forest, ponderosa pine, mixed conifer, coastal scrub, and mixed chaparral from 0 to 4,500 feet in elevation	Potential for occurrence in Orr Creek upstream or downstream of the reservoir. Closest known occurrence is in the Bear River upstream of Lake Combie approximately 8 miles northeast of the Project area (CDFW 2017).
Rana draytonii	California red-legged frog	FT	SSC	Breeding habitat includes aquatic areas with dense, shrubby, or emergent riparian vegetation and a permanent source of deep (greater than 2 1/3 feet deep) still or slow moving water. Upland dispersal habitat includes areas within 1 mile of aquatic breeding habitat with no impassable dispersal barriers (suburban areas, suburban developments, wide or fast flowing rivers or streams, lakes greater than 50 acres, and heavily traveled roads without underpasses or culverts).	Based on the results of the CRLF Site Assessment, The Project area does not represent appropriate breeding habitat for CRLF and there are several impassable dispersal barriers as defined by USFWS (i.e., Interstate 80, Highway 49, and the Middle Fork American River). In addition, no CRLF were observed in the Project area during the reconnaissance survey or the CRLF site assessment. The nearest known location of CRLF is in the American River Watershed approximately 17 miles south of the Project area near Folsom Lake (CNDDB 2017).
Rana sierrae	Sierra Nevada yellow-legged frog	FE	ST WL	Streams, lakes, and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats. Breeds in shallow water in low gradient perennial streams and lakes. Elevations ranging from 4,500 to 12,000 feet.	Unlikely to occur. The Project area is outside of the species' known elevation range. Not observed during field surveys.

Special-Status Wildlife Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name	Common Name	Federal Status	State Status	Habitat	Occurrence Notes
Actinemys marmorata	western pond turtle	—	SSC	Occurs in perennial wetlands and slow-moving creeks and ponds that are at least 1.6 feet deep and support overhanging vegetation and rock outcrops or floating debris for basking from 0 to 6,000 feet in elevation. Nesting habitat includes upland grasslands or open areas in woodlands and forested areas. Good sun exposure, average of 150 feet from aquatic habitats.	Potentially occurring in the within Orr Creek Reservoir, as well as Orr Creek upstream and downstream of the Project area and other nearby water features. Known to occur in Orr Creek downstream of the Project area (CDFW 2017).
Phrynosoma blainvillii	Blainville's (coast) horned lizard	—	SSC	Found in grasslands, coniferous forests, woodlands, and chaparral on exposed sandy-gravelly substrate with scattered shrubs, and clearings from 0 to 4,000 feet in elevation in the Sierra Nevada.	Potentially occurring in areas with appropriate habitat surrounding the Orr Creek Reservoir, including staging areas and sediment drying/draining areas. Closest known occurrence is approximately 11 miles northeast of the Project area near Colfax (CDFW 2017).
Thamnophis gigas	giant garter snake	FT	ST	Uses a wide variety of habitats within the Californian Central Valley including forests, mixed woodlands, grasslands, chaparral, and agricultural lands. Often occurs near aquatic habitat including ponds, marshes, and streams where it freely retreats to when alarmed.	Unlikely to occur. The Project area is outside of the species' known geographic and elevational range. Not observed during field surveys.
Birds					
Elanus leucurus	white-tailed kite	—	CFP (nesting)	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Potential for foraging and nesting in the Project area.

Special-Status Wildlife Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name	Common Name	Federal Status	State Status	Habitat	Occurrence Notes
Haliaeetus leucocephalus	bald eagle	FD (delisted on 6/28/2007) BCC	SE CFP	Year-round resident in ice-free regions of California. Foraging areas include regulated and unregulated rivers, reservoirs, lakes, estuaries, and coastal marine ecosystems. Majority of bald eagles in California breed near reservoirs and nests are usually located within one mile of foraging habitat.	Potential for occasional foraging in the Project area. Unlikely to nest near the Orr Creek Reservoir due to its small size.
Falco peregrinus anatum	American peregrine falcon	FD (delisted on 8/20/99) BCC	SD (delisted 8/6/2009) CFP (nesting)	Breeds in woodlands, forests, coastal habitats and riparian areas near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, or mounds.	Potential for foraging and nesting in the Project area.
Laterallus jamaicensis coturniculus	California black rail	—	ST CFP	Occurs in salt marshes bordering larger bays and freshwater and brackish marshes that are at least 1 acre in size with at least 1 inch of water.	Appropriate habitat is available in the Project area; however, there are no documented occurrences of this species. This species was not detected during protocol-level surveys conducted in April and May 2015 in the Project area.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT	SE	Breeds and forages in riparian areas with low woody vegetation in lowland California, especially willow-cottonwood habitat. In California, this species is believed to be restricted to Sacramento, Amargosa, Kern, Santa Ana, and Colorado River valleys.	Unlikely to occur. The Project is outside of the species known range.
Strix occidentalis occidentalis	California spotted owl	BCC	SSC	Resides in dense, old growth, multi-layered mixed conifer, redwood, Douglas-fir, and oak woodland habitats, from sea level up to approximately 7,600 feet.	Unlikely to occur due to lack of suitable habitat. No suitable nesting habitat in the Project area. Not observed during field surveys.

Special-Status Wildlife Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name	Common Name	Federal Status	State Status	Habitat	Occurrence Notes
Cypseloides niger	black swift	BCC	SSC	Nests in moist crevices or caves, or on cliffs near waterfalls in deep canyons from approximately 7,000 to 11,000 feet. Forages widely over many habitats; seems to avoid arid regions.	Unlikely to occur. The Project area is outside of the species' known elevation range. Not observed during field surveys.
Empidonax traillii (brewsteri)	little willow flycatcher	BCC	SE	Wet meadow and montane riparian habitats from 2,000 to 8,000 feet. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows.	Unlikely to occur. Project area is outside of the species' known elevation range. Not observed during field surveys.
Lanius ludovicianus	loggerhead shrike	BCC	SSC (nesting)	Open habitats with sparse shrubs and trees (or other suitable perch sites) and bare ground and/or low, sparse herbaceous cover; oak woodlands for nesting. Found in lowlands and foothills throughout California.	Potentially occurring in the Project area. Not observed during field surveys. May nest and forage in the Project area.
Riparia riparia	Bank Swallow	—	ST	Colonial nester; nests primarily in riparian and other lowland habitats, most often along the banks of the Sacramento and Feather rivers in the northern Central Valley. Requires vertical banks/cliffs with fine-grained/sandy soils near streams, rivers, lakes, or the ocean to dig nesting hole.	Unlikely to occur in the Project area due to lack of suitable habitat. The Project area is outside of the species' known geographic range. Not observed during field surveys.
Progne subis	purple martin	—	SSC	Inhabits valley foothill and mountain hardwood-conifer and riparian habitats. Nests in old woodpecker cavities and human-made structures. Nest often located in tall, isolated tree/snag.	Potential for foraging and nesting in the Project area. Not observed during field surveys.

Special-Status Wildlife Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name	Common Name	Federal Status	State Status	Habitat	Occurrence Notes
Dendroica petechia brewsteri	yellow warbler	—	SSC (nesting)	Breeds in riparian woodlands from coastal and desert lowlands up to 8,000 feet in the Sierra Nevada. Also breeds in montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial amounts of brush.	Potentially occurring in the Project area. Not observed during field surveys. May nest and forage in the Project area.
Agelaius tricolor	tricolored blackbird	—	SCE, SSC	Highly colonial species, most numerous in the Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, & a foraging area with insect prey within a few kilometers of the colony.	Potential for foraging and nesting in the Project area. Not observed during field surveys.
Mammals					
Corynorhinus townsendii	Townsend's big eared bat	—	SSC	Found in all but alpine and subalpine habitats; most abundant in mesic habitats. Requires caves, mines, tunnels, buildings, or other man-made structures for roosting. This species is extremely sensitive to disturbance and may abandon a roost if disturbed.	Potentially occurring in the Project area. May forage in Project area, but no appropriate roosting habitat present. Not observed during field surveys.
Antrozous pallidus	pallid bat	—	SSC	Inhabits grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. Typically roosts in caves, crevices, or mines. Requires open habitat for foraging.	Potentially occurring in the Project area. May forage in Project area, but no appropriate roosting habitat present. Not observed during field surveys.
Bassariscus astutus	ringtail	—	CFP	Found in most forest and shrub habitats in close association with rock and/or riparian areas, usually not more than .6 miles from water. Dens in hollow trees, snags, or other cavities.	Potentially occurring in the Project area. May forage or den in Proposed Project vicinity. Not observed during field surveys.

Special-Status Wildlife Potentially Occurring in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Scientific Name	Common Name	Federal Status	State Status	Habitat	Occurrence Notes
Pekania pennanti	fisher (West Coast DPS)	FC	SCT SSC	Suitable habitat consists of large areas of mature, dense forest such as red fir, lodgepole pine, ponderosa pine, mixed conifer, and Jeffery pine forests with snags and greater than 50% canopy closure. Known from 4,000 to 8,000 ft.	Unlikely to occur. Project area is outside of the species' known elevation range. Not observed during field surveys.

Federal Status:
FT = Federal Threatened
FE = Federal Endangered
FC = Federal Candidate
FD = Federal Delisted
FPD = Federal Proposed Delisted

State Status:
ST = California Threatened
SD = California Delisted
SE = California Endangered
SCT = California Candidate Threatened
SCE = California Candidate Endangered
CFP = Fully Protected
SSC = California Species of Special Concern
WL=Watch List

Appendix D

Plant Species Observed During Special-Status Plant Surveys

Comprehensive Plant List

Plants observed during surveys conducted July 29, 2014 and May 7, 2015.

Scientific Name	**Common Name**	**Plant Family**
Chlorogalum pomeridianum var. pomeridianum	common soaproot	Agavaceae
Alisma lanceolatum	lanceleaf water plantain	Alismataceae
Saggitaria cuneata	arumleaf arrowhead	Alismataceae
Toxicodendron diversilobum	poison oak	Anacardiaceae
Daucus carota	Queen Anne's lace	Apiaceae
Daucus pusillus	wild carrot	Apiaceae
Osmorhiza sp.	sweet cicely	Apiaceae
Sanicula bipinnata	poison sanicle	Apiaceae
Sanicula crassicaulis	Pacific sanicle	Apiaceae
Scandix pecten-veneris	Shepherd's needle	Apiaceae
Torilis arvensis	spreading hedgeparsley	Apiaceae
Achillea millefolium	common yarrow	Asteraceae
Anaphalis margaritacea	pearly everlasting	Asteraceae
Artemisia douglasiana	Douglas' sagewort	Asteraceae
Baccharis pilularis	coyote brush	Asteraceae
Carduus pycnocephalus	Italian thistle	Asteraceae
Centaurea solstitialis	yellow starthistle	Asteraceae
Chondrilla juncea	rush skeletonweed	Asteraceae
Cichorium intybus	chicory	Asteraceae
Cirsium arvense	Canada thistle	Asteraceae
Cirsium vulgare	bull thistle	Asteraceae
Erigeron canadensis	horseweed	Asteraceae
Erigeron filifolius	threadleaf fleabane	Asteraceae
Euthamia occidentalis	Western goldenrod	Asteraceae
Hypochaeris radicata	hairy cat’s ear	Asteraceae
Lactuca serriola	prickly lettuce	Asteraceae
Madia elegans	common madia	Asteraceae
Senecio vulgaris	common groundsel	Asteraceae
Silybum marianum	milk thistle	Asteraceae
Xanthium strumarium	cocklebur	Asteraceae
Gnaphalium canescens	everlasting cudweed	Asteraceae
Alnus rhombifolia	white alder	Betulaceae
Phacelia purpusii	Purpuss's phacelia	Boraginaceae
Brassica nigra	black mustard	Brassicaceae
Brassica rapa	common mustard	Brassicaceae
Capsella bursa-pastoris	shepherd's purse	Brassicaceae
Cardamine oligosperma	Idaho bittercress	Brassicaceae
Hirschfeldia incana	mustard	Brassicaceae

Comprehensive Plant List

Plants observed during surveys conducted July 29, 2014 and May 7, 2015.

Scientific Name	Common Name	Plant Family
Nasturtium officinale	watercress	Brassicaceae
Sisymbrium officinale	hedge mustard	Brassicaceae
Lonicera hispidula	pink honeysuckle	Caprifoliaceae
Cerastium glomeratum	large mouse ears	Caryophyllaceae
Petrorhagia prolifera	pink grass	Caryophyllaceae
Silene gallica	common catchfly	Caryophyllaceae
Calystegia occidentalis	bush morning glory	Convulvulaceae
Carex cusickii	Cusick's sedge	Cyperaceae
Carex feta	sreensheath sedge	Cyperaceae
Carex serratodens	bifid sedge	Cyperaceae
Cyperus eragrostis	nutsedge	Cyperaceae
Eleocharis sp.	small spikerush	Cyperaceae
Schoenoplectus californicus	common bullrush	Cyperaceae
Equisetum arvense	common horsetail	Equisetaceae
Arctostaphylos sp.	green leaf manzanita	Ericaceae
Eremocarpus setigerus	turkey mullein	Euphorbiaceae
Hosackia pinnata	pinnate lotus	Fabaceae
Lathyrus sp.	wild pea	Fabaceae
Lotus corniculatus	bird's foot trefoil	Fabaceae
Lotus purshianus var. purshianus	spanish lotus	Fabaceae
Lupinus bicolor	lupine	Fabaceae
Lupinus nanus	valley sky lupine	Fabaceae
Medicago polymorpha	California burclover	Fabaceae
Trifolium aureum	hop clover	Fabaceae
Trifolium dubium	shamrock	Fabaceae
Trifolium fragiferum	strawberry clover	Fabaceae
Trifolium hirtum	rose clover	Fabaceae
Trifolium microcephalum	small head clover	Fabaceae
Trifolium repens	white clover	Fabaceae
Vicia sativa	spring vetch	Fabaceae
Vicia sativa ssp. nigra	smaller common vetch	Fabaceae
Quercus douglasii	blue oak	Fagaceae
Quercus dumosa	scrub oak	Fagaceae
Quercus kellogii	California black oak	Fagaceae
Quercus wislizeni	interior live oak	Fagaceae
Zeltnera (=Centaurium) muehlenbergii	Muhlenberg's centaury	Gentianaceae
Erodium botrys	big heron bill	Geraniaceae
Erodium moschatum	whitestem filaree	Geraniaceae

Comprehensive Plant List

Plants observed during surveys conducted July 29, 2014 and May 7, 2015.

Scientific Name	Common Name	Plant Family
Geranium dissectum	cutleaf geranium	Geraniaceae
Geranium molle	crane's bill geranium	Geraniaceae
Aesculus californica	California buckeye	Hippocastanaceae
Hypericum mutilum	small flowered St John's Wort	Hypericaceae
Hypericum perforatum	Klamathweed	Hypericaceae
Hypericum anagalloides	tinker’s penny	Hypericaceae
Juncus hemiendytus	dwarf rush	Juncaceae
Juncus mexicanus	Mexican rush	Juncaceae
Juncus oxymerus	pointed rush	Juncaceae
Juncus xiphioides	iris leaved rush	Juncaceae
Luzula comosa	hairy wood rush	Juncaceae
Menta spicata	spearmint	Lamiaceae
Mentha arvensis	wild mint	Lamiaceae
Mentha pulegium	pennyroyal	Lamiaceae
Mentha spicata	spearmint	Lamiaceae
Prunella vulgaris	selfheal	Lamiaceae
Stachys sp.	hedge nettle	Lamiaceae
Calochortus albus	white fairy lantern	Liliaceae
Linum usitatissimum	common flax	Linaceae
Claytonia parviflora	narrow leaved miner's lettuce	Montiaceae
Claytonia perfoliata	miner's lettuce	Montiaceae
Anagallis arvensis	pimpernel	Myrsinaceae
Epilobium torreyi	Torrey's willowherb	Onagraceae
Ludwigia peploides ssp. montevidensis	floating water primrose	Onagraceae
Pinus ponderosa	ponderosa pine	Pinaceae
Pinus sabiniana	foothill pine	Pinaceae
Collinsia heterophylla	Chinese houses	Plantaginaceae
Plantago lanceolata	ribwort	Plantaginaceae
Aira caryophyllea	silvery hairgrass	Poaceae
Avena fatua	wild oats	Poaceae
Bromus diandrus	ripgut brome	Poaceae
Bromus hordeaceus	soft chess	Poaceae
Bromus madritensis	foxtail chess, foxtail brome	Poaceae
Bromus tectorum	downy chess	Poaceae
Cynodon dactylon	Bermuda grass	Poaceae

Comprehensive Plant List
Plants observed during surveys conducted July 29, 2014 and May 7, 2015.

Scientific Name	Common Name	Plant Family
Cynosurus echinatus	hedgehog dogtail grass	Poaceae
Dactylis glomerata	Orchardgrass	Poaceae
Elymus caput-medusae	medusa head	Poaceae
Elymus glaucus	blue wildrye	Poaceae
Festuca arundinacea	reed fescue	Poaceae
Festuca microstachys	small fescue	Poaceae
Festuca perennis	Italian rye grass	Poaceae
Festuca pratensis	meadow fescue	Poaceae
Gastridium phleoides	nit grass	Poaceae
Holcus lanatus	common velvetgrass	Poaceae
Hordeum marinum	seaside barley	Poaceae
Hordeum murinum	foxtail barley	Poaceae
Melica californica	California melic	Poaceae
Poa annua	annual blue grass	Poaceae
Poa pratensis	Kentucky blue grass	Poaceae
Stipa pulchra	purple needle grass	Poaceae
Gilia capitata	blue field gilia	Polemonicaceae
Navarretia pubescens	purple navarretia	Polemonicaceae
Persicaria sp.	smartweed	Polygonaceae
Polygonum aviculare	prostrate knotweed	Polygonaceae
Rumex acetosella	sheep sorrel	Polygonaceae
Rumex crispus	curly dock	Polygonaceae
Polypodium calirhiza	licorice fern	Polypodiaceae
Ranunculus californicus	common buttercup	Ranunculaceae
Ranunculus occidentalis	Western buttercup	Ranunculaceae
Ceanothus cuneatus	buck brush	Rhamnaceae
Frangula (=Rhamnus) californica	California coffeeberry	Rhamnaceae
Rhamnus ilicifolia	evergreen buckthorn	Rhamnaceae
Heteromeles arbutifolia	toyon	Rosaceae
Prunus cerasifera	cherry plum	Rosaceae
Rosa canina	dog rose	Rosaceae
Rubus armeniacus (=discolor)	Himalayan blackberry	Rosaceae
Rubus laciniatus	cut leaved blackberry	Rosaceae
Cephalanthus occidentalis	common buttonbush	Rubiaceae
Galium aparine	ceavers	Rubiaceae
Galium parisiense	wall bedstraw	Rubiaceae

Comprehensive Plant List
Plants observed during surveys conducted July 29, 2014 and May 7, 2015.

Scientific Name	**Common Name**	**Plant Family**
Galium porrigens	climbing bedstraw	Rubiaceae
Salix lasiolepis	wrroyo willow	Salicaceae
Aesculus californica	buckeye	Sapindaceae
Veronica peregrina L. ssp. xalapensis	purslane speedwell	Scrophulariaceae
Veronica persecaria	birdseye speedwell	Scrophulariaceae
Verbascum blattaria	moth mullein	Scrophulariaceae
Verbascum thapsus	common mullein	Scrophulariaceae
Brodiaea elegans	wally basket	Themedaceae
Dichelostemma capitatum	wild hyacinth	Themedaceae
Brodiaea elegans	harvest brodiaea	Themedaceae
Brodiaea minor	low brodiaea	Themedaceae
Dichelostemma capitatum	blue dicks	Themedaceae
Dichelostemma volubile	twining brodiaea	Themedaceae
Triteleia hyacinthina	wild hyacinth	Themedaceae
Triteleia laxa	Ithuriel's spear	Themedaceae
Typha angustifolia	narrow leaf cattail	Typhaceae
Vitis californica	California wild grape	Vitaceae

Appendix E

Resident Fish Species Potentially Occurring in the Project Area

Resident Fish Species Potentially Present in the Orr Creek Reservoir Cleaning and Infrastructure Improvement Project Area.

Common Name	Scientific Name	Status (Federal / State) [1]	California Native/Non-native
Black bullhead	*Ameiurus melas*	-- / --	Non-native
Bluegill	*Lepomis macrochirus*	-- / --	Non-native
Brown bullhead	*Ameiurus nebulosus*	-- / --	Non-native
Brown trout	*Salmo trutta*	-- / --	Non-native
Rainbow trout	*Oncorhynchus mykiss*	-- / --	Native
Central Valley steelhead	*Oncorhynchus mykiss*	FT / ST	Native
Golden shiner	*Notemigonus crysoleucas*	-- / --	Non-native
Green sunfish	*Lepomis cyanellus*	-- / --	Non-native
Largemouth bass	*Micropterus salmoides*	-- / --	Non-native
Redear sunfish	*Lepomis microlophus*	-- / --	Non-native
Riffle sculpin	*Cottus gulosus*	-- / --	Native
Sacramento hitch	*Lavinia exilicauda exilicauda*	-- / --	Native
Sacramento perch	*Archoplites interruptus*	SSC	Native
Sacramento pikeminnow	*Ptychocheilus grandis*	-- / --	Native
Sacramento sucker	*Catostomus occidentalis*	-- / --	Native
Smallmouth bass	*Micropterus dolomieu*	-- / --	Non-native
Western mosquitofish	*Gambusia affinis*	-- / --	Non-native
White crappie	*Pomoxis annularis*	-- / --	Non-native

Source: UC Davis PISCES Database, accessed August 2017. pisces.ucdavis.edu

Appendix F

U.S. Fish and Wildlife California Red-Legged Frog Concurrence

From:	Vogel, Ian
To:	Janelle Nolan
Cc:	Tera Stoddard; Gary King; Kuyper, Richard
Subject:	Re: Nevada Irrigation District Orr Creek Reservoir Cleaning and Infrastructure Improvement Project - CRLF Site Assessment
Date:	Tuesday, September 19, 2017 3:48:12 PM
Attachments:	image001.jpg

Hi Janelle,

I reviewed the California red-legged frog (CRLF) Site Assessment for NID's Orr Creek Reservoir Cleaning and Infrastructure Improvement Project and I concur with the findings of the report. Due to the presence of multiple species of predators, it is unlikely that Orr Creek and Orr Creek Reservoir would support CRLF breeding. These aquatic features, in addition to the surrounding upland habitat, may provide marginal dispersal habitat. The characteristics of Gold Hill I Canal and Lone Star Canal, as explained in the report, likely preclude CRLF breeding, though they may provide aquatic dispersal habitat. Other aquatic habitats outside of the project area (off-channel ponds and Dry Creek) may provide potential CRLF breeding habitat and/or dispersal habitat. Due to access restrictions, these sites were not fully assessed. It is possible that potential predators are present in many of these habitats.

Based on the information provided in the report, the project area does not contain CRLF breeding habitat. Due to the lack of breeding habitat within the project area and the significant distance from the closest known CRLF breeding population, it is unlikely that CRLF occur in the project area. Please let me know if you have any further questions.

Thanks,
Ian

On Mon, Sep 18, 2017 at 3:49 PM, Kuyper, Richard <richard_kuyper@fws.gov> wrote:

> Hi Janelle, nice to hear from you. I've asked Ian Vogel to review the habitat assessment. He is cc'd on this e-mail.
>
> Regards,
>
> Rick Kuyper
> Chief - Sierra/Cascades Division
> Endangered Species Program
> Sacramento Fish and Wildlife Office
> U.S. Fish and Wildlife Service
> (916) 414-6621
>
> On Mon, Sep 18, 2017 at 11:10 AM, Janelle Nolan <Janelle@jna-consulting.com> wrote:
>
> > Hello Rick,
> >
> > I hope that you are doing great. I am excited to be able to work with you again! Attached please find the California Red-legged Frog Site Assessment for Nevada Irrigation District's (NID) Orr Creek Reservoir Cleaning and Infrastructure Improvement Project.

The site assessment was completed in accordance with the *Revised Guidance on Site Assessments and Field Surveys for California Red-legged Frog-August 2005* by Jeff Alvarez and Tera Stoddard.

NID is requesting your review and concurrence with the findings of the report. Please feel free to contact me if you have questions or would like to discuss Project details. I will be out of the office this week, but will be back on Monday. I will follow-up with you on Monday.

Thank you,

Janelle

Janelle Nolan

Environmental Compliance/Permitting

Janelle Nolan & Associates Environmental Consulting

Office: (530) 295-0502

Cell: (530) 277-4582

janelle@jna-consulting.com

letterhead_email150

--
Ian Vogel
Fish and Wildlife Biologist - Sierra/Cascades Division
Endangered Species Program
Sacramento Fish and Wildlife Office
U.S. Fish and Wildlife Service
(916) 414-6444

Appendix G

Nevada Irrigation District Policy 6085, Cultural Resources

Nevada Irrigation District

Staff Report

for the Board of Directors of June 10, 2015

TO: Board of Directors

FROM: Gary King, Engineering Manager

DATE: June 1, 2015

SUBJECT: **Policy – Cultural Resources (Consent)**

ENGINEERING

RECOMMENDATION:
Adopt Resolution No. 2015-16 (Establishing Policy for Administration – Cultural Resources) as recommended by the Administrative Practices Committee on May 5, 2015.

BACKGROUND:
Cultural resources can be found during numerous District activities. These resources such as Indian pottery or mining equipment are relevant to the history of this area. If the District encounters these resources, staff will take reasonable efforts to protect and preserve resources. Once these materials are removed, they can be stored and then donated to a preservation organization with the potential of display to the public. Human remains if found have a more formal method which is indicated in the attached guideline.

Staff in collaboration with a professional archeologist has developed a guideline for dealing with either human or cultural remains. In addition, this guideline was discussed in the Engineering Committee on May 19, 2015 and will be used by staff and included as a guideline in future California Environmental Quality Act documents. The guideline has been provided as an information item as part of this request.

It is the recommendation of staff to approve the attached policy.

BUDGETARY IMPACT:
No budget impact

GDK

Nevada Irrigation District

POLICY MANUAL

POLICY TITLE: Cultural Resources
POLICY NUMBER: 6085

The purpose of this policy is to outline efforts of the District to protect inadvertently discover cultural resources or human remains.

6085.1 Discovery of Cultural Resources

Archaeological materials: may include, but are not limited to, flaked stone tools (projectile point, biface, scraper, etc.) and debitage (flakes) made of chert, obsidian, etc., groundstone milling tools and fragments (mortar, pestle, handstone, millingstone, etc.), faunal bones, fire-affected rock, dark middens, house pit depressions and human interments.

Historic-era Resources: may include, but are not limited to, small cemeteries or burial plots, cut (square) nails, containers or miscellaneous hardware, glass fragments, cans with soldered seams or tops, ceramic or stoneware objects or fragments, milled or split lumber, earthworks, feature or structure remains and trash dumps.

The District will treat those materials in a manner consistent using guidelines developed by the District staff and appropriate professionals which will follow standards of the industry and regulatory requirements to manage the discovery of cultural resources.

6085.2 Discovery of Human Remains

According to Section 7050 of the California Health and Safety Code, it is a misdemeanor to knowingly disturb a human burial site. If human remains are encountered (or are suspected) during related activity, the District or its contractor will treat those remains or suspected remains in a dignified manner using guidelines developed by the District staff and appropriate professionals which will follow standards of the industry and regulatory requirements to manage the discovery of human remains.

Adopted: (Date) via Resolution No. 2015
Revised:

GUIDELINES FOR CULTURAL RESOURCES
MAY 11, 2015

Unanticipated Discovery of Cultural Resources

If subsurface cultural resources are inadvertently uncovered during Project ground disturbing activities

Archaeological materials: may include, but are not limited to, flaked stone tools (projectile point, biface, scraper, etc.) and debitage (flakes) made of chert, obsidian, etc., groundstone milling tools and fragments (mortar, pestle, handstone, millingstone, etc.), faunal bones, fire-affected rock, dark middens, house pit depressions and human interments.

Historic-era Resources: may include, but are not limited to, small cemeteries or burial plots, cut (square) nails, containers or miscellaneous hardware, glass fragments, cans with soldered seams or tops, ceramic or stoneware objects or fragments, milled or split lumber, earthworks, feature or structure remains and trash dumps. NID or its contractor shall complete the following steps:

1. Stop all work when cultural resources are encountered
2. Immediately contact the NID Project Manager
3. NID will relocate work within no less than 150 feet of the discovery or otherwise directed by the NID Qualified Professional Archaeologist; If NID resumes work in a location where cultural resources have been discovered and cleared
4. NID will have an onsite archeologist to confirm that no additional archaeological resources are in the area.
5. NID or its contractor shall secure the discovery location with traffic plates over the exposed site or a person watching the site until cleared by the archeologist
6. NID contractor will make every effort not to further harass or damage, touch, or remove any cultural resources materials
7. All spoils will remain in their current location until directed to be moved by NID staff or the archeologist.
8. NID or its contractor shall record the location and keep notes of all calls and events
9. NID or its contractor shall treat the find as confidential and do not publically disclose the location. Only authorized personnel, or individuals with the permission of NID
   (and the land owner if different from NID) shall be allowed on the archeological site
10. The NID archaeologist will assess the significance of the find. All materials c o l l e c t e d and secured by NID at the offsite District location. The NID archeologist will not provide any materials to a tribal agency or other group unless directed by the District. All materials found will be secured and provided to an appropriate tribal or museum of selection at the discretion of the District. The District will make every effort to treat the sharing of materials such that the community is benefited by the find
11. No additional work shall take place within the immediate vicinity of the find until NID's chosen archaeologist has given approval and with the concurrence of SHPO.

Unanticipated Discovery of Human Remains

Section 7050 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial site. If human remains are encountered (or are suspected) during any project-related activity, NID's contractor shall complete the following steps:

1. Immediately stop all work when human remains are encountered
2. Immediately contact the NID Project Manager or Department Manager
3. NID will contact a Qualified Professional Archaeologist (meeting the Secretary of the Interior's Qualifications) who will then notify the County Coroner immediately pursuant to PRC Section 7050.5;
4. NID or its contractor will relocate work if directed by NID within no less than 150 feet of the discovery or otherwise directed by the NID Qualified Professional Archaeologist;
5. NID will have the NID archeologist confirm that no additional archaeological resources are in the area. If NID resumes work in a location where human remains have been discovered and cleared, NID will have a Qualified Professional Archaeologist onsite to confirm that no additional human remains are in the area
6. NID's contractor shall not damage, touch, or remove any human remains or associated materials or remove associated spoils or pick through them;
7. Record the location and keep notes of all calls, site visits and events;
8. NID or its contractor shall treat the find as confidential and do not publically disclose the location. NID shall provide security to the area as needed. Only authorized personnel, or individuals with the permission of NID (and the land owner, if different from NID) shall be allowed onsite.
9. The County Coroner may assess the human remains. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of such identification. The NAHC shall identify the most likely descendant (MLD).
10. Once given the permission by NID (and the land owner if different from NID) the MLD shall be allowed onsite. The MLD shall complete their inspection and make their recommendation to NID for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98. MLD recommendations must be made within 48 hours of the NAHC notification to the MLD.
11. No additional work shall take place within the immediate vicinity of the find until NID's chosen archaeologist gives approval to resume work in that area.

Appendix H

Sediment Characterization Report for Orr Creek Diversion Structure

SEDIMENT CHARACTERIZATION REPORT

FOR

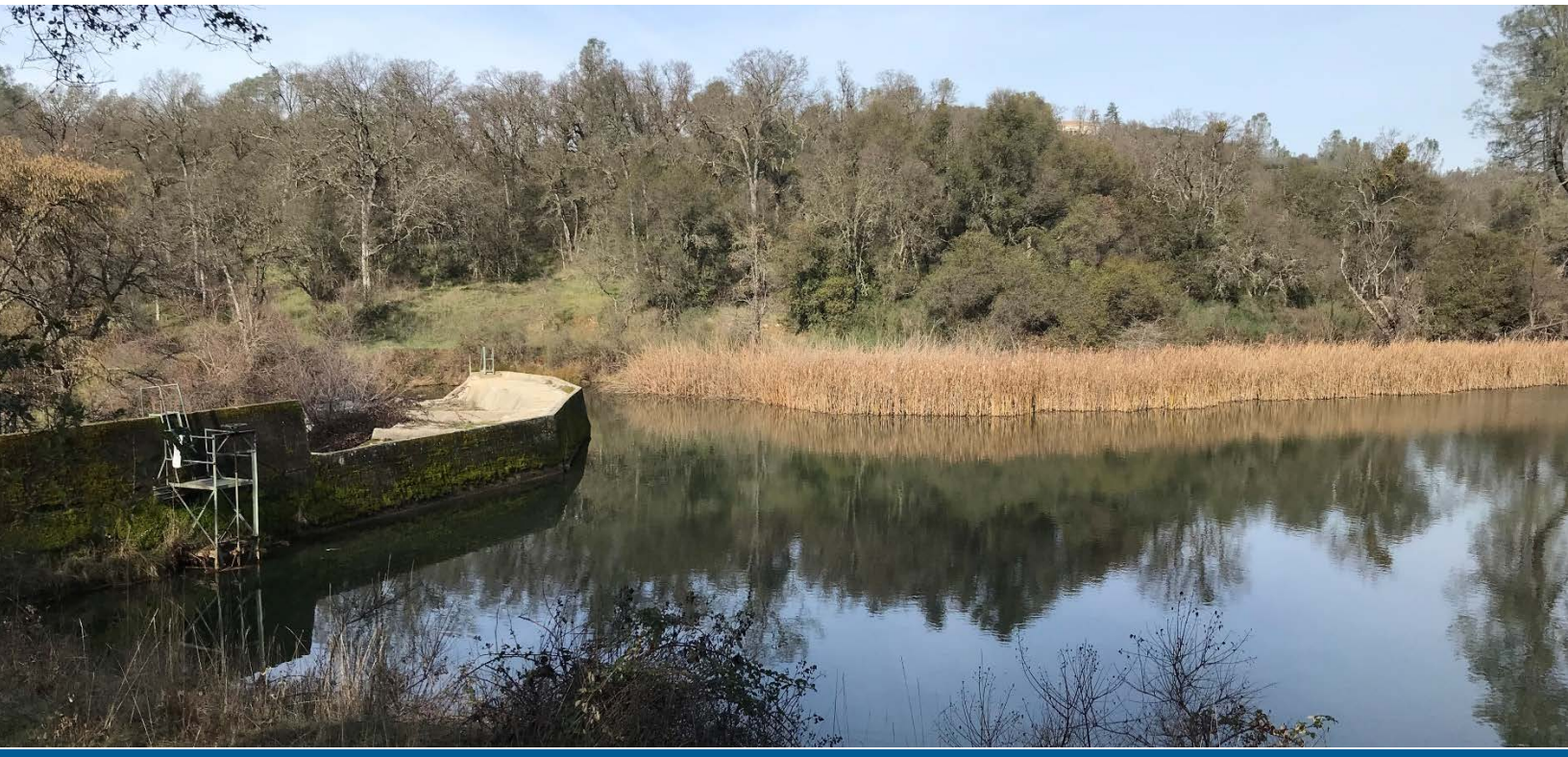
ORR CREEK DIVERSION STRUCTURE

AUBURN, CALIFORNIA

FEBRUARY 09, 2018

PREPARED FOR:

NEVADA IRRIGATION DISTRICT
ENGINEERING DEPARTMENT
1036 WEST MAIN STREET
GRASS VALLEY, CALIFORNIA 95945



HOLDREGE & KULL, AN NV5 COMPANY
792 SEARLS AVENUE
NEVADA CITY, CALIFORNIA 95959

PROJECT NO. 5014.01

HOLDREGE & KULL
CONSULTING ENGINEERS • GEOLOGISTS
An NV5 Company

Project No. 5014.01
February 9, 2018

Nevada Irrigation District
1036 West Main Street
Grass Valley, CA 95945

Attention: Gary King, Engineering Manager

Reference: ***Orr Creek Diversion Structure***
Gold Hill Canal
Lorenson Road and Edwards Lane
Auburn, California

Subject: ***Sediment Characterization Report***

Dear Mr. King:

On behalf of the Nevada Irrigation District (NID), Holdrege & Kull, an NV5 Company (H&K/NV5) prepared this report to summarize site investigation procedures and to present the results of sediment characterization for the Orr Creek Diversion Structure located in Auburn, California. The site investigation was performed in general accordance with the scope of work presented in the *Proposal for Sediment Characterization, Orr Creek Diversion Structure* (H&K, December 15, 2017).

H&K/NV5 appreciates the opportunity to provide environmental services for the Orr Creek Diversion Structure. Please contact the undersigned with any questions or comments regarding H&K/NV5's investigation.

Sincerely,

HOLDREGE & KULL, AN NV5 COMPANY

REGISTERED PROFESSIONAL ENGINEER
JASON W. MUIR
No. 60167
Exp. 06/18
CIVIL
STATE OF CALIFORNIA

Bryan Botsford, P.G. 9582
Project Geologist

Jason W. Muir, C.E. 60167
Principal Engineer

F:\1 Projects\5014 Orr Creek Diversion Structure\Sediment Characterization Report\01 Text\5014-01 Sediment Characterization Report, Orr Creek Diversion Structure.docx

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ABBREVIATIONS AND ACRONYMS

%REC	percent recovery
ATL	Advanced Technology Laboratories, Inc.
CalEPA	California Environmental Protection Agency
CAM	California Assessment Manual
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CTR	California Toxics Rule
CWC	California Water Code
DI	deionized water
DQI	data quality indicators
DTSC	California Department of Toxic Substances Control
DTSC-SL	DTSC Screening Level
ELAP	Environmental Laboratory Accreditation Program
EPA	United States Environmental Protection Agency
ESL	environmental screening levels
H&K/NV5	Holdrege & Kull, an NV5 Company
MCL	Maximum Contaminant Level
MDL	method detection limit
mg/kg	milligrams per kilogram
MQO	measurement quality objective
MS	matrix spike
MSD	matrix spike duplicate
NID	Nevada Irrigation District
Non 15	Non Chapter 15 Program
NTR	National Toxics Rule
OEHHA	Office of Environmental Health Hazard Assessment
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyls
PQL	practical quantitation limit
RL	laboratory reporting limit
RPD	relative percent difference
RSL	Regional Screening Level
RWQCB	Regional Water Quality Control Board
SL	screening level
SVOC	semi-volatile organic compounds
SWRCB	State Water Resources Control Board
Title 22	Title 22 of the California Code of Regulations
TPH	total petroleum hydrocarbons
TTLC	Total Threshold Limit Concentration
USGS	United States Geological Survey
WDR	Waste Discharge Requirement

1 INTRODUCTION

On behalf of the Nevada Irrigation District (NID), Holdrege & Kull, an NV5 Company (H&K/NV5) prepared this report to summarize site investigation procedures and to present the results of sediment characterization associated with the Orr Creek Diversion Structure in Auburn, California.

The site investigation was performed in general accordance with H&K/NV5's scope of work in our *Proposal for Sediment Characterization, Orr Creek Diversion Structure* dated December 15, 2017.

1.1 PURPOSE

The purpose of H&K/NV5's investigation was to characterize sediment within the impoundment and to evaluate the approximate sediment volume to support permitting and sediment removal.

1.2 SITE DESCRIPTION

The investigation area consists of an approximately 1.8-acre impoundment. A location map and site map are presented as Figures 1 and 2, respectively. The site was accessed by traveling south on Highway 49, turning right onto Lorenson Lane and traveling approximately 0.5 miles, turning right onto Edwards Lane and traveling approximately 350 feet, and turning right onto a private driveway and traveling approximately 0.25 miles to the south side of the impoundment.

1.3 RATIONALE FOR SAMPLING STRATEGY

Two composite samples were prepared from a total of eight sediment sample locations within the impoundment. The two composite samples were analyzed for the organic and inorganic constituents, which are listed in Section 2. The surface area of the impoundment is approximately 80,000 square feet, and assuming an average sediment depth of 5 feet would yield approximately 15,000 cubic yards of sediment.

1.4 REGULATORY FRAMEWORK

The California EPA (CalEPA), including the State Water Resources Control Board (SWRCB) and the Department of Toxic Substances Control (DTSC), is responsible for protection of public health and the environment. The SWRCB and its nine Regional Water Quality Control Boards (RWQCBs) have the responsibility for the coordination and control of water quality, including the protection of the beneficial uses of the waters of the state. The site is located within the SWRCB's Central Valley Region. DTSC has the responsibility of managing the state's hazardous waste program to protect public health and the environment.

1.4.1 Water Quality

The regulatory framework governing protection of water quality in California is described in the Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California, which is also known as the State Implementation Policy (SWRCB 2005). Pursuant to the State Implementation Policy, the following water quality objectives and criteria are potentially applicable based on state and federal regulation.

Federal Water Quality Criteria

Federal water quality criteria are set forth in the National Toxics Rule (NTR; EPA 1995) and in the California Toxics Rule (CTR; EPA 2000), which is promulgated by the EPA in 40 CFR 131.38.

Basin Plan Objectives

Water quality objectives are identified in the Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San Joaquin River Basin (RWQCB 2016). The Basin Plan does not identify any existing and potential beneficial uses specifically for Orr Creek. However, the following existing and potential beneficial uses are defined for the downstream Sacramento River (Colusa Basin to the "I" Street Bridge):

- Municipal and domestic supply;
- Agricultural water supply;
- Water contact and non-contact recreation;
- Warm and cold freshwater habitat;
- Spawning, reproduction and/or early development of fish; and
- Wildlife habitat.

Water quality objectives corresponding to these beneficial uses include Maximum Contaminant Levels (MCLs) for drinking water specified in Title 22 of the California Code of Regulations (22 CCR), CTR values for protection of human health and aquatic life, and agricultural water quality objectives. The Basin Plan defines water quality objectives for metals as dissolved concentrations except for selenium, molybdenum, and boron, which are defined as total concentrations.

Ambient Water Quality Criteria

EPA ambient water quality recommended criteria and other criteria are commonly used by the RWQCB to interpret narrative objectives in the Basin Plan, such as Office of Environmental Health Hazard Assessment (OEHHA) fish consumption benchmarks, federal and state antidegradation requirements, and waterway-specific benchmarks.

Waste Disposal to Land

The California Water Code (CWC), Division 7, Chapter 4, Article 4, Sections 13260 through 13274, pertains to Waste Discharge Requirements (WDRs) issued by the RWQCB. State regulations pertaining to the treatment, storage, processing, or disposal of solid waste are found in California Code of Regulations (CCR) Title 27, beginning with Section 20005. Pursuant to Title 27 Section 20090, certain activities are exempt from Title 27.

The RWQCB Non Chapter 15 (Non 15) Program regulates point discharges that are exempt from Title 27 pursuant to Subsection 20090 and are not subject to the Federal Water Pollution Control Act. The Non 15 Program also regulates the discharge of wastes classified as inert pursuant to Section 20230 of Title 27. Section 20230 defines inert waste as solid waste that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives; and does not contain significant quantities of decomposable waste.

Inert wastes do not need to be discharged at classified waste disposal units, and the RWQCB can prescribe individual or general WDRs for discharges of inert wastes.

General Order for Maintenance Dredging (R5-2009-0085)

The General Order for Maintenance Dredging specifies general WDRs regulating maintenance dredging projects within the Central Valley Region that remove and/or place up to 100,000 cubic yards of material.

1.4.2 Human Health

Screening levels related to protection of human health in the case of routine, long term exposure by direct pathways (i.e., ingestion, inhalation and dermal contact) commonly include EPA Regional Screening Levels (RSLs) and DTSC Screening Levels (DTSC-SLs). For inorganics, background concentrations are also used as a basis for comparison.

RSLs and DTSC-SLs include inorganic constituent concentrations that are based on the protection of public health. In California, DTSC-SLs are commonly used in lieu of RSLs when DTSC uses toxicity criteria that are different than the toxicity criteria used by EPA.

The RSLs and DTSC-SLs are considered conservative. Under most circumstances, the presence of a chemical in media at concentrations less than the corresponding RSL or DTSC-SL can be assumed not to pose a significant, long-term (chronic) threat to human health. The presence of a chemical or inorganic constituent at a concentration in excess of a screening level does not necessarily indicate that adverse impacts to human health are occurring or will occur; however, further evaluation of potential human health concerns are generally appropriate if screening values are exceeded.

1.5 LIMITATIONS AND EXCEPTIONS

H&K/NV5 performed this work in accordance with present, regional, generally accepted standards of care. This report does not represent a legal opinion. No warranty, expressed or implied, including any implied warranty of merchantability or fitness for the purpose is made or intended in connection with the work.

The findings of this report are valid as of the present date. However, changes in the conditions of the property can occur with the passage of time. The changes may be due to natural processes or to the works of man, on the project site or adjacent properties. Changes in regulations, interpretations, and/or enforcement policies may occur at any time.

Concentrations detected in the samples collected during the site investigation may not be representative of conditions between the locations sampled. Other forms of contamination may be present within the site that the investigation did not detect. Professional judgment and interpretation are inherent in the process and uncertainty is inevitable. Therefore, the findings presented in this report may need to be revised based on the results of future sampling and analysis.

2 INVESTIGATION METHODOLOGY

H&K/NV5 performed the sediment sampling on January 17, 2018. The investigation methodology is summarized below and sample locations are depicted on Figure 2.

2.1 SEDIMENT SAMPLING

Sediment samples were collected as grab samples (independent, discrete samples) from eight locations (OC-SS-1 through OC-SS-8) within the impoundment using a boat and a hand-actuated slide hammer fitted with a 4-foot long, stainless steel sampling shoe lined with 2-inch diameter acetate sleeves. Discrete samples were then transferred to laboratory-supplied 8-ounce glass jars, placed in pre-chilled, thermally-insulated containers, and were transported to H&K/NV5's Nevada City office.

Discrete sediment samples OC-SS-1 through OC-SS-4 were composited at H&K/NV5's Nevada City laboratory in equal parts by weight to prepare composite sample OC-SS-1-4. Discrete sediment samples OC-SS-5 through OC-SS-8 were composited into sample OC-SS-5-8 using the same methodology. Samples were placed in a thermally-insulated container on wet ice and were transported to Advanced Technology Laboratories (ATL; Environmental Laboratory Accreditation Program [ELAP] certification number 1838) of Signal Hill, California.

Sample handling and shipment were performed under chain-of-custody documentation. Equipment decontamination procedures are described in the following section.

2.2 DECONTAMINATION

The laboratory testing program included analysis of organics and metals. Therefore, acetate sample liners were decontaminated by using a dilute laboratory-grade liquid soap (Liquinox™) and triple rinsing with de-ionized (DI) water. The steel sampling equipment was decontaminated before first use and between sample locations.

2.3 LABORATORY ANALYSIS

The laboratory testing program included analysis of the two composite sediment samples OC-SS-1-4 and OC-SS-5-8 for inorganics and organics as described in the following sections.

2.3.1 Inorganics Analysis

The composite sediment samples were analyzed for the heavy metals listed in the RWQCB General Order for Maintenance Dredging (R5-2009-0085), including total CAM 17 (Title 22) metals, total aluminum, and hexavalent chromium.

Table 2.3.1 – Laboratory Testing Program, Inorganics

Analysis	Method
Total CAM 17 (Title 22) Metals	EPA 6010B/7471A
Total Aluminum	EPA 6010B
Total Hexavalent Chromium	EPA 3060A/7199A

Notes:
CAM = California Assessment Manual
EPA = United States Environmental Protection Agency

2.3.2 Organics Analysis

Organics analysis consisted of semi-volatile organic compounds (SVOCs); total petroleum hydrocarbons (TPH) in the gas, diesel, and motor oil ranges; polychlorinated biphenyls (PCBs); and polycyclic aromatic hydrocarbons (PAHs), as summarized below.

Table 2.3.2 – Laboratory Testing Program, Organics

Analysis	Method
Semi-volatile organic compounds	EPA 8270C
TPH Gas, Diesel, Motor Oil	EPA 8015B
Polychlorinated biphenyls (PCBs)	EPA 8082
Polycyclic aromatic hydrocarbons (PAHs)	EPA 8310

Notes:
EPA = United States Environmental Protection Agency

3 DATA QUALITY OBJECTIVES

3.1 MEASUREMENT QUALITY OBJECTIVES

Measurement Quality Objectives (MQOs) are established for field and laboratory measurements to define criteria for calibration and quality control. MQOs are used to assess the viability and usability of data, considering the following Data Quality Indicators (DQIs): precision, accuracy, representativeness, completeness, comparability, and sensitivity.

3.1.1 Laboratory Measurement Quality Objectives

Sediment samples were submitted to ATL for analysis of inorganic and organic constituents. Laboratory MQOs are defined by ATL in the analytical laboratory report included in Appendix A.

3.2 DATA REVIEW AND VALIDATION

Field personnel were responsible for following H&K/NV5's sampling and documentation procedures to facilitate the collection of defensible and justifiable data. Responsibilities for data review and validation are outlined below:

- Field data review and validation was performed by Bryan Botsford, project geologist, and was overseen by Jason Muir, the project manager.
- Laboratory data review and validation were performed by a chemist or laboratory analyst as described in the laboratory quality assurance programs, as summarized in the laboratory reports (Appendix A). Data failing to meet the laboratory acceptance criteria were flagged with a qualifier identifying the associated problem in the laboratory report.
- Secondary validation for field data and review of laboratory quality control reports was performed by the project geologist.
- The project manager is responsible for overall verification and final approval of all data.

Procedures and criteria for review of laboratory data are summarized in the following sections.

3.2.1 Precision

H&K/NV5 assessed the precision of laboratory analysis by comparing the analytical results with matrix spike/matrix spike duplicate (MS/MSD) results for organic analysis, and laboratory duplicate results for inorganic analysis. For laboratory precision, H&K/NV5's general MQOs are:

- Relative percent difference (RPD) between duplicate blank spikes less than or equal to 20%.

- RPD between laboratory duplicate samples less than or equal to 30% for analyte concentrations greater than or equal to five times the method detection limit (MDL), and the absolute concentration difference less than or equal to the MDL for analyte concentrations less than five times the MDL.
- RPD between MSDs less than or equal to 40%.

ATL reported no RPD exceedances.

3.2.2 Accuracy

H&K/NV5 assessed the accuracy of laboratory results by reviewing method blank, reagent and preparation blank, MS/MSD, field blank, and bottle blank analytical results. The percent recovery (%REC or %R as shown in the following equation) of MS samples was calculated using the following equation:

$$\%R_i = \left(\frac{Y_i}{X_i}\right) \times 100$$

where:

$\%R_i$ = percent recovery for compound i

Y_i = measured analyte concentration in sample i (measured - original sample concentration)

X_i = known analyte concentration in sample i

For matrix spikes, the %REC calculation typically takes into account correcting the matrix spike concentration for the naturally occurring amounts (as measured in the unspiked sample). The calculation may be represented by the following equation:

$$\%R = \frac{(A - B)}{K} \times 100$$

where:

$\%R$ = percent recovery

A = measured value or concentration in the matrix spike

B = measured value or concentration in the unspiked sample

K = known or accepted/true value or concentration in the matrix spike without native amounts present

For laboratory accuracy, the MQOs are:

- Detections less than the RL for field blanks.
- Detections less than ½ the RL for laboratory blanks.
- %REC between 80 and 120%.

ATL duplicate recoveries outside of the acceptance criteria for matrix spike and matrix spike duplicate samples are summarized below. Laboratory quality control flags related

to percent recovery are summarized below. These flags did not signify a negative impact on data usability.

B8A0556-MS1

The matrix spike recovery was outside of the acceptance limits for lead, selenium, vanadium, and zinc for matrix spike B8A0556-MS1. The analytical batch was validated by the laboratory control sample.

B8A0556-MSD1

The matrix spike recovery was outside of the acceptance limits for antimony, barium, cadmium, selenium, and zinc for matrix spike duplicate B8A0556-MSD1. The analytical batch was validated by the laboratory control sample.

B8A0556-MSD2

The matrix spike recovery was outside of the acceptance limits for copper for matrix spike B8A0556-MSD2. The analytical batch was validated by the laboratory control sample.

B8A0560-MS1

The aluminum value in matrix spike sample B8A0560-MS1 was above the quantitation range and is therefore estimated.

B8A0560-MSD1

The aluminum value in matrix spike sample B8A0560-MSD1 was above the quantitation range and is therefore estimated.

B8A0609-BLK1

The surrogate recovery of 2-fluorophenol in blank sample B8A0609-BLK1 was above the laboratory acceptance limit. The analyte not was detected in the sample.

3.2.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent the characteristics of a population, variations in parameters at a sampling point, or an environmental condition that they are intended to represent. H&K/NV5 and the contract laboratories addressed the representativeness of data by consistent application of established field and laboratory procedures.

Sample holding times were verified and chain-of-custody forms were checked for completeness. Temperature of samples was measured upon receipt by the laboratory, when applicable. Laboratory blank samples were evaluated for the presence of contaminants. No significant discrepancies were identified.

3.2.4 Comparability

The comparability objective determines whether analytical conditions are sufficiently uniform for each analytical run to ensure that all reported data will be consistent. Comparability is addressed by using similar analytical methods from one investigation to the next.

3.2.5 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under normal conditions. H&K/NV5 considers the data set for this investigation to be complete.

3.2.6 Sensitivity

The laboratory MDL is the minimum concentration of an analyte that can be reliably distinguished from background noise for a specific analytical method. The reporting limit (RL), or practical quantitation limit (PQL), represents the lowest concentration of an analyte that can be accurately and reproducibly quantified in a sample matrix. The screening levels described in Section 3.2.2 are typically several times the MDL to allow for reproducibility. H&K/NV5 verified the sensitivity of laboratory analysis by comparing the RLs reported by the laboratory to the associated screening levels. The RL for arsenic exceeds the screening level for arsenic in residential soil (0.11 mg/kg) and commercial soil (0.36 mg/kg). The MDL for arsenic exceeds the screening level for arsenic in residential soil (0.11 mg/kg). H&K/NV5 does not expect these exceedances to significantly impact the investigation data, given that the concentrations of arsenic detected in samples OC-SS-1-4 and OC-SS-5-8 (6.8 mg/kg and 2.9 mg/kg, respectively) are within range of background conditions for the region, as described in Section 4.1.1.

4 INVESTIGATION RESULTS

Laboratory results for composite samples OC-SS-1-4 and OC-SS-5-8 are described below, and sample locations are depicted on Figure 2.

4.1 LABORATORY RESULTS

4.1.1 Inorganics Analysis

Results of total metals analysis are presented in Table 1. Laboratory reports and chain-of-custody documentation are presented in Appendix A. Total metals concentrations detected in the sediment samples are compared to the screening levels described in Section 3.2.2. The detected total metals concentrations are below the corresponding DTSC-SLs and RSLs for commercial and residential soil, with the exception of arsenic, as described below.

Total arsenic was detected in samples OC-SS-1-4 and OC-SS-5-8 at concentrations of 6.8 mg/kg and 2.9 mg/kg, respectively. These concentrations exceed the DTSC-SLs for residential soil (0.11 mg/kg) and commercial soil (0.36 mg/kg), but are within the range of background soil arsenic concentrations for the region (typically up to 17 mg/kg). The range of background soil arsenic concentrations was determined by H&K/NV5's statistical analysis of over 200 data points obtained by H&K/NV5 from sites in the region as part of DTSC's Voluntary Cleanup Program. Additional information regarding regional background concentrations can be provided upon request.

The total metals concentrations detected in the sediment samples are below the corresponding Total Threshold Limit Concentration (TTLC) values for designation of hazardous waste in California.

4.1.2 Organics Analysis

Organics analysis for samples OC-SS-1-4 and OC-SS-5-8 are summarized below.

- OC-SS-1-4 – Organic compounds analyzed for (VOCs, total petroleum hydrocarbons, PAHs, and PCBs) were not detected within sample OC-SS-1-4 at concentrations exceeding the laboratory reporting limits.
- OC-SS-5-8 - Petroleum hydrocarbons were detected in sample OC-SS-5-8 in the diesel and oil ranges at concentrations of 11 mg/kg and 16 mg/kg, respectively. These detected petroleum hydrocarbon concentrations are below the Tier 1 Environmental Screening Levels (ESLs) for diesel and motor oil in soil (100 milligrams per kilogram [mg/kg] and 5,100 mg/kg, respectively). Petroleum hydrocarbons in the gasoline range, PAHs, and PCBs were not detected at concentrations exceeding the laboratory reporting limits.

4.2 SEDIMENT DEPTH AND VOLUME

Total depth of sediment was not determined at all sampling locations. Based on the dam height, the maximum depth of sediment was estimated to be on the order of 15 feet. Assuming an average depth of 5 feet throughout the impoundment and considering an 80,000-square-foot surface area, the impoundment may contain approximately 15,000 cubic yards of sediment.

5 FINDINGS AND CONCLUSIONS

H&K/NV5's opinion is that the investigation was performed in general accordance with our proposal dated December 15, 2017.

The chemical characterization of the sediment did not detect total concentrations of organic or inorganic constituents that exceeded the corresponding human health screening levels, except for total arsenic, and the total arsenic concentrations were not notably elevated with respect to regional background conditions.

H&K/NV5 concludes that land disposal of the sediment is not likely to have a significant impact on human health or water quality provided that best management practices are implemented for erosion and sediment control. Depending upon the specific sediment management practices employed, surface water sampling and analysis may be required to meet specific permitting requirements.

6 REFERENCES

California Department of Toxic Substances Control (DTSC), 2016. Human Health Risk Assessment Note No. 3. Office of Human and Ecological Risk. DTSC recommended methodology for use of U.S. EPA Regional Screening Levels (RSLs) in the Human Health Risk Assessment process at hazardous waste sites and permitted facilities. January. Available online at https:// www.dtsc.ca.gov/assessingrisk/humanrisk2.cfm

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RWQCB, 2016. The Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San Joaquin River Basin. Central Valley Region. Fourth edition. October. Accessed online at http://www.waterboards.ca.gov/ centralvalley/water_issues/ basin_plans/

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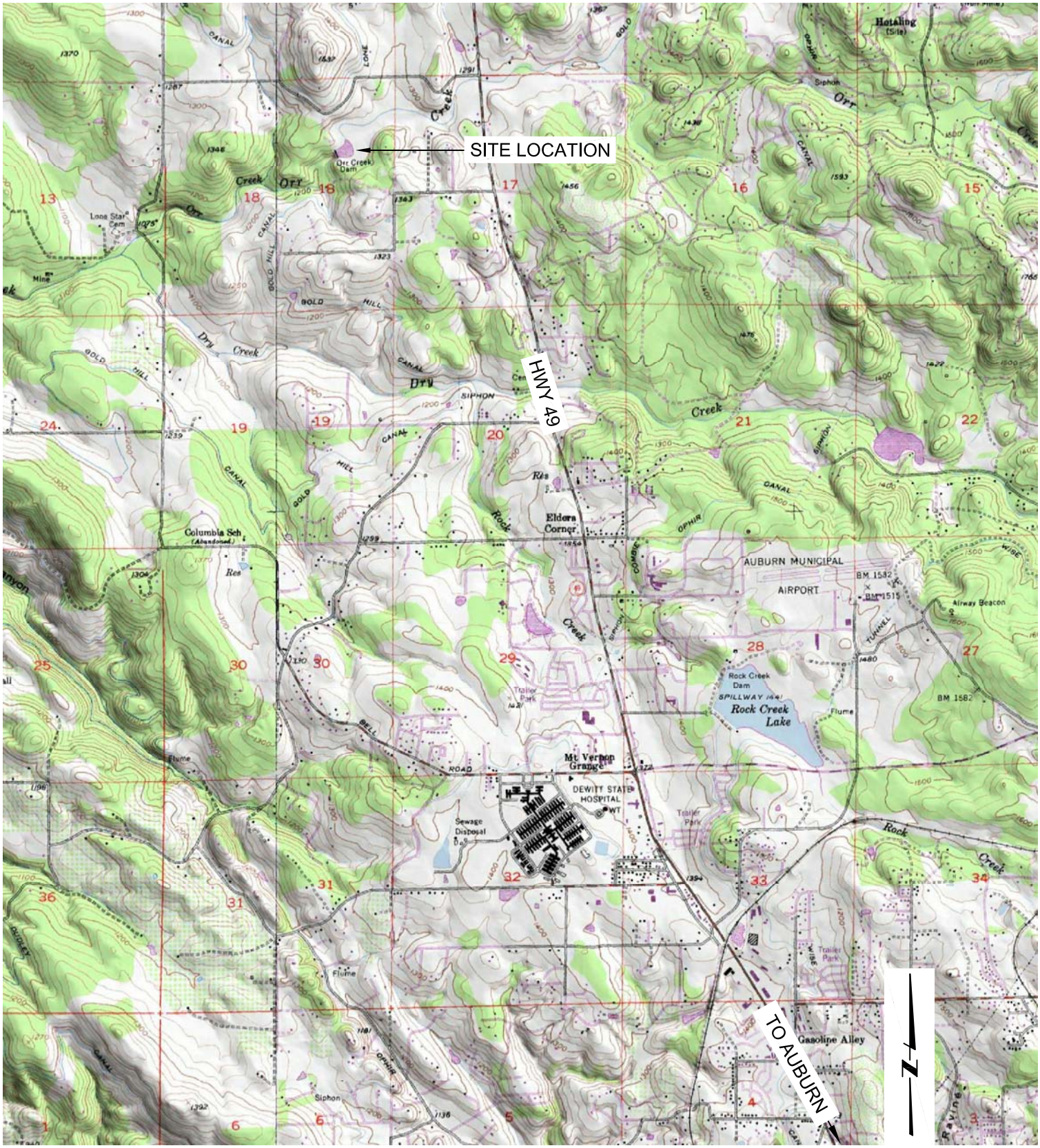
United States Environmental Protection Agency (USEPA), 2000. California Toxics Rule. United States Environmental Protection Agency, Region 9. Available online at http://www.epa.gov/region9/water/ctr/

United States Geological Survey (USGS), provisional edition, photo-revised 1981. 7.5-minute quadrangle map of Auburn, California

FIGURES



BASE MAP FROM USGS TOPOGRAPHIC QUADRANGLE MAP, AUBURN (PHOTOREVISED 1981)

HOLDREGE & KULL
CONSULTING ENGINEERS • GEOLOGISTS
An NV5 Company

LOCATION MAP

ORR CREEK DIVERSION STRUCTURE

PLACER COUNTY, CALIFORNIA

DRAWN BY:	BOTSFORD
CHECKED BY:	MUIR
H&K PROJECT:	5014-01
DATE:	FEBRUARY 2018

FIGURE 1

LEGEND

APPROXIMATE BOUNDARY OF IMPOUNDMENT

OC-SS-01 SEDIMENT SAMPLE LOCATION

N

0 FEET 100

SCALE

BASE MAP FROM GOOGLE EARTH, IMAGERY DATE AUGUST 2017

HOLDREGE & KULL
CONSULTING ENGINEERS • GEOLOGISTS
An NV5 Company

SITE MAP

ORR CREEK DIVERSION STRUCTURE

PLACER COUNTY, CALIFORNIA

DRAWN BY:	BOTSFORD
CHECKED BY:	MUIR
H&K PROJECT:	5014-01
DATE:	FEBRUARY 2018

FIGURE 2

TABLES

Table 1 - Total Metals in Sediment Samples
Orr Creek Diversion Structure
Placer County, California

Parameter	CAS No.	EPA Method	Unit	MDL	RL	Results		Benchmark Values			
						OC-SS-1-4	OC-SS-5-8	Residential Soil	Commercial Soil	Basis for Benchmark Value	TTLC
Date Sampled						*1/17/18*	*1/17/18*				
Aluminum	7429-90-5	6010B	mg/kg	2.7	25	8800	7800	*7.7E+04*	*1.1E+06*	*RSL*	*NE*
Antimony, metallic	7440-36-0	6010B	mg/kg	0.51	2	ND	ND	*31*	*470*	*RSL*	*500*
Arsenic, inorganic	7440-38-2	6010B	mg/kg	0.12	1	6.8	2.9	*0.11*	*0.36*	*DTSC-SL*	*500*
Barium	7440-39-3	6010B	mg/kg	0.12	1	55	54	*15,000*	*2.2E+05*	*RSL*	*10,000*
Beryllium and compounds	7440-41-7	6010B	mg/kg	0.03	1	ND	ND	*15*	*210*	*DTSC-SL*	*10,000*
Cadmium	7440-43-9	6010B	mg/kg	0.14	1	ND	ND	*5.2*	*7.3*	*DTSC-SL*	*100*
Chromium, total (1)	16065-83-1	6010B	mg/kg	0.26	1	27	22	*36,000*	*1.7E+05*	*DTSC-SL*	*2,500*
Cobalt	7440-48-4	6010B	mg/kg	0.07	1	10	7.9	*23*	*350*	*RSL*	*2,500*
Copper	7440-50-8	6010B	mg/kg	0.19	2	22	23	*3,100*	*47,000*	*RSL*	*18,000*
Hexavalent Chromium	18540-29-9	6010B	mg/kg	0.058	0.2	ND	ND	*0.3*	*6.3*	*RSL*	*500*
Lead and compounds	7439-92-1	6010B	mg/kg	0.18	1	4.9	4.1	*80*	*320*	*DTSC-SL*	*1,000*
Mercury, elemental	7439-97-6	7471A	mg/kg	0.005	0.1	0.15	0.10 J	*1.0*	*4.5*	*DTSC-SL*	*20*
Molybdenum	7439-98-7	6010B	mg/kg	0.12	1	0.42 J	ND	*390*	*5,800*	*RSL*	*3,500*
Nickel, soluble salts	7440-02-0	6010B	mg/kg	0.18	1	36	30	*490*	*3,100*	*DTSC-SL*	*2,000*
Selenium	7782-49-2	6010B	mg/kg	0.40	1	ND	ND	*390*	*5,800*	*RSL*	*100*
Silver	7440-22-4	6010B	mg/kg	0.12	1	ND	ND	*390*	*1,500*	*RSL*	*500*
Thallium, soluble salts	7440-28-0	6010B	mg/kg	0.38	1	ND	ND	*0.78*	*12*	*RSL*	*700*
Vanadium and compounds	7440-62-2	6010B	mg/kg	0.06	1	33	30	*390*	*1,000*	*DTSC-SL*	*2,400*
Zinc and compounds	7440-66-6	6010B	mg/kg	0.15	1	26	24	*23,000*	*3.5E+05*	*RSL*	*5,000*

Notes:
1 Total chromium (CAS No. 7440-47-3) results compared to RSLs for Chromium III (CAS No. 16065-83-1)
CAS = Chemical Abstracts Service registry number
DTSC-SL = California Department of Toxic Substances Control (DTSC) Screening Level (SL), as set forth in Human Health Risk Assessment (HHRA) Note 3 (DTSC; August 2017)
MDL = method detection limit
mg/kg = milligrams per kilogram
ND = not detected above listed MDL
RL = laboratory reporting limit
RSL = USEPA Region 9 Regional Screening Level
TTLC = total threshold limit concentration
NE = not established
J = analyte detected between MDL and RL, the value listed is estimated

APPENDIX A

Analytical Laboratory Reports and Chain-of-Custody Documentation

ADVANCED TECHNOLOGY LABORATORIES

January 29, 2018

Bryan Botsford
Holdrege & Kull, An NV5 Company
792 Searls Avenue
Nevada City, CA 95959
Tel: (530) 478-1305
Fax:(530) 478-1019

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1800272

Client Reference : ORR CREEK DIVERSION STRUCTURE, 5014-01

Enclosed are the results for sample(s) received on January 18, 2018 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
792 Searls Avenue	Report To : Bryan Botsford
Nevada City , CA 95959	Reported : 01/29/2018

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
OC-SS-1-4	1800272-01	Soil	1/17/18 0:00	1/18/18 9:44
OC-SS-5-8	1800272-02	Soil	1/17/18 0:00	1/18/18 9:44

CASE NARRATIVE

The samples for EPA 7199 (Hexavalent Chromium) analysis were subcontracted to Asset Laboratories with CA-ELAP Cert. 2676.

The samples for PAHs (EPA 8310) analysis were subcontracted to AETL with ELAP Cert.# 1541.

Results were J-flagged. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
792 Searls Avenue	Report To : Bryan Botsford
Nevada City , CA 95959	Reported : 01/29/2018

Client Sample ID OC-SS-1-4
Lab ID: 1800272-01

Percent Moisture

Analyst: DT

Analyte	Result (% by Weight)	PQL (% by Weight)	MDL % by Weight	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Percent Moisture	**45**	0.10	0.10	1	B8A0625	01/23/2018	01/24/18 08:56	

Total Metals by ICP-AES EPA 6010B

Analyst: go

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aluminum	**8800**	25	2.7	1	B8A0560	01/22/2018	01/23/18 11:43	

Title 22 Metals by ICP-AES EPA 6010B

Analyst: go

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	0.51	1	B8A0556	01/22/2018	01/23/18 11:07	
Arsenic	**6.8**	1.0	0.12	1	B8A0556	01/22/2018	01/23/18 11:07	
Barium	**55**	1.0	0.12	1	B8A0556	01/22/2018	01/23/18 11:07	
Beryllium	ND	1.0	0.03	1	B8A0556	01/22/2018	01/23/18 11:07	
Cadmium	ND	1.0	0.14	1	B8A0556	01/22/2018	01/23/18 11:07	
Chromium	**27**	1.0	0.26	1	B8A0556	01/22/2018	01/23/18 11:07	
Cobalt	**10**	1.0	0.07	1	B8A0556	01/22/2018	01/23/18 11:07	
Copper	**22**	2.0	0.19	1	B8A0556	01/22/2018	01/23/18 11:07	
Lead	**4.9**	1.0	0.18	1	B8A0556	01/22/2018	01/23/18 11:07	
Molybdenum	**0.42**	1.0	0.12	1	B8A0556	01/22/2018	01/23/18 11:07	J
Nickel	**36**	1.0	0.18	1	B8A0556	01/22/2018	01/23/18 11:07	
Selenium	ND	1.0	0.40	1	B8A0556	01/22/2018	01/23/18 11:07	
Silver	ND	1.0	0.12	1	B8A0556	01/22/2018	01/23/18 11:07	
Thallium	ND	1.0	0.38	1	B8A0556	01/22/2018	01/23/18 11:07	
Vanadium	**33**	1.0	0.06	1	B8A0556	01/22/2018	01/23/18 11:07	
Zinc	**26**	1.0	0.15	1	B8A0556	01/22/2018	01/23/18 11:07	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: VV

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.15**	0.10	0.005	1	B8A0559	01/22/2018	01/23/18 11:25	

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
792 Searls Avenue	Report To : Bryan Botsford
Nevada City , CA 95959	Reported : 01/29/2018

Client Sample ID OC-SS-1-4

Lab ID: 1800272-01

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	0.20	1	B8A0493	01/19/2018	01/19/18 18:25	
Surrogate: 4-Bromofluorobenzene	*103 %*	*50 - 138*			B8A0493	01/19/2018	*01/19/18 18:25*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	10	10	1	B8A0510	01/19/2018	01/19/18 19:11	
ORO	ND	10	10	1	B8A0510	01/19/2018	01/19/18 19:11	
Surrogate: p-Terphenyl	*104 %*	*22 - 143*			B8A0510	01/19/2018	*01/19/18 19:11*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 13:59	
Aroclor 1221	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 13:59	
Aroclor 1232	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 13:59	
Aroclor 1242	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 13:59	
Aroclor 1248	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 13:59	
Aroclor 1254	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 13:59	
Aroclor 1260	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 13:59	
Aroclor 1262	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 13:59	
Aroclor 1268	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 13:59	
Surrogate: Decachlorobiphenyl	*78.2 %*	*18 - 136*			B8A0608	01/23/2018	*01/23/18 13:59*	
Surrogate: Tetrachloro-m-xylene	*74.1 %*	*30 - 130*			B8A0608	01/23/2018	*01/23/18 13:59*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	71	1	B8A0609	01/23/2018	01/23/18 14:56	
1,2-Dichlorobenzene	ND	330	60	1	B8A0609	01/23/2018	01/23/18 14:56	
1,3-Dichlorobenzene	ND	330	65	1	B8A0609	01/23/2018	01/23/18 14:56	
1,4-Dichlorobenzene	ND	330	60	1	B8A0609	01/23/2018	01/23/18 14:56	
2,4,5-Trichlorophenol	ND	330	61	1	B8A0609	01/23/2018	01/23/18 14:56	

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
792 Searls Avenue	Report To : Bryan Botsford
Nevada City , CA 95959	Reported : 01/29/2018

Client Sample ID OC-SS-1-4

Lab ID: 1800272-01

Semivolatile Organic Compounds by EPA 8270C **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2,4,6-Trichlorophenol	ND	330	220	1	B8A0609	01/23/2018	01/23/18 14:56	
2,4-Dichlorophenol	ND	1600	120	1	B8A0609	01/23/2018	01/23/18 14:56	
2,4-Dimethylphenol	ND	330	120	1	B8A0609	01/23/2018	01/23/18 14:56	
2,4-Dinitrophenol	ND	1600	86	1	B8A0609	01/23/2018	01/23/18 14:56	
2,4-Dinitrotoluene	ND	330	46	1	B8A0609	01/23/2018	01/23/18 14:56	
2,6-Dinitrotoluene	ND	330	49	1	B8A0609	01/23/2018	01/23/18 14:56	
2-Chloronaphthalene	ND	330	59	1	B8A0609	01/23/2018	01/23/18 14:56	
2-Chlorophenol	ND	330	120	1	B8A0609	01/23/2018	01/23/18 14:56	
2-Methylnaphthalene	ND	330	67	1	B8A0609	01/23/2018	01/23/18 14:56	
2-Methylphenol	ND	330	67	1	B8A0609	01/23/2018	01/23/18 14:56	
2-Nitroaniline	ND	1600	200	1	B8A0609	01/23/2018	01/23/18 14:56	
2-Nitrophenol	ND	330	110	1	B8A0609	01/23/2018	01/23/18 14:56	
3,3´-Dichlorobenzidine	ND	660	280	1	B8A0609	01/23/2018	01/23/18 14:56	
3-Nitroaniline	ND	1600	44	1	B8A0609	01/23/2018	01/23/18 14:56	
4,6-Dinitro-2-methyphenol	ND	1600	300	1	B8A0609	01/23/2018	01/23/18 14:56	
4-Bromophenyl-phenylether	ND	330	50	1	B8A0609	01/23/2018	01/23/18 14:56	
4-Chloro-3-methylphenol	ND	660	110	1	B8A0609	01/23/2018	01/23/18 14:56	
4-Chloroaniline	ND	660	53	1	B8A0609	01/23/2018	01/23/18 14:56	
4-Chlorophenyl-phenylether	ND	330	48	1	B8A0609	01/23/2018	01/23/18 14:56	
4-Methylphenol	ND	330	66	1	B8A0609	01/23/2018	01/23/18 14:56	
4-Nitroaniline	ND	1600	290	1	B8A0609	01/23/2018	01/23/18 14:56	
4-Nitrophenol	ND	330	150	1	B8A0609	01/23/2018	01/23/18 14:56	
Acenaphthene	ND	330	48	1	B8A0609	01/23/2018	01/23/18 14:56	
Acenaphthylene	ND	330	51	1	B8A0609	01/23/2018	01/23/18 14:56	
Anthracene	ND	330	49	1	B8A0609	01/23/2018	01/23/18 14:56	
Benzidine (M)	ND	1600	1400	1	B8A0609	01/23/2018	01/23/18 14:56	
Benzo(a)anthracene	ND	330	39	1	B8A0609	01/23/2018	01/23/18 14:56	
Benzo(a)pyrene	ND	330	45	1	B8A0609	01/23/2018	01/23/18 14:56	
Benzo(b)fluoranthene	ND	330	55	1	B8A0609	01/23/2018	01/23/18 14:56	
Benzo(g,h,i)perylene	ND	330	38	1	B8A0609	01/23/2018	01/23/18 14:56	
Benzo(k)fluoranthene	ND	330	52	1	B8A0609	01/23/2018	01/23/18 14:56	
Benzoic acid	ND	1600	890	1	B8A0609	01/23/2018	01/23/18 14:56	
Benzyl alcohol	ND	660	67	1	B8A0609	01/23/2018	01/23/18 14:56	
bis(2-chloroethoxy)methane	ND	330	59	1	B8A0609	01/23/2018	01/23/18 14:56	
bis(2-Chloroethyl)ether	ND	330	57	1	B8A0609	01/23/2018	01/23/18 14:56	
bis(2-chloroisopropyl)ether	ND	330	65	1	B8A0609	01/23/2018	01/23/18 14:56	
bis(2-ethylhexyl)phthalate	ND	330	83	1	B8A0609	01/23/2018	01/23/18 14:56	

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
792 Searls Avenue	Report To : Bryan Botsford
Nevada City , CA 95959	Reported : 01/29/2018

Client Sample ID OC-SS-1-4

Lab ID: 1800272-01

Semivolatile Organic Compounds by EPA 8270C **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Butylbenzylphthalate	ND	330	250	1	B8A0609	01/23/2018	01/23/18 14:56	
Chrysene	ND	330	43	1	B8A0609	01/23/2018	01/23/18 14:56	
Di-n-butylphthalate	ND	330	230	1	B8A0609	01/23/2018	01/23/18 14:56	
Di-n-octylphthalate	ND	330	48	1	B8A0609	01/23/2018	01/23/18 14:56	
Dibenz(a,h)anthracene	ND	330	43	1	B8A0609	01/23/2018	01/23/18 14:56	
Dibenzofuran	ND	330	55	1	B8A0609	01/23/2018	01/23/18 14:56	
Diethyl phthalate	ND	330	47	1	B8A0609	01/23/2018	01/23/18 14:56	
Dimethyl phthalate	ND	330	46	1	B8A0609	01/23/2018	01/23/18 14:56	
Fluoranthene	ND	330	47	1	B8A0609	01/23/2018	01/23/18 14:56	
Fluorene	ND	330	49	1	B8A0609	01/23/2018	01/23/18 14:56	
Hexachlorobenzene	ND	330	41	1	B8A0609	01/23/2018	01/23/18 14:56	
Hexachlorobutadiene	ND	660	61	1	B8A0609	01/23/2018	01/23/18 14:56	
Hexachlorocyclopentadiene	ND	660	64	1	B8A0609	01/23/2018	01/23/18 14:56	
Hexachloroethane	ND	330	71	1	B8A0609	01/23/2018	01/23/18 14:56	
Indeno(1,2,3-cd)pyrene	ND	330	44	1	B8A0609	01/23/2018	01/23/18 14:56	
Isophorone	ND	330	57	1	B8A0609	01/23/2018	01/23/18 14:56	
N-Nitroso-di-n propylamine	ND	330	65	1	B8A0609	01/23/2018	01/23/18 14:56	
N-Nitrosodiphenylamine	ND	330	48	1	B8A0609	01/23/2018	01/23/18 14:56	
Naphthalene	ND	330	60	1	B8A0609	01/23/2018	01/23/18 14:56	
Nitrobenzene	ND	330	67	1	B8A0609	01/23/2018	01/23/18 14:56	
Pentachlorophenol	ND	1600	190	1	B8A0609	01/23/2018	01/23/18 14:56	
Phenanthrene	ND	330	46	1	B8A0609	01/23/2018	01/23/18 14:56	
Phenol	ND	330	130	1	B8A0609	01/23/2018	01/23/18 14:56	
Pyrene	ND	330	53	1	B8A0609	01/23/2018	01/23/18 14:56	
Pyridine	ND	1600	270	1	B8A0609	01/23/2018	01/23/18 14:56	
Surrogate: 1,2-Dichlorobenzene-d4	*55.0 %*		*38 - 93*		B8A0609	01/23/2018	*01/23/18 14:56*	
Surrogate: 2,4,6-Tribromophenol	*89.7 %*		*27 - 124*		B8A0609	01/23/2018	*01/23/18 14:56*	
Surrogate: 2-Chlorophenol-d4	*60.5 %*		*36 - 96*		B8A0609	01/23/2018	*01/23/18 14:56*	
Surrogate: 2-Fluorobiphenyl	*70.7 %*		*44 - 100*		B8A0609	01/23/2018	*01/23/18 14:56*	
Surrogate: 2-Fluorophenol	*67.3 %*		*32 - 89*		B8A0609	01/23/2018	*01/23/18 14:56*	
Surrogate: 4-Terphenyl-d14	*86.1 %*		*49 - 123*		B8A0609	01/23/2018	*01/23/18 14:56*	
Surrogate: Nitrobenzene-d5	*71.4 %*		*38 - 104*		B8A0609	01/23/2018	*01/23/18 14:56*	
Surrogate: Phenol-d5	*57.8 %*		*35 - 95*		B8A0609	01/23/2018	*01/23/18 14:56*	

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
792 Searls Avenue	Report To : Bryan Botsford
Nevada City , CA 95959	Reported : 01/29/2018

Client Sample ID OC-SS-5-8
Lab ID: 1800272-02

Percent Moisture

Analyst: DT

Analyte	Result (% by Weight)	PQL (% by Weight)	MDL % by Weight	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Percent Moisture	**38**	0.10	0.10	1	B8A0625	01/23/2018	01/24/18 08:56	

Total Metals by ICP-AES EPA 6010B

Analyst: go

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aluminum	**7800**	25	2.7	1	B8A0560	01/22/2018	01/23/18 11:46	

Title 22 Metals by ICP-AES EPA 6010B

Analyst: go

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	2.0	0.51	1	B8A0556	01/22/2018	01/23/18 11:08	
Arsenic	**2.9**	1.0	0.12	1	B8A0556	01/22/2018	01/23/18 11:08	
Barium	**54**	1.0	0.12	1	B8A0556	01/22/2018	01/23/18 11:08	
Beryllium	ND	1.0	0.03	1	B8A0556	01/22/2018	01/23/18 11:08	
Cadmium	ND	1.0	0.14	1	B8A0556	01/22/2018	01/23/18 11:08	
Chromium	**22**	1.0	0.26	1	B8A0556	01/22/2018	01/23/18 11:08	
Cobalt	**7.9**	1.0	0.07	1	B8A0556	01/22/2018	01/23/18 11:08	
Copper	**23**	2.0	0.19	1	B8A0556	01/22/2018	01/23/18 11:08	
Lead	**4.1**	1.0	0.18	1	B8A0556	01/22/2018	01/23/18 11:08	
Molybdenum	ND	1.0	0.12	1	B8A0556	01/22/2018	01/23/18 11:08	
Nickel	**30**	1.0	0.18	1	B8A0556	01/22/2018	01/23/18 11:08	
Selenium	ND	1.0	0.40	1	B8A0556	01/22/2018	01/23/18 11:08	
Silver	ND	1.0	0.12	1	B8A0556	01/22/2018	01/23/18 11:08	
Thallium	ND	1.0	0.38	1	B8A0556	01/22/2018	01/23/18 11:08	
Vanadium	**30**	1.0	0.06	1	B8A0556	01/22/2018	01/23/18 11:08	
Zinc	**24**	1.0	0.15	1	B8A0556	01/22/2018	01/23/18 11:08	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: VV

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	**0.10**	0.10	0.005	1	B8A0559	01/22/2018	01/23/18 11:30	J

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
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Client Sample ID OC-SS-5-8

Lab ID: 1800272-02

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	0.20	1	B8A0493	01/19/2018	01/19/18 18:44	
Surrogate: 4-Bromofluorobenzene	*101 %*	*50 - 138*			B8A0493	01/19/2018	*01/19/18 18:44*	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	**11**	10	10	1	B8A0510	01/19/2018	01/19/18 20:03	
ORO	**16**	10	10	1	B8A0510	01/19/2018	01/19/18 20:03	
Surrogate: p-Terphenyl	*107 %*	*22 - 143*			B8A0510	01/19/2018	*01/19/18 20:03*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 14:18	
Aroclor 1221	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 14:18	
Aroclor 1232	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 14:18	
Aroclor 1242	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 14:18	
Aroclor 1248	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 14:18	
Aroclor 1254	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 14:18	
Aroclor 1260	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 14:18	
Aroclor 1262	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 14:18	
Aroclor 1268	ND	16	4.6	1	B8A0608	01/23/2018	01/23/18 14:18	
Surrogate: Decachlorobiphenyl	*87.2 %*	*18 - 136*			B8A0608	01/23/2018	*01/23/18 14:18*	
Surrogate: Tetrachloro-m-xylene	*83.1 %*	*30 - 130*			B8A0608	01/23/2018	*01/23/18 14:18*	

Semivolatile Organic Compounds by EPA 8270C

Analyst: SP

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,4-Trichlorobenzene	ND	330	71	1	B8A0609	01/23/2018	01/23/18 15:29	
1,2-Dichlorobenzene	ND	330	60	1	B8A0609	01/23/2018	01/23/18 15:29	
1,3-Dichlorobenzene	ND	330	65	1	B8A0609	01/23/2018	01/23/18 15:29	
1,4-Dichlorobenzene	ND	330	60	1	B8A0609	01/23/2018	01/23/18 15:29	
2,4,5-Trichlorophenol	ND	330	61	1	B8A0609	01/23/2018	01/23/18 15:29	

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
792 Searls Avenue	Report To : Bryan Botsford
Nevada City , CA 95959	Reported : 01/29/2018

Client Sample ID OC-SS-5-8

Lab ID: 1800272-02

Semivolatile Organic Compounds by EPA 8270C **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2,4,6-Trichlorophenol	ND	330	220	1	B8A0609	01/23/2018	01/23/18 15:29	
2,4-Dichlorophenol	ND	1600	120	1	B8A0609	01/23/2018	01/23/18 15:29	
2,4-Dimethylphenol	ND	330	120	1	B8A0609	01/23/2018	01/23/18 15:29	
2,4-Dinitrophenol	ND	1600	86	1	B8A0609	01/23/2018	01/23/18 15:29	
2,4-Dinitrotoluene	ND	330	46	1	B8A0609	01/23/2018	01/23/18 15:29	
2,6-Dinitrotoluene	ND	330	49	1	B8A0609	01/23/2018	01/23/18 15:29	
2-Chloronaphthalene	ND	330	59	1	B8A0609	01/23/2018	01/23/18 15:29	
2-Chlorophenol	ND	330	120	1	B8A0609	01/23/2018	01/23/18 15:29	
2-Methylnaphthalene	ND	330	67	1	B8A0609	01/23/2018	01/23/18 15:29	
2-Methylphenol	ND	330	67	1	B8A0609	01/23/2018	01/23/18 15:29	
2-Nitroaniline	ND	1600	200	1	B8A0609	01/23/2018	01/23/18 15:29	
2-Nitrophenol	ND	330	110	1	B8A0609	01/23/2018	01/23/18 15:29	
3,3´-Dichlorobenzidine	ND	660	280	1	B8A0609	01/23/2018	01/23/18 15:29	
3-Nitroaniline	ND	1600	44	1	B8A0609	01/23/2018	01/23/18 15:29	
4,6-Dinitro-2-methyphenol	ND	1600	300	1	B8A0609	01/23/2018	01/23/18 15:29	
4-Bromophenyl-phenylether	ND	330	50	1	B8A0609	01/23/2018	01/23/18 15:29	
4-Chloro-3-methylphenol	ND	660	110	1	B8A0609	01/23/2018	01/23/18 15:29	
4-Chloroaniline	ND	660	53	1	B8A0609	01/23/2018	01/23/18 15:29	
4-Chlorophenyl-phenylether	ND	330	48	1	B8A0609	01/23/2018	01/23/18 15:29	
4-Methylphenol	ND	330	66	1	B8A0609	01/23/2018	01/23/18 15:29	
4-Nitroaniline	ND	1600	290	1	B8A0609	01/23/2018	01/23/18 15:29	
4-Nitrophenol	ND	330	150	1	B8A0609	01/23/2018	01/23/18 15:29	
Acenaphthene	ND	330	48	1	B8A0609	01/23/2018	01/23/18 15:29	
Acenaphthylene	ND	330	51	1	B8A0609	01/23/2018	01/23/18 15:29	
Anthracene	ND	330	49	1	B8A0609	01/23/2018	01/23/18 15:29	
Benzidine (M)	ND	1600	1400	1	B8A0609	01/23/2018	01/23/18 15:29	
Benzo(a)anthracene	ND	330	39	1	B8A0609	01/23/2018	01/23/18 15:29	
Benzo(a)pyrene	ND	330	45	1	B8A0609	01/23/2018	01/23/18 15:29	
Benzo(b)fluoranthene	ND	330	55	1	B8A0609	01/23/2018	01/23/18 15:29	
Benzo(g,h,i)perylene	ND	330	38	1	B8A0609	01/23/2018	01/23/18 15:29	
Benzo(k)fluoranthene	ND	330	52	1	B8A0609	01/23/2018	01/23/18 15:29	
Benzoic acid	ND	1600	890	1	B8A0609	01/23/2018	01/23/18 15:29	
Benzyl alcohol	ND	660	67	1	B8A0609	01/23/2018	01/23/18 15:29	
bis(2-chloroethoxy)methane	ND	330	59	1	B8A0609	01/23/2018	01/23/18 15:29	
bis(2-Chloroethyl)ether	ND	330	57	1	B8A0609	01/23/2018	01/23/18 15:29	
bis(2-chloroisopropyl)ether	ND	330	65	1	B8A0609	01/23/2018	01/23/18 15:29	
bis(2-ethylhexyl)phthalate	ND	330	83	1	B8A0609	01/23/2018	01/23/18 15:29	

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
792 Searls Avenue	Report To : Bryan Botsford
Nevada City , CA 95959	Reported : 01/29/2018

Client Sample ID OC-SS-5-8

Lab ID: 1800272-02

Semivolatile Organic Compounds by EPA 8270C **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Butylbenzylphthalate	ND	330	250	1	B8A0609	01/23/2018	01/23/18 15:29	
Chrysene	ND	330	43	1	B8A0609	01/23/2018	01/23/18 15:29	
Di-n-butylphthalate	ND	330	230	1	B8A0609	01/23/2018	01/23/18 15:29	
Di-n-octylphthalate	ND	330	48	1	B8A0609	01/23/2018	01/23/18 15:29	
Dibenz(a,h)anthracene	ND	330	43	1	B8A0609	01/23/2018	01/23/18 15:29	
Dibenzofuran	ND	330	55	1	B8A0609	01/23/2018	01/23/18 15:29	
Diethyl phthalate	ND	330	47	1	B8A0609	01/23/2018	01/23/18 15:29	
Dimethyl phthalate	ND	330	46	1	B8A0609	01/23/2018	01/23/18 15:29	
Fluoranthene	ND	330	47	1	B8A0609	01/23/2018	01/23/18 15:29	
Fluorene	ND	330	49	1	B8A0609	01/23/2018	01/23/18 15:29	
Hexachlorobenzene	ND	330	41	1	B8A0609	01/23/2018	01/23/18 15:29	
Hexachlorobutadiene	ND	660	61	1	B8A0609	01/23/2018	01/23/18 15:29	
Hexachlorocyclopentadiene	ND	660	64	1	B8A0609	01/23/2018	01/23/18 15:29	
Hexachloroethane	ND	330	71	1	B8A0609	01/23/2018	01/23/18 15:29	
Indeno(1,2,3-cd)pyrene	ND	330	44	1	B8A0609	01/23/2018	01/23/18 15:29	
Isophorone	ND	330	57	1	B8A0609	01/23/2018	01/23/18 15:29	
N-Nitroso-di-n propylamine	ND	330	65	1	B8A0609	01/23/2018	01/23/18 15:29	
N-Nitrosodiphenylamine	ND	330	48	1	B8A0609	01/23/2018	01/23/18 15:29	
Naphthalene	ND	330	60	1	B8A0609	01/23/2018	01/23/18 15:29	
Nitrobenzene	ND	330	67	1	B8A0609	01/23/2018	01/23/18 15:29	
Pentachlorophenol	ND	1600	190	1	B8A0609	01/23/2018	01/23/18 15:29	
Phenanthrene	ND	330	46	1	B8A0609	01/23/2018	01/23/18 15:29	
Phenol	ND	330	130	1	B8A0609	01/23/2018	01/23/18 15:29	
Pyrene	ND	330	53	1	B8A0609	01/23/2018	01/23/18 15:29	
Pyridine	ND	1600	270	1	B8A0609	01/23/2018	01/23/18 15:29	
Surrogate: 1,2-Dichlorobenzene-d4	*53.1 %*		*38 - 93*		B8A0609	01/23/2018	*01/23/18 15:29*	
Surrogate: 2,4,6-Tribromophenol	*85.7 %*		*27 - 124*		B8A0609	01/23/2018	*01/23/18 15:29*	
Surrogate: 2-Chlorophenol-d4	*58.0 %*		*36 - 96*		B8A0609	01/23/2018	*01/23/18 15:29*	
Surrogate: 2-Fluorobiphenyl	*65.0 %*		*44 - 100*		B8A0609	01/23/2018	*01/23/18 15:29*	
Surrogate: 2-Fluorophenol	*64.3 %*		*32 - 89*		B8A0609	01/23/2018	*01/23/18 15:29*	
Surrogate: 4-Terphenyl-d14	*82.4 %*		*49 - 123*		B8A0609	01/23/2018	*01/23/18 15:29*	
Surrogate: Nitrobenzene-d5	*69.2 %*		*38 - 104*		B8A0609	01/23/2018	*01/23/18 15:29*	
Surrogate: Phenol-d5	*54.2 %*		*35 - 95*		B8A0609	01/23/2018	*01/23/18 15:29*	

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
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QUALITY CONTROL SECTION

Percent Moisture - Quality Control

Analyte	Result % by Weight	PQL % by Weight	MDL % by Weight	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0625 - No_Prep_WC1_S										
Duplicate (B8A0625-DUP1)			**Source: 1800310-08**		Prepared: 1/23/2018 Analyzed: 1/24/2018					
Percent Moisture	17.5264	0.10	0.10		16.9624			3.27	30	

Certificate of Analysis

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Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0560 - EPA 3050B_S										
Blank (B8A0560-BLK1)					Prepared: 1/22/2018 Analyzed: 1/23/2018					
Aluminum	3.30586	25	2.7							J
LCS (B8A0560-BS1)					Prepared: 1/22/2018 Analyzed: 1/23/2018					
Aluminum	983.120	25	2.7	1000.00		98.3	80 - 120			
Matrix Spike (B8A0560-MS1)			**Source: 1800266-01**		Prepared: 1/22/2018 Analyzed: 1/23/2018					
Aluminum	17417.4	25	2.7	1000.00	15919.7	150	0 - 257			E
Matrix Spike Dup (B8A0560-MSD1)			**Source: 1800266-01**		Prepared: 1/22/2018 Analyzed: 1/23/2018					
Aluminum	17225.0	25	2.7	1000.00	15919.7	131	0 - 257	1.11	20	E

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Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
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Title 22 Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0556 - EPA 3050B_S										
Blank (B8A0556-BLK1)					Prepared: 1/22/2018 Analyzed: 1/23/2018					
Antimony	ND	2.0	0.51							
Arsenic	ND	1.0	0.12							
Barium	ND	1.0	0.12							
Beryllium	0.037308	1.0	0.03							J
Cadmium	ND	1.0	0.14							
Chromium	ND	1.0	0.26							
Cobalt	0.076915	1.0	0.07							J
Copper	ND	2.0	0.19							
Lead	ND	1.0	0.18							
Molybdenum	0.171447	1.0	0.12							J
Nickel	ND	1.0	0.18							
Selenium	ND	1.0	0.40							
Silver	ND	1.0	0.12							
Thallium	ND	1.0	0.38							
Vanadium	0.086010	1.0	0.06							J
Zinc	0.222422	1.0	0.15							J
LCS (B8A0556-BS1)					Prepared: 1/22/2018 Analyzed: 1/23/2018					
Antimony	45.1628	2.0	0.51	50.0000		90.3	80 - 120			
Arsenic	42.9966	1.0	0.12	50.0000		86.0	80 - 120			
Barium	47.4758	1.0	0.12	50.0000		95.0	80 - 120			
Beryllium	45.0410	1.0	0.03	50.0000		90.1	80 - 120			
Cadmium	43.5594	1.0	0.14	50.0000		87.1	80 - 120			
Chromium	45.7744	1.0	0.26	50.0000		91.5	80 - 120			
Cobalt	46.9828	1.0	0.07	50.0000		94.0	80 - 120			
Copper	48.4726	2.0	0.19	50.0000		96.9	80 - 120			
Lead	44.3240	1.0	0.18	50.0000		88.6	80 - 120			
Molybdenum	46.0537	1.0	0.12	50.0000		92.1	80 - 120			
Nickel	45.5874	1.0	0.18	50.0000		91.2	80 - 120			
Selenium	41.9426	1.0	0.40	50.0000		83.9	80 - 120			
Silver	45.4167	1.0	0.12	50.0000		90.8	80 - 120			
Thallium	45.2583	1.0	0.38	50.0000		90.5	80 - 120			
Vanadium	47.5221	1.0	0.06	50.0000		95.0	80 - 120			
Zinc	43.4599	1.0	0.15	50.0000		86.9	80 - 120			
Matrix Spike (B8A0556-MS1)				**Source: 1800262-01**	Prepared: 1/22/2018 Analyzed: 1/23/2018					
Antimony	34.8840	2.0	0.51	125.000	ND	27.9	33 - 98			M1
Arsenic	83.5468	1.0	0.12	125.000	12.3338	57.0	48 - 101			
Barium	457.689	1.0	0.12	125.000	470.333	-10.1	25 - 131			M1
Beryllium	71.0201	1.0	0.03	125.000	ND	56.8	56 - 97			
Cadmium	61.2380	1.0	0.14	125.000	0.526489	48.6	53 - 94			M1
Chromium	90.0358	1.0	0.26	125.000	25.3776	51.7	45 - 113			

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Title 22 Metals by ICP-AES EPA 6010B - Quality Control (cont'd)

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0556 - EPA 3050B_S (continued)										
Matrix Spike (B8A0556-MS1) - Continued			**Source: 1800262-01**			Prepared: 1/22/2018 Analyzed: 1/23/2018				
Cobalt	83.0198	1.0	0.07	125.000	13.4121	55.7	51 - 97			
Lead	141.690	1.0	0.18	125.000	106.642	28.0	33 - 127			M1
Molybdenum	70.2134	1.0	0.12	125.000	0.802110	55.5	54 - 97			
Nickel	80.5890	1.0	0.18	125.000	14.2951	53.0	46 - 102			
Selenium	55.8006	1.0	0.40	125.000	ND	44.6	52 - 93			M1
Silver	80.0563	1.0	0.12	125.000	ND	64.0	58 - 98			
Thallium	61.0896	1.0	0.38	125.000	ND	48.9	46 - 93			
Vanadium	104.144	1.0	0.06	125.000	36.3498	54.2	55 - 104			M1
Zinc	421.716	1.0	0.15	125.000	444.270	-18.0	26 - 118			M1
Matrix Spike (B8A0556-MS2)			**Source: 1800262-01**			Prepared: 1/22/2018 Analyzed: 1/23/2018				
Copper	1343.40	4.0	0.38	125.000	1217.45	101	51 - 113			
Matrix Spike Dup (B8A0556-MSD1)			**Source: 1800262-01**			Prepared: 1/22/2018 Analyzed: 1/23/2018				
Antimony	37.2499	2.0	0.51	125.000	ND	29.8	33 - 98	6.56	20	M1
Arsenic	85.9418	1.0	0.12	125.000	12.3338	58.9	48 - 101	2.83	20	
Barium	480.578	1.0	0.12	125.000	470.333	8.20	25 - 131	4.88	20	M1
Beryllium	72.1576	1.0	0.03	125.000	ND	57.7	56 - 97	1.59	20	
Cadmium	63.0268	1.0	0.14	125.000	0.526489	50.0	53 - 94	2.88	20	M1
Chromium	90.9963	1.0	0.26	125.000	25.3776	52.5	45 - 113	1.06	20	
Cobalt	85.9554	1.0	0.07	125.000	13.4121	58.0	51 - 97	3.47	20	
Lead	162.350	1.0	0.18	125.000	106.642	44.6	33 - 127	13.6	20	
Molybdenum	73.2496	1.0	0.12	125.000	0.802110	58.0	54 - 97	4.23	20	
Nickel	83.4020	1.0	0.18	125.000	14.2951	55.3	46 - 102	3.43	20	
Selenium	59.9682	1.0	0.40	125.000	ND	48.0	52 - 93	7.20	20	M1
Silver	82.5182	1.0	0.12	125.000	ND	66.0	58 - 98	3.03	20	
Thallium	62.9249	1.0	0.38	125.000	ND	50.3	46 - 93	2.96	20	
Vanadium	106.826	1.0	0.06	125.000	36.3498	56.4	55 - 104	2.54	20	
Zinc	475.198	1.0	0.15	125.000	444.270	24.7	26 - 118	11.9	20	M1
Matrix Spike Dup (B8A0556-MSD2)			**Source: 1800262-01**			Prepared: 1/22/2018 Analyzed: 1/23/2018				
Copper	1460.67	4.0	0.38	125.000	1217.45	195	51 - 113	8.36	20	M1

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Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0559 - EPA 7471_S										
Blank (B8A0559-BLK1)					Prepared: 1/22/2018 Analyzed: 1/23/2018					
Mercury	ND	0.10	0.005							
LCS (B8A0559-BS1)					Prepared: 1/22/2018 Analyzed: 1/23/2018					
Mercury	0.740561	0.10	0.005	0.833333		88.9	80 - 120			
Matrix Spike (B8A0559-MS1)			**Source: 1800262-01**		Prepared: 1/22/2018 Analyzed: 1/23/2018					
Mercury	0.850997	0.10	0.005	0.833333	0.042793	97.0	70 - 130			
Matrix Spike Dup (B8A0559-MSD1)			**Source: 1800262-01**		Prepared: 1/22/2018 Analyzed: 1/23/2018					
Mercury	0.840686	0.10	0.005	0.833333	0.042793	95.7	70 - 130	1.22	20	
Post Spike (B8A0559-PS1)			**Source: 1800262-01**		Prepared: 1/22/2018 Analyzed: 1/23/2018					
Mercury	0.006047			5.00000E-3	5.135E-4	111	85 - 115			

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Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0493 - GCVOA_S										
Blank (B8A0493-BLK1)						Prepared: 1/19/2018 Analyzed: 1/19/2018				
Gasoline Range Organics	ND	1.0	0.20							
Surrogate: 4-Bromofluorobenzene	*0.2007*			*0.200000*		*100*	*50 - 138*			
LCS (B8A0493-BS1)						Prepared: 1/19/2018 Analyzed: 1/19/2018				
Gasoline Range Organics	4.26500	1.0	0.20	5.00000		85.3	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1899*			*0.200000*		*94.9*	*50 - 138*			
Matrix Spike (B8A0493-MS1)			**Source: 1800272-01**			Prepared: 1/19/2018 Analyzed: 1/19/2018				
Gasoline Range Organics	3.19500	1.0	0.20	5.00000	ND	63.9	17 - 141			
Surrogate: 4-Bromofluorobenzene	*0.2039*			*0.200000*		*102*	*50 - 138*			
Matrix Spike Dup (B8A0493-MSD1)			**Source: 1800272-01**			Prepared: 1/19/2018 Analyzed: 1/19/2018				
Gasoline Range Organics	3.00200	1.0	0.20	5.00000	ND	60.0	17 - 141	6.23	20	
Surrogate: 4-Bromofluorobenzene	*0.1965*			*0.200000*		*98.2*	*50 - 138*			

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Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0510 - GCSEMI_DRO_S										
Blank (B8A0510-BLK1)						Prepared: 1/19/2018 Analyzed: 1/19/2018				
DRO	ND	10	10							
ORO	ND	10	10							
Surrogate: p-Terphenyl	*82.22*			*80.0000*		*103*	*22 - 143*			
LCS (B8A0510-BS1)						Prepared: 1/19/2018 Analyzed: 1/19/2018				
DRO	976.160	10	10	1000.00		97.6	30 - 133			
Surrogate: p-Terphenyl	*84.78*			*80.0000*		*106*	*22 - 143*			
Matrix Spike (B8A0510-MS1)			**Source: 1800251-24**			Prepared: 1/19/2018 Analyzed: 1/19/2018				
DRO	1087.21	10	10	1000.00	84.8400	100	13 - 148			
Surrogate: p-Terphenyl	*99.30*			*80.0000*		*124*	*22 - 143*			
Matrix Spike Dup (B8A0510-MSD1)			**Source: 1800251-24**			Prepared: 1/19/2018 Analyzed: 1/19/2018				
DRO	1287.46	10	10	1000.00	84.8400	120	13 - 148	16.9	20	
Surrogate: p-Terphenyl	*111.0*			*80.0000*		*139*	*22 - 143*			

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Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0608 - GCSEMI_PCB/PEST_S										
Blank (B8A0608-BLK1)						Prepared: 1/23/2018 Analyzed: 1/23/2018				
Aroclor 1016	ND	16	4.6							
Aroclor 1221	ND	16	4.6							
Aroclor 1232	ND	16	4.6							
Aroclor 1242	ND	16	4.6							
Aroclor 1248	ND	16	4.6							
Aroclor 1254	ND	16	4.6							
Aroclor 1260	ND	16	4.6							
Aroclor 1262	ND	16	4.6							
Aroclor 1268	ND	16	4.6							
Surrogate: Decachlorobiphenyl	*14.49*			*16.6667*		*86.9*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*15.34*			*16.6667*		*92.0*	*30 - 130*			
LCS (B8A0608-BS1)						Prepared: 1/23/2018 Analyzed: 1/23/2018				
Aroclor 1016	147.341	16	4.6	166.667		88.4	73 - 111			
Aroclor 1260	150.604	16	4.6	166.667		90.4	75 - 125			
Surrogate: Decachlorobiphenyl	*14.94*			*16.6667*		*89.6*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*15.78*			*16.6667*		*94.7*	*30 - 130*			
Matrix Spike (B8A0608-MS1)			**Source: 1800272-02**			Prepared: 1/23/2018 Analyzed: 1/23/2018				
Aroclor 1016	142.584	16	4.6	166.667	ND	85.6	36 - 127			
Aroclor 1260	150.565	16	4.6	166.667	ND	90.3	31 - 142			
Surrogate: Decachlorobiphenyl	*14.67*			*16.6667*		*88.0*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*14.41*			*16.6667*		*86.5*	*30 - 130*			
Matrix Spike Dup (B8A0608-MSD1)			**Source: 1800272-02**			Prepared: 1/23/2018 Analyzed: 1/23/2018				
Aroclor 1016	133.652	16	4.6	166.667	ND	80.2	36 - 127	6.47	20	
Aroclor 1260	145.784	16	4.6	166.667	ND	87.5	31 - 142	3.23	20	
Surrogate: Decachlorobiphenyl	*14.01*			*16.6667*		*84.0*	*18 - 136*			
Surrogate: Tetrachloro-m-xylene	*13.55*			*16.6667*		*81.3*	*30 - 130*			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0609 - MSSEMI_S										
Blank (B8A0609-BLK1)					Prepared: 1/23/2018 Analyzed: 1/23/2018					
1,2,4-Trichlorobenzene	ND	330	71							
1,2-Dichlorobenzene	ND	330	60							
1,3-Dichlorobenzene	ND	330	65							
1,4-Dichlorobenzene	ND	330	60							
2,4,5-Trichlorophenol	ND	330	61							
2,4,6-Trichlorophenol	ND	330	220							
2,4-Dichlorophenol	ND	1600	120							
2,4-Dimethylphenol	ND	330	120							
2,4-Dinitrophenol	ND	1600	86							
2,4-Dinitrotoluene	ND	330	46							
2,6-Dinitrotoluene	ND	330	49							
2-Chloronaphthalene	ND	330	59							
2-Chlorophenol	ND	330	120							
2-Methylnaphthalene	ND	330	67							
2-Methylphenol	ND	330	67							
2-Nitroaniline	ND	1600	200							
2-Nitrophenol	ND	330	110							
3,3´-Dichlorobenzidine	ND	660	280							
3-Nitroaniline	ND	1600	44							
4,6-Dinitro-2-methyphenol	ND	1600	300							
4-Bromophenyl-phenylether	ND	330	50							
4-Chloro-3-methylphenol	ND	660	110							
4-Chloroaniline	ND	660	53							
4-Chlorophenyl-phenylether	ND	330	48							
4-Methylphenol	ND	330	66							
4-Nitroaniline	ND	1600	290							
4-Nitrophenol	ND	330	150							
Acenaphthene	ND	330	48							
Acenaphthylene	ND	330	51							
Anthracene	ND	330	49							
Benzidine (M)	ND	1600	1400							
Benzo(a)anthracene	ND	330	39							
Benzo(a)pyrene	ND	330	45							
Benzo(b)fluoranthene	ND	330	55							
Benzo(g,h,i)perylene	ND	330	38							
Benzo(k)fluoranthene	ND	330	52							
Benzoic acid	ND	1600	890							
Benzyl alcohol	ND	660	67							
bis(2-chloroethoxy)methane	ND	330	59							
bis(2-Chloroethyl)ether	ND	330	57							
bis(2-chloroisopropyl)ether	ND	330	65							

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0609 - MSSEMI_S (continued)										
Blank (B8A0609-BLK1) - Continued					Prepared: 1/23/2018 Analyzed: 1/23/2018					
bis(2-ethylhexyl)phthalate	ND	330	83							
Butylbenzylphthalate	ND	330	250							
Chrysene	ND	330	43							
Di-n-butylphthalate	ND	330	230							
Di-n-octylphthalate	ND	330	48							
Dibenz(a,h)anthracene	ND	330	43							
Dibenzofuran	ND	330	55							
Diethyl phthalate	ND	330	47							
Dimethyl phthalate	ND	330	46							
Fluoranthene	ND	330	47							
Fluorene	ND	330	49							
Hexachlorobenzene	ND	330	41							
Hexachlorobutadiene	ND	660	61							
Hexachlorocyclopentadiene	ND	660	64							
Hexachloroethane	ND	330	71							
Indeno(1,2,3-cd)pyrene	ND	330	44							
Isophorone	ND	330	57							
N-Nitroso-di-n propylamine	ND	330	65							
N-Nitrosodiphenylamine	ND	330	48							
Naphthalene	ND	330	60							
Nitrobenzene	ND	330	67							
Pentachlorophenol	ND	1600	190							
Phenanthrene	ND	330	46							
Phenol	ND	330	130							
Pyrene	ND	330	53							
Pyridine	ND	1600	270							
Surrogate: 1,2-Dichlorobenzene-d	*2613*			*3333.33*		*78.4*	*38 - 93*			
Surrogate: 2,4,6-Tribromophenol	*3562*			*3333.33*		*107*	*27 - 124*			
Surrogate: 2-Chlorophenol-d4	*2737*			*3333.33*		*82.1*	*36 - 96*			
Surrogate: 2-Fluorobiphenyl	*2969*			*3333.33*		*89.1*	*44 - 100*			
Surrogate: 2-Fluorophenol	*3086*			*3333.33*		*92.6*	*32 - 89*			S1
Surrogate: 4-Terphenyl-d14	*3434*			*3333.33*		*103*	*49 - 123*			
Surrogate: Nitrobenzene-d5	*3141*			*3333.33*		*94.2*	*38 - 104*			
Surrogate: Phenol-d5	*2634*			*3333.33*		*79.0*	*35 - 95*			
LCS (B8A0609-BS1)					Prepared: 1/23/2018 Analyzed: 1/23/2018					
1,2,4-Trichlorobenzene	2852.33	330	71	3333.33		85.6	52 - 122			
1,2-Dichlorobenzene	2354.67	330	60	3333.33		70.6	46 - 118			
1,3-Dichlorobenzene	2358.33	330	65	3333.33		70.8	45 - 113			
1,4-Dichlorobenzene	2337.00	330	60	3333.33		70.1	46 - 113			
2,4,5-Trichlorophenol	3092.67	330	61	3333.33		92.8	65 - 126			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0609 - MSSEMI_S (continued)										
LCS (B8A0609-BS1) - Continued					Prepared: 1/23/2018 Analyzed: 1/23/2018					
2,4,6-Trichlorophenol	3183.00	330	220	3333.33		95.5	61 - 119			
2,4-Dichlorophenol	2891.00	1600	120	3333.33		86.7	55 - 110			
2,4-Dimethylphenol	2919.00	330	120	3333.33		87.6	47 - 100			
2,4-Dinitrophenol	3285.00	1600	86	3333.33		98.6	37 - 186			
2,4-Dinitrotoluene	3325.00	330	46	3333.33		99.8	74 - 155			
2,6-Dinitrotoluene	3145.00	330	49	3333.33		94.4	62 - 169			
2-Chloronaphthalene	2789.67	330	59	3333.33		83.7	58 - 140			
2-Chlorophenol	2468.33	330	120	3333.33		74.0	45 - 96			
2-Methylnaphthalene	2665.67	330	67	3333.33		80.0	54 - 147			
2-Methylphenol	2418.67	330	67	3333.33		72.6	49 - 103			
2-Nitroaniline	3252.00	1600	200	3333.33		97.6	23 - 155			
2-Nitrophenol	2872.67	330	110	3333.33		86.2	54 - 112			
3,3´-Dichlorobenzidine	2776.67	660	280	3333.33		83.3	62 - 141			
3-Nitroaniline	2696.33	1600	44	3333.33		80.9	30 - 137			
4,6-Dinitro-2-methyphenol	3440.67	1600	300	3333.33		103	75 - 145			
4-Bromophenyl-phenylether	3365.00	330	50	3333.33		101	68 - 118			
4-Chloro-3-methylphenol	2892.33	660	110	3333.33		86.8	63 - 119			
4-Chloroaniline	2725.00	660	53	3333.33		81.8	19 - 127			
4-Chlorophenyl-phenylether	3240.00	330	48	3333.33		97.2	64 - 113			
4-Methylphenol	2388.33	330	66	3333.33		71.6	54 - 120			
4-Nitroaniline	2835.33	1600	290	3333.33		85.1	35 - 136			
4-Nitrophenol	3505.00	330	150	3333.33		105	52 - 160			
Acenaphthene	2933.33	330	48	3333.33		88.0	62 - 113			
Acenaphthylene	2915.33	330	51	3333.33		87.5	62 - 114			
Anthracene	3274.33	330	49	3333.33		98.2	71 - 129			
Benzidine (M)	4226.33	1600	1400	3333.33		127	45 - 184			
Benzo(a)anthracene	3201.00	330	39	3333.33		96.0	66 - 133			
Benzo(a)pyrene	3315.67	330	45	3333.33		99.5	71 - 133			
Benzo(b)fluoranthene	3319.33	330	55	3333.33		99.6	72 - 128			
Benzo(g,h,i)perylene	3336.67	330	38	3333.33		100	70 - 126			
Benzo(k)fluoranthene	3209.67	330	52	3333.33		96.3	70 - 136			
Benzoic acid	3077.67	1600	890	3333.33		92.3	11 - 108			
Benzyl alcohol	2339.00	660	67	3333.33		70.2	57 - 143			
bis(2-chloroethoxy)methane	2676.33	330	59	3333.33		80.3	51 - 99			
bis(2-Chloroethyl)ether	2232.67	330	57	3333.33		67.0	46 - 101			
bis(2-chloroisopropyl)ether	1995.67	330	65	3333.33		59.9	28 - 126			
bis(2-ethylhexyl)phthalate	3646.33	330	83	3333.33		109	49 - 134			
Butylbenzylphthalate	3206.00	330	250	3333.33		96.2	54 - 137			
Chrysene	3189.33	330	43	3333.33		95.7	70 - 125			
Di-n-butylphthalate	3448.67	330	230	3333.33		103	59 - 152			
Di-n-octylphthalate	2775.67	330	48	3333.33		83.3	50 - 146			
Dibenz(a,h)anthracene	3501.00	330	43	3333.33		105	59 - 141			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0609 - MSSEMI_S (continued)										
LCS (B8A0609-BS1) - Continued					Prepared: 1/23/2018 Analyzed: 1/23/2018					
Dibenzofuran	3040.33	330	55	3333.33		91.2	58 - 158			
Diethyl phthalate	3188.67	330	47	3333.33		95.7	68 - 136			
Dimethyl phthalate	3105.00	330	46	3333.33		93.2	69 - 124			
Fluoranthene	3280.00	330	47	3333.33		98.4	72 - 128			
Fluorene	3201.67	330	49	3333.33		96.1	67 - 118			
Hexachlorobenzene	3340.33	330	41	3333.33		100	61 - 155			
Hexachlorobutadiene	3119.67	660	61	3333.33		93.6	44 - 111			
Hexachlorocyclopentadiene	3245.33	660	64	3333.33		97.4	46 - 138			
Hexachloroethane	2295.67	330	71	3333.33		68.9	40 - 129			
Indeno(1,2,3-cd)pyrene	3463.67	330	44	3333.33		104	63 - 142			
Isophorone	2939.67	330	57	3333.33		88.2	55 - 106			
N-Nitroso-di-n propylamine	2530.00	330	65	3333.33		75.9	50 - 117			
N-Nitrosodiphenylamine	3139.67	330	48	3333.33		94.2	70 - 137			
Naphthalene	2775.00	330	60	3333.33		83.3	54 - 106			
Nitrobenzene	2883.33	330	67	3333.33		86.5	57 - 134			
Pentachlorophenol	3379.00	1600	190	3333.33		101	53 - 115			
Phenanthrene	3308.33	330	46	3333.33		99.2	70 - 129			
Phenol	2222.00	330	130	3333.33		66.7	47 - 105			
Pyrene	3386.67	330	53	3333.33		102	73 - 131			
Pyridine	2780.00	1600	270	3333.33		83.4	40 - 91			
Surrogate: 1,2-Dichlorobenzene-d	*2388*			*3333.33*		*71.6*	*38 - 93*			
Surrogate: 2,4,6-Tribromophenol	*3930*			*3333.33*		*118*	*27 - 124*			
Surrogate: 2-Chlorophenol-d4	*2558*			*3333.33*		*76.8*	*36 - 96*			
Surrogate: 2-Fluorobiphenyl	*2896*			*3333.33*		*86.9*	*44 - 100*			
Surrogate: 2-Fluorophenol	*2724*			*3333.33*		*81.7*	*32 - 89*			
Surrogate: 4-Terphenyl-d14	*3074*			*3333.33*		*92.2*	*49 - 123*			
Surrogate: Nitrobenzene-d5	*2911*			*3333.33*		*87.3*	*38 - 104*			
Surrogate: Phenol-d5	*2430*			*3333.33*		*72.9*	*35 - 95*			
Matrix Spike (B8A0609-MS1)			**Source: 1800272-02**		Prepared: 1/23/2018 Analyzed: 1/23/2018					
1,2,4-Trichlorobenzene	2650.00	330	71	3333.33	ND	79.5	40 - 127			
1,2-Dichlorobenzene	2321.67	330	60	3333.33	ND	69.7	36 - 125			
1,3-Dichlorobenzene	2340.67	330	65	3333.33	ND	70.2	35 - 119			
1,4-Dichlorobenzene	2343.67	330	60	3333.33	ND	70.3	36 - 120			
2,4,5-Trichlorophenol	3137.67	330	61	3333.33	ND	94.1	42 - 135			
2,4,6-Trichlorophenol	3159.33	330	220	3333.33	ND	94.8	46 - 121			
2,4-Dichlorophenol	2783.00	1600	120	3333.33	ND	83.5	43 - 114			
2,4-Dimethylphenol	2744.67	330	120	3333.33	ND	82.3	37 - 105			
2,4-Dinitrophenol	3315.67	1600	86	3333.33	ND	99.5	17 - 177			
2,4-Dinitrotoluene	3296.33	330	46	3333.33	ND	98.9	50 - 166			
2,6-Dinitrotoluene	3077.00	330	49	3333.33	ND	92.3	43 - 169			

Holdrege & Kull, An NV5 Company
792 Searls Avenue
Nevada City , CA 95959

Project Number : ORR CREEK DIVERSION STRUCTUR
Report To : Bryan Botsford
Reported : 01/29/2018

Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0609 - MSSEMI_S (continued)										
Matrix Spike (B8A0609-MS1) - Continued			**Source: 1800272-02**		Prepared: 1/23/2018 Analyzed: 1/23/2018					
2-Chloronaphthalene	2793.67	330	59	3333.33	ND	83.8	44 - 144			
2-Chlorophenol	2428.67	330	120	3333.33	ND	72.9	38 - 99			
2-Methylnaphthalene	2569.00	330	67	3333.33	ND	77.1	41 - 151			
2-Methylphenol	2377.67	330	67	3333.33	ND	71.3	37 - 108			
2-Nitroaniline	3273.67	1600	200	3333.33	ND	98.2	13 - 155			
2-Nitrophenol	2814.00	330	110	3333.33	ND	84.4	24 - 142			
3,3´-Dichlorobenzidine	2600.00	660	280	3333.33	ND	78.0	31 - 153			
3-Nitroaniline	2680.33	1600	44	3333.33	ND	80.4	7 - 147			
4,6-Dinitro-2-methyphenol	3232.00	1600	300	3333.33	ND	97.0	45 - 155			
4-Bromophenyl-phenylether	3135.67	330	50	3333.33	ND	94.1	45 - 122			
4-Chloro-3-methylphenol	2746.00	660	110	3333.33	ND	82.4	45 - 124			
4-Chloroaniline	2617.33	660	53	3333.33	ND	78.5	12 - 117			
4-Chlorophenyl-phenylether	3225.67	330	48	3333.33	ND	96.8	45 - 115			
4-Methylphenol	2381.33	330	66	3333.33	ND	71.4	39 - 125			
4-Nitroaniline	2728.33	1600	290	3333.33	ND	81.8	22 - 135			
4-Nitrophenol	3478.67	330	150	3333.33	ND	104	27 - 161			
Acenaphthene	2863.33	330	48	3333.33	ND	85.9	47 - 114			
Acenaphthylene	2944.67	330	51	3333.33	ND	88.3	45 - 117			
Anthracene	3058.00	330	49	3333.33	ND	91.7	47 - 130			
Benzidine (M)	2120.67	1600	1400	3333.33	ND	63.6	8 - 179			
Benzo(a)anthracene	3054.00	330	39	3333.33	ND	91.6	46 - 130			
Benzo(a)pyrene	3042.00	330	45	3333.33	ND	91.3	46 - 131			
Benzo(b)fluoranthene	2925.67	330	55	3333.33	ND	87.8	44 - 130			
Benzo(g,h,i)perylene	3099.67	330	38	3333.33	ND	93.0	48 - 125			
Benzo(k)fluoranthene	3140.33	330	52	3333.33	ND	94.2	46 - 132			
Benzoic acid	3154.00	1600	890	3333.33	ND	94.6	0 - 121			
Benzyl alcohol	2303.00	660	67	3333.33	ND	69.1	32 - 156			
bis(2-chloroethoxy)methane	2572.33	330	59	3333.33	ND	77.2	42 - 100			
bis(2-Chloroethyl)ether	2196.33	330	57	3333.33	ND	65.9	39 - 104			
bis(2-chloroisopropyl)ether	1942.00	330	65	3333.33	ND	58.3	26 - 125			
bis(2-ethylhexyl)phthalate	3422.67	330	83	3333.33	ND	103	20 - 159			
Butylbenzylphthalate	2990.33	330	250	3333.33	ND	89.7	19 - 171			
Chrysene	3022.00	330	43	3333.33	ND	90.7	52 - 123			
Di-n-butylphthalate	3243.00	330	230	3333.33	ND	97.3	40 - 156			
Di-n-octylphthalate	2605.00	330	48	3333.33	ND	78.2	31 - 156			
Dibenz(a,h)anthracene	3268.00	330	43	3333.33	ND	98.0	31 - 149			
Dibenzofuran	2955.00	330	55	3333.33	ND	88.7	43 - 157			
Diethyl phthalate	3180.00	330	47	3333.33	ND	95.4	42 - 138			
Dimethyl phthalate	3032.00	330	46	3333.33	ND	91.0	44 - 127			
Fluoranthene	3115.00	330	47	3333.33	ND	93.5	46 - 131			
Fluorene	3150.67	330	49	3333.33	ND	94.5	48 - 120			
Hexachlorobenzene	3153.33	330	41	3333.33	ND	94.6	37 - 158			

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0609 - MSSEMI_S (continued)										
Matrix Spike (B8A0609-MS1) - Continued			**Source: 1800272-02**		Prepared: 1/23/2018 Analyzed: 1/23/2018					
Hexachlorobutadiene	2989.67	660	61	3333.33	ND	89.7	37 - 114			
Hexachlorocyclopentadiene	3141.67	660	64	3333.33	ND	94.3	29 - 146			
Hexachloroethane	2271.67	330	71	3333.33	ND	68.2	31 - 135			
Indeno(1,2,3-cd)pyrene	3213.67	330	44	3333.33	ND	96.4	36 - 148			
Isophorone	2815.00	330	57	3333.33	ND	84.5	36 - 112			
N-Nitroso-di-n propylamine	2475.67	330	65	3333.33	ND	74.3	37 - 120			
N-Nitrosodiphenylamine	2883.67	330	48	3333.33	ND	86.5	44 - 141			
Naphthalene	2643.33	330	60	3333.33	ND	79.3	47 - 106			
Nitrobenzene	2683.67	330	67	3333.33	ND	80.5	44 - 139			
Pentachlorophenol	3192.33	1600	190	3333.33	ND	95.8	32 - 128			
Phenanthrene	3055.67	330	46	3333.33	ND	91.7	49 - 129			
Phenol	2200.00	330	130	3333.33	ND	66.0	40 - 107			
Pyrene	3059.00	330	53	3333.33	ND	91.8	47 - 134			
Pyridine	2535.33	1600	270	3333.33	ND	76.1	24 - 99			
Surrogate: 1,2-Dichlorobenzene-d	*2152*			*3333.33*		*64.6*	*38 - 93*			
Surrogate: 2,4,6-Tribromophenol	*3724*			*3333.33*		*112*	*27 - 124*			
Surrogate: 2-Chlorophenol-d4	*2394*			*3333.33*		*71.8*	*36 - 96*			
Surrogate: 2-Fluorobiphenyl	*2775*			*3333.33*		*83.3*	*44 - 100*			
Surrogate: 2-Fluorophenol	*2528*			*3333.33*		*75.8*	*32 - 89*			
Surrogate: 4-Terphenyl-d14	*2792*			*3333.33*		*83.8*	*49 - 123*			
Surrogate: Nitrobenzene-d5	*2661*			*3333.33*		*79.8*	*38 - 104*			
Surrogate: Phenol-d5	*2243*			*3333.33*		*67.3*	*35 - 95*			
Matrix Spike Dup (B8A0609-MSD1)			**Source: 1800272-02**		Prepared: 1/23/2018 Analyzed: 1/23/2018					
1,2,4-Trichlorobenzene	2797.67	330	71	3333.33	ND	83.9	40 - 127	5.42	20	
1,2-Dichlorobenzene	2320.00	330	60	3333.33	ND	69.6	36 - 125	0.0718	20	
1,3-Dichlorobenzene	2335.67	330	65	3333.33	ND	70.1	35 - 119	0.214	20	
1,4-Dichlorobenzene	2322.33	330	60	3333.33	ND	69.7	36 - 120	0.914	20	
2,4,5-Trichlorophenol	3210.67	330	61	3333.33	ND	96.3	42 - 135	2.30	20	
2,4,6-Trichlorophenol	3178.33	330	220	3333.33	ND	95.4	46 - 121	0.600	20	
2,4-Dichlorophenol	2853.67	1600	120	3333.33	ND	85.6	43 - 114	2.51	20	
2,4-Dimethylphenol	2890.67	330	120	3333.33	ND	86.7	37 - 105	5.18	20	
2,4-Dinitrophenol	3592.33	1600	86	3333.33	ND	108	17 - 177	8.01	20	
2,4-Dinitrotoluene	3502.00	330	46	3333.33	ND	105	50 - 166	6.05	20	
2,6-Dinitrotoluene	3205.33	330	49	3333.33	ND	96.2	43 - 169	4.09	20	
2-Chloronaphthalene	2806.67	330	59	3333.33	ND	84.2	44 - 144	0.464	20	
2-Chlorophenol	2414.33	330	120	3333.33	ND	72.4	38 - 99	0.592	20	
2-Methylnaphthalene	2646.33	330	67	3333.33	ND	79.4	41 - 151	2.97	20	
2-Methylphenol	2377.00	330	67	3333.33	ND	71.3	37 - 108	0.0281	20	
2-Nitroaniline	3403.67	1600	200	3333.33	ND	102	13 - 155	3.89	20	
2-Nitrophenol	2883.67	330	110	3333.33	ND	86.5	24 - 142	2.45	20	

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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0609 - MSSEMI_S (continued)										
Matrix Spike Dup (B8A0609-MSD1) - Continued			**Source: 1800272-02**		Prepared: 1/23/2018 Analyzed: 1/23/2018					
3,3´-Dichlorobenzidine	2717.00	660	280	3333.33	ND	81.5	31 - 153	4.40	20	
3-Nitroaniline	2801.33	1600	44	3333.33	ND	84.0	7 - 147	4.41	20	
4,6-Dinitro-2-methyphenol	3368.67	1600	300	3333.33	ND	101	45 - 155	4.14	20	
4-Bromophenyl-phenylether	3215.33	330	50	3333.33	ND	96.5	45 - 122	2.51	20	
4-Chloro-3-methylphenol	2893.67	660	110	3333.33	ND	86.8	45 - 124	5.24	20	
4-Chloroaniline	2661.67	660	53	3333.33	ND	79.9	12 - 117	1.68	20	
4-Chlorophenyl-phenylether	3271.33	330	48	3333.33	ND	98.1	45 - 115	1.41	20	
4-Methylphenol	2342.33	330	66	3333.33	ND	70.3	39 - 125	1.65	20	
4-Nitroaniline	2971.67	1600	290	3333.33	ND	89.2	22 - 135	8.54	20	
4-Nitrophenol	3692.00	330	150	3333.33	ND	111	27 - 161	5.95	20	
Acenaphthene	2919.00	330	48	3333.33	ND	87.6	47 - 114	1.93	20	
Acenaphthylene	2914.00	330	51	3333.33	ND	87.4	45 - 117	1.05	20	
Anthracene	3175.33	330	49	3333.33	ND	95.3	47 - 130	3.76	20	
Benzidine (M)	1898.33	1600	1400	3333.33	ND	57.0	8 - 179	11.1	20	
Benzo(a)anthracene	3201.00	330	39	3333.33	ND	96.0	46 - 130	4.70	20	
Benzo(a)pyrene	3323.67	330	45	3333.33	ND	99.7	46 - 131	8.85	20	
Benzo(b)fluoranthene	3294.67	330	55	3333.33	ND	98.8	44 - 130	11.9	20	
Benzo(g,h,i)perylene	3432.67	330	38	3333.33	ND	103	48 - 125	10.2	20	
Benzo(k)fluoranthene	3358.00	330	52	3333.33	ND	101	46 - 132	6.70	20	
Benzoic acid	3161.00	1600	890	3333.33	ND	94.8	0 - 121	0.222	20	
Benzyl alcohol	2314.00	660	67	3333.33	ND	69.4	32 - 156	0.476	20	
bis(2-chloroethoxy)methane	2626.67	330	59	3333.33	ND	78.8	42 - 100	2.09	20	
bis(2-Chloroethyl)ether	2204.00	330	57	3333.33	ND	66.1	39 - 104	0.348	20	
bis(2-chloroisopropyl)ether	1929.00	330	65	3333.33	ND	57.9	26 - 125	0.672	20	
bis(2-ethylhexyl)phthalate	3588.00	330	83	3333.33	ND	108	20 - 159	4.72	20	
Butylbenzylphthalate	3158.33	330	250	3333.33	ND	94.8	19 - 171	5.46	20	
Chrysene	3221.33	330	43	3333.33	ND	96.6	52 - 123	6.39	20	
Di-n-butylphthalate	3456.00	330	230	3333.33	ND	104	40 - 156	6.36	20	
Di-n-octylphthalate	2870.67	330	48	3333.33	ND	86.1	31 - 156	9.70	20	
Dibenz(a,h)anthracene	3581.33	330	43	3333.33	ND	107	31 - 149	9.15	20	
Dibenzofuran	2979.00	330	55	3333.33	ND	89.4	43 - 157	0.809	20	
Diethyl phthalate	3388.33	330	47	3333.33	ND	102	42 - 138	6.34	20	
Dimethyl phthalate	3174.67	330	46	3333.33	ND	95.2	44 - 127	4.60	20	
Fluoranthene	3305.00	330	47	3333.33	ND	99.2	46 - 131	5.92	20	
Fluorene	3202.00	330	49	3333.33	ND	96.1	48 - 120	1.62	20	
Hexachlorobenzene	3304.33	330	41	3333.33	ND	99.1	37 - 158	4.68	20	
Hexachlorobutadiene	3015.00	660	61	3333.33	ND	90.5	37 - 114	0.844	20	
Hexachlorocyclopentadiene	3250.00	660	64	3333.33	ND	97.5	29 - 146	3.39	20	
Hexachloroethane	2228.00	330	71	3333.33	ND	66.8	31 - 135	1.94	20	
Indeno(1,2,3-cd)pyrene	3534.33	330	44	3333.33	ND	106	36 - 148	9.50	20	
Isophorone	2884.00	330	57	3333.33	ND	86.5	36 - 112	2.42	20	
N-Nitroso-di-n propylamine	2466.00	330	65	3333.33	ND	74.0	37 - 120	0.391	20	

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
792 Searls Avenue	Report To : Bryan Botsford
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Semivolatile Organic Compounds by EPA 8270C - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8A0609 - MSSEMI_S (continued)										
Matrix Spike Dup (B8A0609-MSD1) - Continued			**Source: 1800272-02**		Prepared: 1/23/2018 Analyzed: 1/23/2018					
N-Nitrosodiphenylamine	3024.33	330	48	3333.33	ND	90.7	44 - 141	4.76	20	
Naphthalene	2681.67	330	60	3333.33	ND	80.5	47 - 106	1.44	20	
Nitrobenzene	2875.00	330	67	3333.33	ND	86.3	44 - 139	6.88	20	
Pentachlorophenol	3340.67	1600	190	3333.33	ND	100	32 - 128	4.54	20	
Phenanthrene	3184.00	330	46	3333.33	ND	95.5	49 - 129	4.11	20	
Phenol	2216.33	330	130	3333.33	ND	66.5	40 - 107	0.740	20	
Pyrene	3320.00	330	53	3333.33	ND	99.6	47 - 134	8.18	20	
Pyridine	2352.00	1600	270	3333.33	ND	70.6	24 - 99	7.50	20	
Surrogate: 1,2-Dichlorobenzene-d	*2170*			*3333.33*		*65.1*	*38 - 93*			
Surrogate: 2,4,6-Tribromophenol	*3814*			*3333.33*		*114*	*27 - 124*			
Surrogate: 2-Chlorophenol-d4	*2338*			*3333.33*		*70.2*	*36 - 96*			
Surrogate: 2-Fluorobiphenyl	*2666*			*3333.33*		*80.0*	*44 - 100*			
Surrogate: 2-Fluorophenol	*2437*			*3333.33*		*73.1*	*32 - 89*			
Surrogate: 4-Terphenyl-d14	*2832*			*3333.33*		*85.0*	*49 - 123*			
Surrogate: Nitrobenzene-d5	*2705*			*3333.33*		*81.1*	*38 - 104*			
Surrogate: Phenol-d5	*2181*			*3333.33*		*65.4*	*35 - 95*			

Certificate of Analysis

Holdrege & Kull, An NV5 Company	Project Number : ORR CREEK DIVERSION STRUCTUR
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Notes and Definitions

S1	Surrogate recovery was above laboratory acceptance limit. No target analyte was detected in the sample.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
E	Result value is above quantitation range and therefore, estimated.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

January 26, 2018

Carmen Aguila
Advanced Technology Laboratories
3283 Walnut Ave
Signal Hill, CA 90755

TEL: (562) 989-4045
FAX: (562) 989-4040

Workorder No.: N028144

RE: 1800272

Attention: Carmen Aguila

Enclosed are the results for sample(s) received on January 19, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Quennie Manimtim
Laboratory Director

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" Flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

Analytical comment for EPA 7199:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are out of recovery criteria due to possible matrix interference. However, the associated Laboratory Control Sample (LCS) validated the analytical batch.

CLIENT: Advanced Technology Laboratories
Project: 1800272
Lab Order: N028144
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N028144-001A	1800272-01/OC-SS-1-4	Soil	1/17/2018 12:00:01 AM	1/19/2018	1/26/2018
N028144-002A	1800272-02/OC-SS-5-8	Soil	1/17/2018 12:00:01 AM	1/19/2018	1/26/2018

CLIENT:	Advanced Technology Laboratories	**Client Sample ID:**	1800272-01/OC-SS-1-4
Lab Order:	N028144	**Collection Date:**	1/17/2018 12:00:01 AM
Project:	1800272	**Matrix:**	SOIL
Lab ID:	N028144-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 3060A			**EPA 7199**				
RunID: **NV00922-IC6_180123A**	QC Batch: **66494**			PrepDate:		**1/22/2018**	Analyst: **RAB**
Hexavalent Chromium	ND	0.058	0.20		mg/Kg	1	1/23/2018 01:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT:	Advanced Technology Laboratories	**Client Sample ID:**	1800272-02/OC-SS-5-8
Lab Order:	N028144	**Collection Date:**	1/17/2018 12:00:01 AM
Project:	1800272	**Matrix:**	SOIL
Lab ID:	N028144-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 3060A			**EPA 7199**				
RunID: **NV00922-IC6_180123A**	QC Batch: **66494**			PrepDate:		**1/22/2018**	Analyst: **RAB**
Hexavalent Chromium	ND	0.058	0.20		mg/Kg	1	1/23/2018 02:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	S	Spike/Surrogate outside of limits due to matrix interference
	Results are wet unless otherwise specified	DO	Surrogate Diluted Out

CLIENT: Advanced Technology Laboratories
Work Order: N028144
Project: 1800272

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_S

Sample ID: **MB-66494**	SampType: **MBLK**	TestCode: **7199_S**	Units: **mg/Kg**	Prep Date: **1/22/2018**	RunNo: **121634**
Client ID: **PBS**	Batch ID: **66494**	TestNo: **EPA 7199**	**EPA 3060A**	Analysis Date: **1/23/2018**	SeqNo: **2907699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **LCS-66494**	SampType: **LCS**	TestCode: **7199_S**	Units: **mg/Kg**	Prep Date: **1/22/2018**	RunNo: **121634**
Client ID: **LCSS**	Batch ID: **66494**	TestNo: **EPA 7199**	**EPA 3060A**	Analysis Date: **1/23/2018**	SeqNo: **2907700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3.809	0.20	4.000	0	95.2	80	120				

Sample ID: **N028144-001A-REP**	SampType: **DUP**	TestCode: **7199_S**	Units: **mg/Kg**	Prep Date: **1/22/2018**	RunNo: **121634**
Client ID: **ZZZZZZ**	Batch ID: **66494**	TestNo: **EPA 7199**	**EPA 3060A**	Analysis Date: **1/23/2018**	SeqNo: **2907702**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID: **N028144-001A-DUP**	SampType: **DUP**	TestCode: **7199_S**	Units: **mg/Kg**	Prep Date: **1/22/2018**	RunNo: **121634**
Client ID: **ZZZZZZ**	Batch ID: **66494**	TestNo: **EPA 7199**	**EPA 3060A**	Analysis Date: **1/23/2018**	SeqNo: **2907703**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID: **N028144-001A-MS**	SampType: **MS**	TestCode: **7199_S**	Units: **mg/Kg**	Prep Date: **1/22/2018**	RunNo: **121634**
Client ID: **ZZZZZZ**	Batch ID: **66494**	TestNo: **EPA 7199**	**EPA 3060A**	Analysis Date: **1/23/2018**	SeqNo: **2907704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.508	0.20	3.995	0	12.7	75	125				S

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: Advanced Technology Laboratories
Work Order: N028144
Project: 1800272

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_S

Sample ID: **N028144-001A-MSD**	SampType: **MSD**	TestCode: **7199_S**	Units: **mg/Kg**	Prep Date: **1/22/2018**	RunNo: **121634**
Client ID: **ZZZZZZ**	Batch ID: **66494**	TestNo: **EPA 7199**	**EPA 3060A**	Analysis Date: **1/23/2018**	SeqNo: **2907705**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.073	0.20	3.990	0	1.84	75	125	0.5084	0	20	JS

Sample ID: **N028144-001A-MS I**	SampType: **MS**	TestCode: **7199_S**	Units: **mg/Kg**	Prep Date: **1/22/2018**	RunNo: **121634**
Client ID: **ZZZZZZ**	Batch ID: **66494**	TestNo: **EPA 7199**	**EPA 3060A**	Analysis Date: **1/23/2018**	SeqNo: **2907706**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	279.113	10	649.2	0	43.0	75	125				S

Sample ID: **N028144-002A-REP**	SampType: **DUP**	TestCode: **7199_S**	Units: **mg/Kg**	Prep Date: **1/22/2018**	RunNo: **121634**
Client ID: **ZZZZZZ**	Batch ID: **66494**	TestNo: **EPA 7199**	**EPA 3060A**	Analysis Date: **1/23/2018**	SeqNo: **2907708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID: **N028144-001APS**	SampType: **MS**	TestCode: **7199_S**	Units: **mg/Kg**	Prep Date:	RunNo: **121634**
Client ID: **ZZZZZZ**	Batch ID: **66494**	TestNo: **EPA 7199**	**EPA 3060A**	Analysis Date: **1/23/2018**	SeqNo: **2907711**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.291	0.20	3.987	0	108	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
S	Spike/Surrogate outside of limits due to matrix interference	DO	Surrogate Diluted Out		Calculations are based on raw values

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1800272

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Carmen Aguila (Carmen@atlglobal.com)
Sampler: BOTSFORD

RECEIVING LABORATORY:

Asset Laboratories
3151 W. Post Road
Las Vegas, NV 89118
Phone :(702) 307-2659
Fax: (702) 307-2691
PO#: SC12371-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1800272-01 / OC-SS-1-4		**Soil**	**01/17/18 00:00**	N028144 - 01
7199_3060A_SUB	**01/26/18 17:00**	02/14/18 00:00		
[Hexavalent Chromium by Ion Chromatography]				
Glass Jar - 2 oz				
ATL Lab#: 1800272-02 / OC-SS-5-8		**Soil**	**01/17/18 00:00**	- 02
7199_3060A_SUB	**01/26/18 17:00**	02/14/18 00:00		
[Hexavalent Chromium by Ion Chromatography]				
Glass Jar - 2 oz				

Released By	Date	Received By	Date
MPR	01/19/18 11:24		1/19/18 11:24
	1/19/18 12:25	FEM MPR	1/20/18 8:55

IR #2 3.7°C
CSO 4603

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	1/20/2018	Workorder:	N028144
Rep sample Temp (Deg C):	3.7	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: Golden State Overnight

Last 4 digits of Tracking No.: 4603 Packing Material Used: Bubble Wrap

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☐	No ☐	NA ☑
15. Did the bottle labels indicate correct preservatives used?	Yes ☐	No ☐	NA ☑
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☑	No ☐	NA ☐

Comments: See Correspondence.

For:

Checklist Completed By: FR 1/23/2018

Reviewed By: 01/25/2018

Subject: RE: 1800272 (Asset Labs No. N028144)
From: Carmen Aguila <Carmen@atlglobal.com>
Date: 1/23/2018 10:51 AM
To: "yoandra@assetlaboratories.com" <yoandra@assetlaboratories.com>
CC: "customer.relations@atlglobal.com" <customer.relations@atlglobal.com>, Rachelle Arada <Rachelle@atlglobal.com>, Marnellie Ramos <Marnellie@atlglobal.com>

Hi Yoandra,

The collection date is 1/17/18 as indicated on the CoC. The date on our label is our date receipt of the samples.

Thank you,
Carmen

-----Original Message-----
From: Rachelle Arada
Sent: Tuesday, January 23, 2018 10:46 AM
To: Carmen Aguila; Marnellie Ramos
Cc: customer.relations@atlglobal.com
Subject: FW: 1800272 (Asset Labs No. N028144)

Please advise Asset. Thanks.

-----Original Message-----
From: Yoandra Rodriguez [mailto:yoandra@assetlaboratories.com]
Sent: Tuesday, January 23, 2018 10:55 AM
To: Rachelle Arada
Cc: 'Andreafe. Gallardo'; 'Sonny. Lorenzo'; dylan@assetlaboratories.com
Subject: 1800272 (Asset Labs No. N028144)

Hi Rachelle,

Please kindly confirm if the collection date for the attached COC is 1/17/18 or 1/18/18 as per labels.

Thanks,

--
Yoandra Rodriguez
Sample Control Officer
Asset Laboratories

Attachments:

N028144_COC.PDF	247 KB

ASSET Laboratories

WORK ORDER Summary

22-Jan-18

WorkOrder: N028144

Client ID: ATL

Project: 1800272 **QC Level:** RTNE **Date Received:** 1/19/2018

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N028144-001A	1800272-01/OC-SS-1-4	1/17/2018 12:00:01 AM	1/26/2018	Soil	EPA 3060A	Prep for Hexavalend Chromium	☐	☐	☐	WS
			1/26/2018		EPA 7199	Hexavalent Chromium by IC	☐	☐	☐	WS
N028144-002A	1800272-02/OC-SS-5-8		1/26/2018		EPA 3060A	Prep for Hexavalend Chromium	☐	☐	☐	WS
			1/26/2018		EPA 7199	Hexavalent Chromium by IC	☐	☐	☐	WS
N028144-003A	FOLDER	1/26/2018	1/26/2018		Folder	Folder	☐	☐	☐	LAB
			1/26/2018		Folder	Folder	☐	☐	☐	LAB

GSO

800-322-5555
www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

Ship To
ASSET LABORATORIES
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

COD: $0.00
Weight: 0 lb(s)
Reference:

Delivery Instructions:
HOLD FOR PICKUP
Signature Type: NOT REQUIRED

Tracking #: 539164603

SDS

LVS A

LAS VEGAS

C89102A

78231522

Print Date: 1/19/2018 4:28 PM

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.
Step 2: Fold this page in half.
Step 3: Securely attach this label to your package and do not cover the barcode.

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all of the GSO service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gso.com.

12 # 2

3.7° C

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attention: Carmen Aguila

Number of Pages	**3**
Date Received	**01/19/2018**
Date Reported	**01/29/2018**

Job Number	Order Date	Client
90981	01/19/2018	ATL

Project ID: 1800272
Project Name: PO# SC12372

Enclosed please find results of analyses of 2 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1800272

90981

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Carmen Aguila (Carmen@atlglobal.com)
Sampler: BOTSFORD

RECEIVING LABORATORY:

AETL
2834 North Naomi Street
Burbank, CA 91504
Phone :(818) 845-8200
Fax: (818) 845-8840
PO#: SC12372-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1800272-01 / OC-SS-1-4		**Soil**	**01/17/18 00:00**	90981.01
8310_SUB	**01/26/18 17:00**	01/31/18 00:00		
[Polynuclear Aromatic Hydrocarbons]				
Glass Jar - 2 oz				
ATL Lab#: 1800272-02 / OC-SS-5-8		**Soil**	**01/17/18 00:00**	90981.02
8310_SUB	**01/26/18 17:00**	01/31/18 00:00		
[Polynuclear Aromatic Hydrocarbons]				
Glass Jar - 2 oz				

Released By	1/19/18 Date	Received By	1/19/18 0730 Date
Released By	1/19/18 1035 Date	Received By	01/19/18 1035 Date

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COOLER RECEIPT FORM

Client Name: ATL

Project Name:

AETL Job Number: 90981

Date Received: 01/19/18 Received by: Anna

Carrier: ☒ AETL Courier ☐ Client ☐ GSO ☐ FedEx ☐ UPS

☐ Others:

Samples were received in: ☒ Cooler (/) ☐ Other (Specify):

Inside temperature of shipping container No 1: 3.4°C, No 2: _____, No 3: _____

Type of sample containers: ☐ VOA, ☐ Glass bottles, ☒ Wide mouth jars, ☐ HDPE bottles, ☐ Metal sleeves, ☐ Others (Specify): _____

How are samples preserved: ☐ None, ☐ Ice, ☒ Blue Ice, ☐ Dry Ice

☒ None, _ HNO_3, _ NaOH, _ ZnOAc, _ HCl, _ $Na_2S_2O_3$, _ MeOH

_ Other (Specify):

	Yes	No, explain below	Name, if client was notified.
1. Are the COCs Correct?	✓		
2. Are the Sample labels legible?	✓		
3. Do samples match the COC?	✓		
4. Are the required analyses clear?	✓		
5. Is there enough samples for required analysis?	✓		
6. Are samples sealed with evidence tape?		✓	
7. Are sample containers in good condition?	✓		
8. Are samples preserved?	✓		
9. Are samples preserved properly for the intended analysis?	✓		
10. Are the VOAs free of headspace?	NA		
11. Are the jars free of headspace?	✓		

Explain all "No" answers for above questions:

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Ordered By

Advanced Technology Laboratories 3275 Walnut Avenue Signal Hill, CA 90755-5225

Project ID: 1800272 Date Received 01/19/2018 Date Reported 01/29/2018

Telephone: (562)989-4045
Attention: Carmen Aguila

Job Number	Order Date	Client
90981	01/19/2018	ATL

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 2 samples with the following specification on 01/19/2018.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
90981.01	1800272-01	01/17/2018	Soil	1
90981.02	1800272-02	01/17/2018	Soil	1

Method ^ Submethod	*Req Date*	*Priority*	*TAT*	*Units*
(8310)	01/26/2018	2	Normal	mg/Kg

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Unless otherwise noted, all results of soil and solid samples are based on wet weight.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Dire

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ANALYTICAL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Carmen Aguila
Page: **2**

Project ID: 1800272
Project Name: PO# SC12372

AETL Job Number	Submitted	Client
90981	01/19/2018	ATL

Method: (8310), Polynuclear Aromatic Hydrocarbons (SW-846)

QC Batch No: 012518IB1

Our Lab I.D.			Method Blank	**90981.01**	**90981.02**		
Client Sample I.D.				1800272-01	1800272-02		
Date Sampled				01/17/2018	01/17/2018		
Date Prepared			01/25/2018	01/25/2018	01/25/2018		
Preparation Method			3550B	3550B	3550B		
Date Analyzed			01/26/2018	01/26/2018	01/26/2018		
Matrix			Soil	Soil	Soil		
Units			mg/Kg	mg/Kg	mg/Kg		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Benzo(a)anthracene	0.010	0.020	ND	ND	ND		
Benzo(a)pyrene	0.010	0.020	ND	ND	ND		
Benzo(b)fluoranthene	0.010	0.020	ND	ND	ND		
Benzo(k)fluoranthene	0.010	0.020	ND	ND	ND		
Chrysene	0.010	0.020	ND	ND	ND		
Dibenzo(a,h)anthracene	0.010	0.020	ND	ND	ND		
Indeno(1,2,3-cd)pyrene	0.010	0.020	ND	ND	ND		
Acenaphthene	0.010	0.020	ND	ND	ND		
Acenaphthylene	0.010	0.020	ND	ND	ND		
Anthracene	0.010	0.020	ND	ND	ND		
Benzo(g,h,i)perylene	0.010	0.020	ND	ND	ND		
Fluoranthene	0.010	0.020	ND	ND	ND		
Fluorene	0.010	0.020	ND	ND	ND		
Naphthalene	0.010	0.020	ND	ND	ND		
Phenanthrene	0.010	0.020	ND	ND	ND		
Pyrene	0.010	0.020	ND	ND	ND		
2-Methylnaphthalene	0.010	0.020	ND	ND	ND		
Our Lab I.D.			Method Blank	**90981.01**	**90981.02**		
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**		
p-Terphenyl-D14	75-125		122	125	122		

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QUALITY CONTROL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Carmen Aguila
Page: 3

Project ID: 1800272
Project Name: PO# SC12372

AETL Job Number	Submitted	Client
90981	01/19/2018	ATL

Method: (8310), Polynuclear Aromatic Hydrocarbons (SW-846)

QC Batch No: 012518IB1; Dup or Spiked Sample: 0125; LCS: Clean Sand; QC Prepared: 01/25/2018; QC Analyzed: 01/26/2018; Units: mg/Kg

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Benzo(a)anthracene	0.00	0.0500	0.0510	102	0.0500	0.0499	99.8	2.2	75-125	<20
Benzo(a)pyrene	0.00	0.0500	0.0495	99.0	0.0500	0.0487	97.4	1.6	75-125	<20
Naphthalene	0.00	0.500	0.428	85.6	0.500	0.424	84.8	<1	75-125	<20
Surrogates										
p-Terphenyl-D14	0.00	0.400	0.492	123	0.400	0.488	122	<1	75-125	<20

QC Batch No: 012518IB1; Dup or Spiked Sample: 0125; LCS: Clean Sand; QC Prepared: 01/25/2018; QC Analyzed: 01/26/2018; Units: mg/Kg

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Benzo(a)anthracene	0.0500	0.0485	97.0	75-125						
Benzo(a)pyrene	0.0500	0.0471	94.2	75-125						
Naphthalene	0.500	0.412	82.4	75-125						
LCS										
Acenaphthene	0.500	0.468	93.6	75-125						
Acenaphthylene	1.00	0.936	93.6	75-125						
Anthracene	0.0500	0.0520	104	75-125						
Benzo(b)fluoranthene	0.100	0.0993	99.3	75-125						
Benzo(g,h,i)perylene	0.100	0.0930	93.0	75-125						
Benzo(k)fluoranthene	0.0500	0.0510	102	75-125						
Chrysene	0.0500	0.0491	98.2	75-125						
Dibenzo(a,h)anthracene	0.100	0.0961	96.1	75-125						
Fluoranthene	0.100	0.0972	97.2	75-125						
Fluorene	0.100	0.0912	91.2	75-125						
Indeno(1,2,3-cd)pyrene	0.0500	0.0570	114	75-125						
Phenanthrene	0.0500	0.0454	90.8	75-125						
Pyrene	0.0500	0.0467	93.4	75-125						
Surrogates										
p-Terphenyl-D14	0.400	0.472	118	75-125						

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street, Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 1

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver:20130715

Method of Transport	Sample Conditions Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐Client ☐ATL ☑FedEx ☐OnTrac ☐GSO ☐Other:	1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☐	☐
	2. HEADSPACE (VOA)	NA	☐	6. PRESERVED	☐	☐
	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:	6	
	4. SEALED	☐	☑		TCE	

CUSTOMER

Company:	HOLDREGE & KULL	Address:	792 SEARLS AVENUE	Tel:	(530) 478-1305
		City:	NEVADA CITY	State: CA Zip: 95959	Fax: (530) 478-1019

SEND REPORT TO:		SEND INVOICE TO: ☐same as SEND REPORT TO	
Attn:	BRYAN BOTSFORD	Attn:	
Email:	BBOTSFORD@HANDK.NET	Email:	
Company:	HOLDREGE & KULL	Company:	"
Address:	792 SEARLS AVENUE	Address:	"
City:	NEVADA CITY	City:	"
State:	CA	State:	"
Zip:	95959	Zip:	

PROJECT SAMPLES

Project Name: ORR CREEK DIVERSION STRUCTURE
Project No.: 5014-01
Sampler: BOTSFORD
Quote #:
PO #:
Special Instructions/Comments: Note: Total mercury reporting limit should be <0.025 mg/kg.

ITEM	Lab No.	Sample Description: Sample ID / Location	Date	Time	6010 / 7000 (Title 22 Metals)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Total Aluminum (6010B)	Total Hexavalent Cr (7199A)	Moisture Content (D2216)	SVOCs (8270C)	PCBs (8082)	PAHs (8310)	Gas, Diesel, Oil (8015M)	Enter Custom Analysis	Enter Custom Analysis	Enter Custom Analysis	Soil	Select Solid Matrix	Select Water Matrix	Stormwater	Select Aqueous Matrix	Enter Custom Matrix	TAT	Container #	Container Type	Container Material	Preservative	REMARKS
1	1800272-01	OC-SS-1-4	01/17/18		X								X		X	X	X	X	X				X						5	1		2		
2	L -02	OC-SS-5-8	01/17/18		X								X	X	X	X	X	X	X				X						5	1		2		
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		

QA/QC: ☐Routine ☐Caltrans ☐Legal ☐RWQCB ☐Level IV

Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4 = 4C; 5=Zn (Ac)2; 6=NaOH; 7=NA2S2O3

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples submitted AFTER 3:00 PM are considered received the following business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work--- ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab---ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20/ sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

BRYAN BOTSFORD — Submitter Print Name

Signature

CUSTODY

Relinquished by: (Signature and Printed Name)	BRYAN BOTSFORD	Date: 1/17/18	Time: 1400	Received by: (Signature and Printed Name)	Date: 01/18/18 Time: 0944
Relinquished by: (Signature and Printed Name)		Date:	Time:	Received by: (Signature and Printed Name)	Date: Time:
Relinquished by: (Signature and Printed Name)		Date:	Time:	Received by: (Signature and Printed Name)	Date: Time:

APPENDIX B

Photographs

Photo 1 – View to the north from the southern shore of impoundment.

Photo 2 – View of Orr Creek Dam at sampling location OC-SS-5.