DRAFT

Initial Study and Mitigated Negative Declaration

Yuba County Water Agency Narrows 2 Intake Debris Removal Project

May 2021

Lead Agency:

Yuba County Water Agency

1220 F Street
Marysville, CA 95901

Prepared by:

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DRAFT MITIGATED NEGATIVE DECLARATION
YUBA COUNTY WATER AGENCY NARROWS 2 INTAKE DEBRIS REMOVAL PROJECT

Lead Agency:	Yuba County Water Agency
Project Proponent:	Yuba County Water Agency
Project Location:	Narrows 2 Powerhouse Intake at the south end of Harry L. Englebright Lake, Yuba County

Project Description:

The Project involves dredging to remove debris that has accumulated around the Narrows 2 Powerhouse Intake in Englebright Lake. The dredging operation would be conducted by an excavator or crane staged from the existing nearby gravel access road or Narrows 2 Intake Platform. Dredging would remove approximately ±175 cubic yards of woody debris. Dredged debris would be loaded into trucks and transferred to two graveled flat storage areas on top of a nearby hill for dewatering and drying prior to being piled and burned on-site pursuant to a non-agricultural burn permit issued by Feather River Air Quality Management District (FRAQMD), or disposed of at the Recology Ostrom Road Landfill in Wheatland, CA.

Public Review Period: May 7, 2021 - June 7, 2021

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

Aesthetics

AES-1: **Lighting.** To the maximum extent feasible, Project lighting shall be directed and shielded to focus illumination on the desired areas only and avoid directing light into adjacent areas.

Timing/Implementation: *This measure shall be printed on construction plan sets and implemented at all times during construction.*

Monitoring/Enforcement: *YCWA and Project construction lead.*

AES-2: **Implement a Community Outreach Program.** YCWA will provide advance public notification to permanent residents located within sight to the Project regarding planned construction activities, including activities that must be performed at night. Mail and, where feasible, emails to nearby residents at the USACE Englebright Lake Park office and near the Skippers Cove Marina shall be sent notifying them of unavoidable nighttime construction activities prior to construction. Signage shall be posted at the entrance to the Narrows Boat Ramp, Skippers Cove Marina, and USACE park office, visible to the general public, and recreational users of the Englebright Lake and park facilities, with contact information for a

Community Outreach Coordinator for receiving construction-related complaints and to assist in addressing them.

Timing/Implementation: *This measure shall be implemented at all times during construction.*

Monitoring/Enforcement: *YCWA and Project construction lead.*

Biological Resources

BIO-1: **Best Management Practices.** The Project shall implement erosion control measures and best management practices (BMPs) to reduce the potential for sediment or pollutants at the Project site. Measures may include:

- Erosion control measures shall be placed between Waters of the U.S./State, and the outer edge of the staging areas, within an area identified with highly visible markers (e.g., construction fencing, flagging, silt barriers) prior to commencement of construction activities. Such identification and erosion control measures shall be properly maintained until construction is completed and the soils have been stabilized.
- Fiber rolls used for erosion control shall be certified by the California Department of Food and Agriculture as weed free.
- Seed mixtures applied for erosion control shall not contain California Invasive Plant Council designated invasive species (http://cal-ipc.org/) and will be composed of native species appropriate for the site.
- Trash generated onsite shall be promptly and properly removed from the site.
- Any fueling in the upland portion of the Project site shall use appropriate secondary containment techniques to prevent spills.
- A qualified biologist shall conduct a mandatory Worker Environmental Awareness Program for all contractors, work crews, and any onsite personnel on the potential for special-status species to occur on the Project site. The training shall provide an overview of habitat and characteristics of the species, the need to avoid certain areas, and the possible penalties for non-compliance.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-2: **Special-Status Fish.** To avoid and minimize potential adverse effects to special-status fish species (i.e., hardhead), implement the following:

- In-water work activities shall avoid the peak hardhead spawning period of April-May.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-3: **Special-Status Reptiles.** To avoid and minimize potential adverse effects to special-status reptile species (i.e., northwestern pond turtle), implement the following:

- A qualified biologist shall perform a preconstruction clearance survey within 24 hours of the initiation of Project activities.
- If northwestern pond turtles are found within the Project footprint, the qualified biologist, with appropriate scientific collecting permit, shall relocate the turtle(s) to another location on the reservoir shoreline.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-4: **Nesting Birds.** To protect nesting birds, no Project activity shall begin from February 1 through September 15 unless the following surveys are completed by a qualified wildlife biologist. Separate surveys and avoidance requirements are listed below for all nesting birds and raptors, including osprey and bald eagle.

- To the extent feasible, Project activities shall occur prior to the nesting season, September 16 through January 31.
- All Nesting Birds – For Project activities that begin between February 1 and September 15, qualified biologists shall conduct preconstruction nesting bird surveys on and within 100 feet of the Project site. The surveys shall be conducted within 14 days before the beginning of any construction activities. If any active nests are found, impacts to special-status nesting bird species and nesting birds protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code shall be avoided by establishing appropriate buffers around active nests identified during preconstruction surveys; buffers shall be determined by a qualified biologist in consultation with CDFW. Project activity shall not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. The size of the buffer may be adjusted if a qualified biologist and the applicant, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during construction activities may be necessary. If

no active special-status bird and MBTA bird nests are found during preconstruction surveys, no further measures relating to protected birds is necessary

- Raptors (including osprey and bald eagle) – For Project activities that begin between February 1 and September 15, including tree removal, qualified biologists shall conduct preconstruction surveys for osprey, bald eagle, and other raptors to identify active nests on and within 500 feet of the Project site. The surveys shall be conducted within 14 days before the beginning of any construction activities between February 1 and September 15. Impacts to active raptor nests shall be avoided by establishing appropriate buffers around active raptor nests identified during preconstruction surveys; buffers shall be determined by a qualified biologist in consultation with CDFW. Project activity shall not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. The size of the buffer may be adjusted if a qualified biologist and the applicant, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during construction activities may be necessary. If no active nests are found during preconstruction surveys, no further measures relating to protected raptors are necessary.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-5: **Roosting Bat Survey.** To avoid and minimize potential adverse effects to special-status bat species (i.e., western red bat), implement the following:

- If tree or vegetation removal will occur, bat roost surveys shall be conducted by a qualified wildlife biologist within 14 days before any Project initiation. Locations of vegetation and tree removal or excavation will be examined for potential bat roosts. Visual surveys for bats (e.g., observation of bats during foraging period) shall be performed, including inspection for suitable habitat and bat sign (e.g., guano). If bat sign is detected, use of ultrasonic detectors (e.g., SonoBat, Anabat) shall be performed to further characterize the presence of roosts.
- If it is determined that an active roost site cannot be avoided and will be affected, the biologist shall first notify and consult with CDFW on appropriate bat exclusion methods and roost removal procedures. Once it is confirmed that all bats have left the roost, crews will be allowed to continue work in the area.

Timing/Implementation: *If tree removal is required, prior to construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-6: Waters of the U.S./State To avoid or minimize anticipated short-term adverse effects to Waters of the U.S., the Project shall implement the following:

- A Lake and Streambed Alteration (LSA) Notification shall be submitted to CDFW pursuant to California Fish and Game Code 1602 to request authorization to impact aquatic features in the Project site.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

Cultural Resources

CUL-1: Unanticipated Discovery Procedures. If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 50-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead federal agency and YCWA. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be an Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or an Historic Property under Section 106 of the National Historic Preservation Act (NHPA), if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either 1) is not an Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or an Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *YCWA, Project Construction Lead, Professional Archeologist*

CUL-2: **Stop Work if Human Remains Detected.** If the find includes human remains, or remains that are potentially human, the contractor shall ensure reasonable protection measures are taken to protect the discovery from disturbance (Assembly Bill [AB] 2641). The archaeologist shall notify the Yuba County Coroner (as per § 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code (PRC), and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, then the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, and after the mediation process with NAHC is carried out, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work cannot resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *YCWA, Project Construction Lead, Professional Archeologist, Yuba County Coroner*

Tribal Cultural Resources

TCR-1: **Unanticipated Discovery -** If any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within the immediate vicinity of the find, or an agreed upon distance based on the project area and nature of the find. The YCWA shall invite a Tribal Representative from a California Native American tribe that is traditionally and culturally affiliated with the geographic area to make recommendations about whether or not the discovery represents a TCR (PRC § 21074) and, if so, to make recommendations for culturally-appropriate treatment. The contractor shall implement any measures determined by the YCWA to be necessary. Work at the discovery location cannot resume until the treatment has been implemented to the satisfaction of the YCWA.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *YCWA, Project Construction Lead, Tribal Representative*

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APPENDICES

LIST OF TABLES

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ACRONYMS AND ABBREVIATIONS

2018 AQAP	*Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Attainment Plan*
AB	Assembly Bill
AF	Acre-foot
Amsl	Above mean sea level
ANSI	American National Standards Institute
APCO	Air Pollution Control Officer
APN	Assessor Parcel Number
ARD	Aquatic Resources Delineation
BAAQMD	Bay Area Air Quality Management District
BCC	Bird of Conservation Concern
BMPs	Best Management Practices
BP	Before Present
BRA	Biological Resources Assessment
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officer's Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	Cubic feet per second
CGS	California Geographical Survey
CH_4	Methane

CHRIS	California Historical Resources Information System (CHRIS)
CNDDB	California Natural Diversity Database
CNEL	Community noise equivalent level
CO	Carbon monoxide
CO Plan	Federal Attainment Plan for Carbon Monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CRHR	California Register of Historic Places
CRPR	California Rare Plant Rating
CWA	Clean Water Act
Cy	Cubic yard
DO	Dissolved oxygen
DMR	California Department of Conservation
DOC	California Department of Conservation Division of Mine Reclamation
DOF	Department of Finance
DPM	Diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
ECHO	USEAPA's Enforcement and Compliance History Online program
EIC	Eastern Information Center
EIR	Environmental Impact Report
ESA	Endangered Species Act
ESL	Environmental Screening Level
ESU	Evolutionarily Significant Unit
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FRAQMD	Feather River Air Quality Management District
FTA	Federal Transit Administration
GHG	Greenhouse Gas
IS	Initial Study
kWh	Kilowatt hours
LOS	Level of service
LSA	Lake and Streambed Alteration
LST	Localized Significance Threshold
MBTA	Migratory Bird Treaty Act
MEHg	Methylmercury
MLD	Native American Most Likely Descendent
MMT	Million Metric Tons
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone

MSHCP	Multiple Species Habitat Conservation Plan
$MTCO_2e$	Metric tons of carbon dioxide equivalent
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
ND	Negative Declaration
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NTU	Nephelometric turbidity unit
O_3	Ozone
OHV	Off-Highway Vehicle
OHWM	Ordinary High Water Mark
OPR	California Office of Planning and Research
PG&E	Pacific Gas & Electric Company
PG&E	Pacific Gas & Electric Company
PM_{10}	Particulate Matter Less than 10 Microns in Diameter
$PM_{2.5}$	Particulate Matter Less than 2.5 Microns in Diameter
PPV	Peak Particle Velocity
PRC	California Public Resources Code
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Recovery Conservation Act
ROG	Reactive Organic Gases
ROV	Remote operated vehicle
RPR	Resource Preservation and Recreation District
RSL	Regional Screening Levels
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SFRWQCB	San Francisco Regional Water Quality Control Board

SIP	State Implementation Plan
SO_2	Sulfur dioxide
SoCAB	South Coast Air Basin
SP	Service Population
SR	State Route
SRA	Sensitive Receptor Area
SSC	Species of special concern
SVOC	Semi-volatile organic compound
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCR	Tribal Cultural Resource
UAIC	United Auburn Indian Community
UCMP	University of California Museum of Paleontology
USACE	United States Army Corps of Engineers
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	Vehicle miles travelled
VOC	Volatile organic compound
YCSD	Yuba County Sheriff's Department
YCWA	Yuba County Water Agency
YSRWMA	Yuba-Sutter Regional Waste Management Authority
YCWA	Yuba County Water Agency

SECTION 1.0 INTRODUCTION

1.1 Summary

Project Title:	Narrows 2 Intake Debris Removal Project
Lead Agency Name and Address:	Yuba County Water Agency 1220 F Street Marysville, CA 95901
Contact Person and Phone Number:	Jacob Vander Meulen (530) 443-7412
Project Location:	The Project occurs on an approximately two-acre property within Assessor Parcel Number (APN) 005-300-010-000 and 005-300-003-000 located at the southwestern corner of Englebright Lake in unincorporated Yuba County (Figure 1). The Project is located 2.75 miles northeast of Smartsville near the end of Scott Forbes Road, northeast of the junction of Highway 20 and Sicard Flat Road.
General Plan Designation:	Natural Resources Land Use
Zoning:	Resource Preservation and Recreation District (RPR)

The Yuba County Water Agency (YCWA) is the Lead CEQA Agency for this Project. An Initial Study has been prepared to identify and assess the anticipated environmental impacts of the Narrows 2 Intake Debris Removal Project (Project). This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Pub. Res. Code, Section 21000 *et seq.*) and State CEQA Guidelines (14 CCR 15000 *et seq.*). CEQA requires that all state and local government agencies consider the environmental consequences of Projects over which they have discretionary authority before acting on those Projects.

1.2 Surrounding Land Uses/Environmental Setting

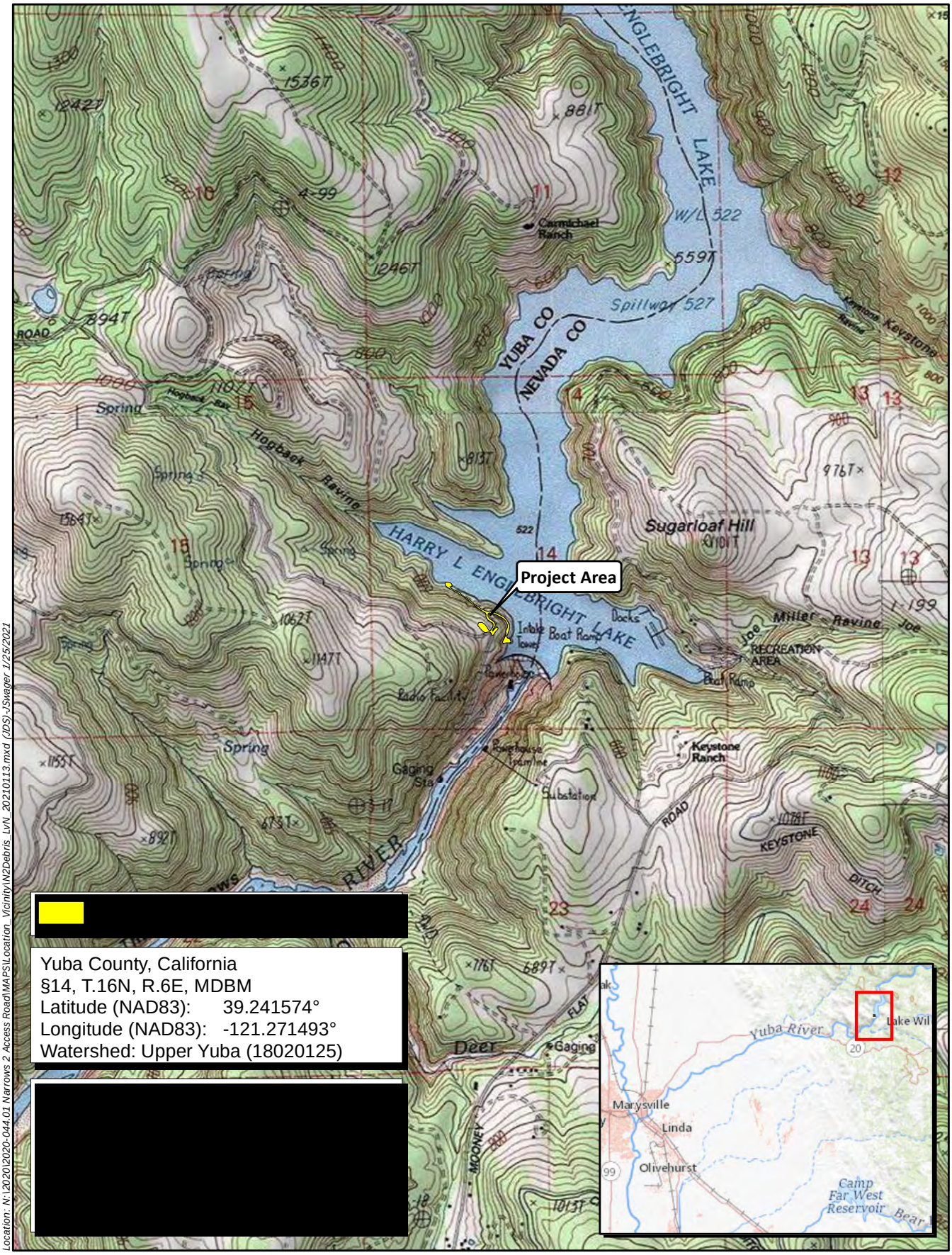
The Project Area is situated on the western slopes of the Sierra Nevada Mountains above the northern Sacramento Valley on the shore of Harry L. Englebright Lake, a reservoir on the Yuba River nestled among steeply climbing slopes and deep ravines (see Figure 1 – Project Location and Vicinity). Elevations in the Project Area range from 525 feet above mean sea level (amsl) at the reservoir shoreline, and up to approximately 675 feet amsl at the debris storage areas on the hill above the Narrows 2 intake debris removal site. Ridgelines surrounding Englebright Lake reach up to approximately 1,300 feet in elevation.

In general, the vegetation community found on the shoreline and immediately adjacent to the Study Area is *Pinus sabiniana* Woodland Alliance (foothill pine woodland).

The areas utilized for the Project are mostly previously-disturbed, graded and graveled access roads and equipment/material storage pads adjacent to these roads used by the United States Army Corps of Engineers (USACE), Yuba Water Agency (YCWA), University of California, Sierra Foothill Research and Extension Center, and other public agencies for maintenance, construction, and environmental conservation associated with Englebright Reservoir, dam, and Narrows 2 Powerhouse. The access roads used within the Project area are not used by the general public and do not lead to public recreational areas or trails. The approximately 30 feet high lake bank in the debris removal area of the Project is a combination of nearly vertical rock and concrete retaining wall to support the access road.

Recreational uses at Englebright Lake include: day-use picnic areas, boat-in campgrounds, fishing, water skiing, and hiking. The nearest boat-in campgrounds to the Project area is the Bonanza Point boat-in campground, approximately 0.15 miles north of the Project boat ramp, and Hogback Campground approximately 0.25 miles Northwest of the Project boat ramp. USACE's Englebright Lake Park office and employee housing, public picnic area, and public boat ramp are approximately 0.15 mile east of the Project area across the lake on the other side of the dam. Skipper' s Cove Marina (including houseboat mooring, store, boat fueling, and rentals) is 0.33 mile east of the Project area across the Lake.

The Project's debris removal area in the lake is within the buoy-lined and signed "no boating/wake" zone due to its proximity to the dam.



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Map Date: 1/25/2021
Sources: ESRI, USGS, YCWA

Figure 1. Project Location and Vicinity

2020-044.01 YCWA - Narrows 2 Intake Debris

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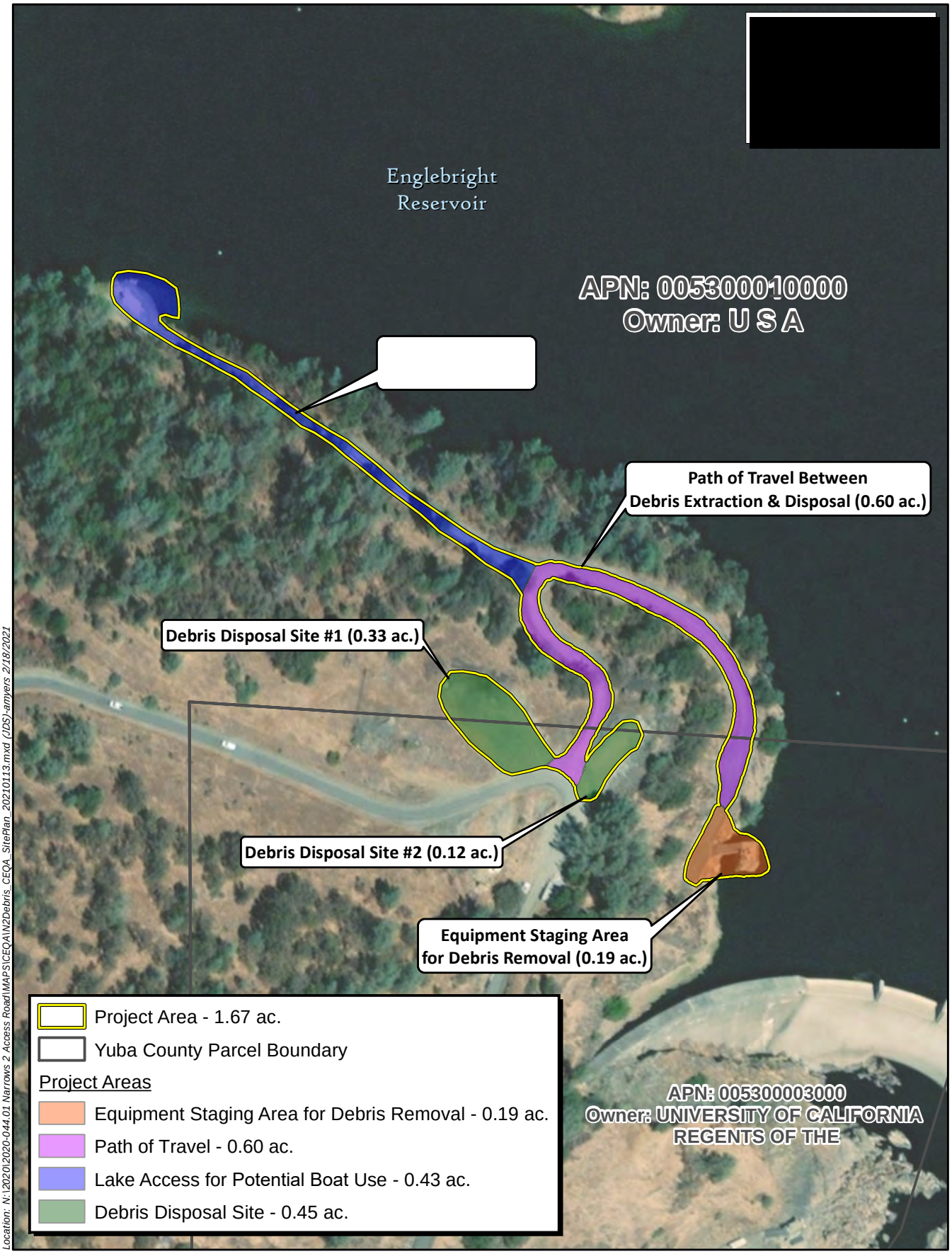

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Map Date: 2/18/2021
Source:ESRI, YCWA, Maxar (2020), Yuba County

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Figure 2. Project Site Plan

2020-044.01 YCWA - Narrows 2 Intake Debris

SECTION 2.0 PROJECT DESCRIPTION

2.1 Project Background

For the Yuba Water Agency Narrows 2 Intake Debris Removal Project (Project), the Yuba Water Agency (YCWA) plans to clear woody debris that has deposited in front of the Narrows 2 Powerhouse intake, immediately upstream of the USACE's Englebright Dam, at the south end of Harry L. Englebright Lake in unincorporated Yuba County (Figure 1. *Project Location and Vicinity)*.

Englebright Dam is a 280-foot (85-meter) dam on the Yuba River in the Sacramento River Basin, located in Yuba and Nevada counties of California. The Narrows 2 Powerhouse is located on the Yuba County side of the dam.

The dam was constructed in 1941 for the primary purpose of trapping sediment derived from anticipated hydraulic mining operations in the Yuba River watershed. Hydraulic mining in the Sierra Nevada was halted in 1884 but resumed on a limited basis until the 1930s during the Great Depression under the California Debris Commission. Although no hydraulic mining in the upper Yuba River watershed resumed after the construction of the dam, the historical mine sites continued to deposit sediment in the river. Today, Englebright Lake is used primarily for recreation and hydropower.

The 70,000-acre-foot (AF) Englebright Reservoir provides water-based recreational benefits to the region and provides 45,000 AF of stored water-right capacity, which is released each year through dam operations to benefit fish downstream. Water is also diverted for regional domestic and agricultural uses. Hydroelectric generation from water stored behind the Englebright Dam produces about 294 million kilowatt hours (kWh) of energy each year, or enough for the annual energy needs for 50,000 homes.

The Narrows 2 Powerhouse was constructed as part of YCWA's Yuba River Development Project, Federal Energy Regulatory Commission [FERC] Project No. 2246. The Narrows 2 consists of one penstock (i.e., a channel for conveying water to a turbine), one power tunnel, and one powerhouse situated on the main stem of the Yuba River. The penstock and power tunnel are adjacent to the western flank of the Englebright Dam. The Narrows 2 Powerhouse is downstream from the tunnel and penstock, which provide water flow to the turbine in the powerhouse. The Narrows 2 facility was built as a supplement to the Narrows 1 Powerhouse facility across the river (YCWA 2007). Pacific Gas & Electric Company (PG&E) used flows from the Englebright Reservoir to operate and maintain its Narrows 1 Powerhouse under a separate FERC license until YCWA purchased and took over the license for the Narrows 1 Powerhouse from PG&E on March 31, 2020.

A new flow bypass system, comprising a full bypass and a partial bypass, was installed in 2006 by YCWA so river flow requirements can be met during full or partial shutdowns of the Narrows 2 Powerhouse at the base of the dam (YCWA 2007). The Narrows 2 Powerhouse Full Bypass is located adjacent to and east of the Narrows 2 Powerhouse, and has a maximum capacity of 3,000 cubic feet per second (cfs) (FERC 2019). The Narrows 2 Partial Bypass is located on the downstream or western wall of the Narrows 2 Powerhouse, and has a maximum capacity of 650 cfs (FERC 2019).

As indicated in the Final Environmental Impact Statement for Hydropower License for the Yuba River Development Project No. 2246-065 (FERC 2019), the Narrows 2 Powerhouse is operated as a baseload facility. Although the Narrows 2 Powerhouse uses flows from the Englebright Reservoir, the USACE owns and maintains the Englebright Dam and Reservoir. Except in emergencies, YCWA makes reasonable efforts to operate the Narrows 2 Powerhouse to avoid fluctuations in the flow of the lower Yuba River downstream of Englebright Dam. Under the existing FERC license, YCWA maintains the following at the Englebright Reservoir:

1. Flow releases required by USACE flood control criteria;
2. Flow releases required to maintain a flood control buffer or for other flood control purposes;
3. Bypasses of uncontrolled flows into Englebright Reservoir;
4. Uncontrolled spilling; and
5. Uncontrolled flows of tributary streams downstream of Englebright Reservoir.

YCWA coordinates releases from the Narrows 2 Powerhouse, full bypass, partial bypass, and Narrows 1 Powerhouse in accordance with the streamflow requirements in Article 33 of the existing license for the Yuba River Development Project No. 2246 and Article 402 of the license for the Narrows Project No. 1403 (FERC 2019).

In addition to the current license requirements, YCWA has operated the Narrows 2 Powerhouse consistent with the Yuba Accord since 2006, when a pilot project was started to study the effects of changes in flow on environmental resources. The Yuba Accord was developed by a multi-agency resource team, including representatives from the National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service, California Department of Fish and Wildlife (CDFW), and a group of non-governmental organizations to benefit fish habitat downstream. The Yuba Accord was signed in 2007 and incorporated into the YCWA water right permits in 2008. The Yuba Accord includes a specific set of flow schedules for the Yuba River and the flows specified by the Yuba Accord are currently being implemented by YCWA.

2.2 Project Objectives

The objective of the Project is to remove debris from the intake for the Narrows 2 Powerhouse at the base of the dam to maintain adequate water flows used for hydroelectric power generation, agricultural water supply, recreational uses, and fish habitat in the Yuba River.

2.3 Project Characteristics

The Project Area, as shown on Figure 2. *Project Site Plan*, comprises approximately 1.67 acres of land surrounding the Narrows 2 Powerhouse intake structure immediately upstream of Englebright Dam that includes the following:

1. The debris removal area;
2. The powerhouse intake platform;
3. The steep rocky lake slope between the access road and lake water line;
4. A portion of a 15 foot-wide gravel access road; and

5. Two storage/staging areas.

The Project will utilize two existing gravel-lined debris storage/staging areas on either side of the gravel access road located approximately 250 feet west of the debris removal location, one approximately 0.33 acre and one approximately 0.12 acre, (see Figure 2). The Project Area also includes the potential use of a dirt boat ramp approximately 1,150 feet northeast of the debris removal location for potential boat access if personnel are needed to guide equipment from the land via visual from the lake. Most of the Project Area, including the debris removal area of the lake, and the majority of the two debris disposal sites, are on land owned by the Regents of the University of California for use by their Sierra Foothill Research and Extension Center. The northern areas of the Project, including most access roads and the northern half of debris disposal site #1, is on land owned by the USA, and operated by USACE. The Englebright Dam is not included in the Project Area. Representative site photographs of existing conditions of the Project Area are provide in Figures 3a and 3b. *Representative Site Photographs*.

Project activities include removing an estimated 175 cubic yards (cy) of woody debris from below the lake waterline using a land-based excavator equipped with a clamshell bucket, or similar equipment staged on the 15-foot-wide gravel access road near the powerhouse intake structure. Debris will be excavated from the lake and placed into dump trucks for subsequent stockpiling in the debris storage/staging areas. Stockpiled debris would be dried and burned onsite under a non-agricultural burn permit issued by Feather River Air Quality Management District (FRAQMD). The only potential ground disturbance associated with the Project would be scraping the gravel and upper few inches of soil within portions of the two debris storage/staging areas during debris stockpiling and disposal activities.

Alternatively, if potential seasonal restrictions or other logistical issues arise, debris may be loaded into dump trucks for disposal offsite at the Recology Ostrom Road Landfill in Wheatland, California. Debris would be trucked approximately 900 feet down the existing facility access road and then approximately 37 miles one-way to the Ostrom Road Landfill. The proposed haul route is shown in Figure 4. *Proposed Disposal Haul Route*. Based on the assumption that each dump truck can carry 15 cy of material, disposal of 175 cy of debris offsite would take approximately 12 truck trips.

In summary, the following heavy equipment will be used for the Project:

- Tracked excavator or crane to remove debris from lake;
- Dump trucks;
- Excavator or front loader to load/unload debris from dump trucks at the temporary storage areas;
- Water truck; and
- Small motorboat for personnel transport to the debris removal site in lake.

YCWA is required to have no flow through the Narrows 2 intake during the Project work. All flow will be directed through the Narrows 1 intake and Powerhouse. The project will need to be conducted during a drought year to accommodate this.

2.4 Project Timing

The Project is scheduled to begin in late 2021 (if 2021 is determined to be a drought year) and will require approximately 30 days to complete. However, if debris burning on-site is not allowed in the Fall, it could occur outside of this 30-day window. No more than 10 construction workers at any one time would be required to implement the Project. While nighttime work is not anticipated, there is a chance that it may be required during the Project. In the event of night work, light plants with 50-horsepower generators would be used. Generators required for light plants are assumed to qualify under the California Air Resources Control Board Portable Equipment Registration Program.

2.5 Regulatory Requirements, Permits, and Approvals

The following approvals and regulatory permits would be required for implementation of the Proposed Project:

The following approvals and regulatory permits would be required for implementation of the Project:

- California Department of Fish and Wildlife (CDFW) - 1602 Streambed Alteration Agreement notification
- FERC – Notification for activities within FERC boundary
- Feather River Air Quality Management District (FRAQMD) – Fugitive Dust Control Plan and Non-Agricultural Burn Permit

2.6 Consultation with California Native American Tribe(s)

The following California Native American tribes traditionally and culturally affiliated with the project area have been notified of the project: Shingle Spring Band of Miwok Indians, and United Auburn Indian Community (UAIC) of Auburn Rancheria. Both these tribes have requested consultation pursuant to Public Resources Code section 21080.3.1. A summary of the notification process is provided in Section 4.18 of this Initial Study.

Debris removal area in lake on north side of Narrows 2 Intake Platform, looking West at cliff bank.

Eastern Debris Storage/Laydown Area, looking East

Western Debris Storage/Laydown Area, looking Northwest.

Gravel access road to boat ramp, looking North.

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Figure 3a. Representative Site Photographs

Access Road at Debris Removal Area near Narrows 2 Intake Platform, looking North.

Dirt Boat Ramp, looking North

Narrows 2 Intake Platform Area, looking North

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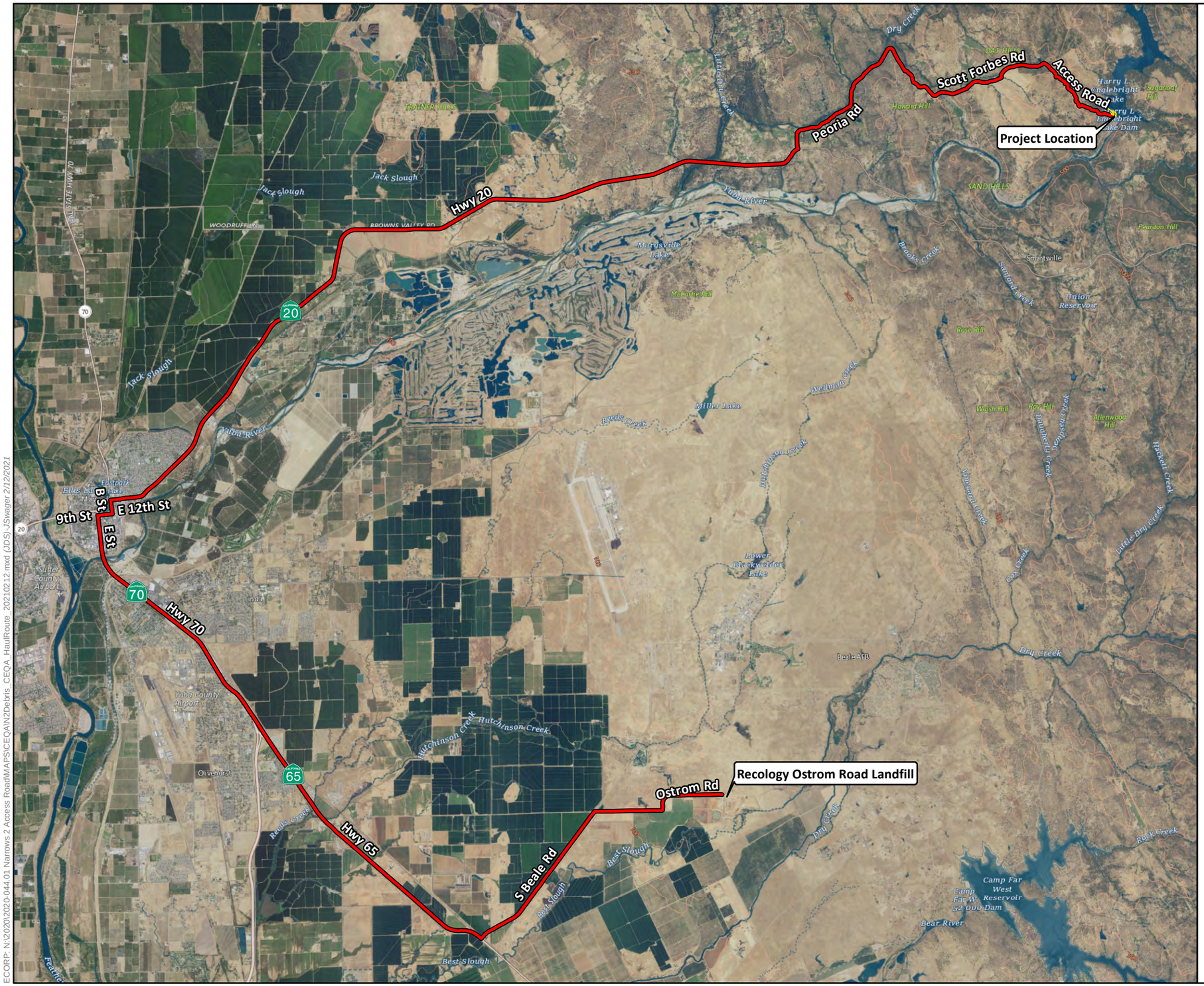
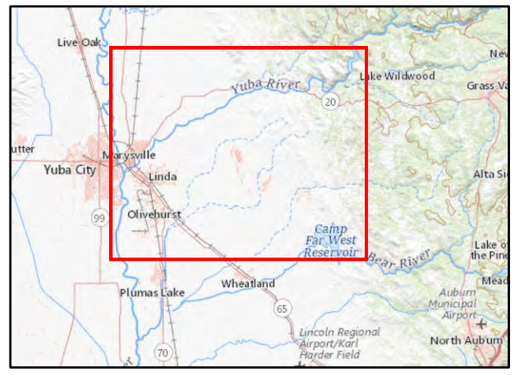
Figure 3b. Representative Site Photographs



Map Features

- Project Area
- Haul Route

Sources: ESRI, USGS, YCWA, Yuba County



ECORP: N:\2020\2020-044.01 Narrows 2 Access Road\MAPS\CEQA\N2Debris_CEQA_HaulRoute_20210212.mxd (JDS) JSwager 2/12/2021

Map Date: 2/12/2021

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Figure 4. Proposed Disposal Haul Route

202-044.01 YCWA - Narows 2 Intake Debris

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

Determination

On the basis of this initial evaluation:

I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☐
I find that although the Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	☒
I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	☐
I find that the Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	☐
I find that although the Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Project, nothing further is required.	☐

Jacob Vander Meulen Environmental Compliance Officer Yuba County Water Agency		 Date: 05/06/2021

SECTION 4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

The Proposed Project is set near the Englebright Dam and Narrows 2 Powerhouse Intake Platform and near the Lake Recreation Area. The areas utilized for the Project are mostly previously-disturbed, graded and graveled access roads and equipment/material storage pads adjacent to these roads used by the USACE, YCWA, University of California Foothills Research and Extension Center, and other public agencies for maintenance, construction, and environmental conservation associated with Englebright Reservoir, dam, and Narrows 2 Powerhouse and intake infrastructure. The access roads used within the Project area are not used by the general public and do not lead to public recreational areas or trails. The approximately 30 feet high lake bank in the debris removal area of the Project is a combination of nearly vertical rock and concrete retaining wall to support the access road.

Recreational uses at Englebright Lake based on the Nevada County (eastern) shore include: day-use picnic areas, boat-in campgrounds, fishing, water skiing, and hiking. The Project's debris removal area in the lake is within the buoy-lined and signed "no boating/wake" zone due to its proximity to the dam.

Regional Setting

State Scenic Highways

The California Scenic Highway Program protects and enhances the scenic beauty of California's highways and adjacent corridors. A highway can be designated as scenic based on how much natural beauty can be seen by users of the highway, the quality of the scenic landscape, and if development impacts the enjoyment of the view (California Department of Transportation [Caltrans] 2020a). According to the Final 2030 Yuba County General Plan Environmental Impact Report (AECOM 2011) there are no officially designated State Scenic Highways in Yuba County, although Highway 49 is an eligible highway. State Highway 49 is not in the viewshed of this Project.

The following goals and policies of the Yuba County 2030 General Plan (Yuba County Community Development and Services Agency 2011) are applicable to the Project:

Policy CD11.5: The County will support agriculture, agricultural processing, agricultural tourism, ecological tourism, recreational uses, and other natural-resource based economic development projects in areas with land-based natural resources, natural beauty, and cultural attractions.

Policy NR9.1: New developments near the Yuba, Bear, and Feather Rivers should be designed and located in a way that retains or enhances scenic views of these important visual resources.

Policy NR9.3: Development in Rural Communities should be designed to preserve important scenic resources, landmarks, and icons that positively contribute to the rural character.

Policy NR9.6: Grading and drainage for new developments in foothill and mountain areas should preserve and take advantage of the natural landforms and vegetation.

Policy NR10.2: The County will encourage the preservation of healthy, attractive native vegetation during land development. Where this is not feasible, the County will require landscaping that uses climate-appropriate plant material.

Policy NR11.4: To the maximum extent feasible, new developments shall avoid adverse light and glare effects on adjacent roads, neighboring properties, and pedestrian areas through careful location of on-site lighting, use of non-reflective paint and building materials, screening or shielding light at the source, use of vegetation screening, use of directional lighting, use of lower intensity lighting, use of timing devices or sound/motion-controlled lighting, or other equally effective means

Visual Character of the Project Site

As shown on Figures 3a and 3b, the Project site consists of areas of proposed debris removal within and adjacent to the lake and intake platform, and two graded debris storage/staging areas on top of a nearby 675-feet hill. An existing dirt boat ramp will only be used periodically to launch small boats, if necessary. The existing paved and graveled Narrows 2 Powerhouse access road will be used by dump trucks to transfer removed debris to the two storage/staging areas. As shown on Figures 2, 3a, and 3b, the debris removal area consists of open water, a graveled access road built into a steep rocky hillside, and small section of steep, bare rock lake bank. The two graded and graveled debris storage areas on the hill above the Narrows 2 intake debris removal site are surrounded by a sparse herbaceous layer of natural grassland and shrubs, and foothill pine woodland.. These two storage/staging areas are periodically used by USACE, University of California, and other public agencies, for storing building materials, construction debris, and excavated dirt and rock associated with maintenance and construction of the Englebright Lake hydroelectric and water infrastructure. Similar vegetation borders and covers portions of the Project access roads. The Project boat ramp is a small open area of shoreline bordered by sparse wetland vegetation near the lake bank, and thick woodland canopy. Ridgelines across Englebright Lake within view of the Project Area reach up to approximately 1,100 feet in elevation, although most existing habitable structures on these hillsides occur below 700 feet amsl.

Public Views of the Project Site

The Project site is located along the western Englebright Lake shoreline, a locally scenic viewshed, comprising portions of the Englebright Lake and surrounding wooded hills. The main public groups that have views of the Project Area consist of people engaged in recreational activities on or around the southern end of Lake Englebright, including picnickers, boaters, hikers, and boat-in campers. A few rural residences around Skipper's Cove Marina approximately 0.33-0.5 mile across the lake, and workers living

at USACE's Englebright Lake Park office and employee housing approximately 0.15 mile to the east, also have views of the Project Area. The nearest boat-in campgrounds to the Project area are approximately 0.15 miles north of the Project boat ramp, and Hogback Campground approximately 0.25 miles Northwest of the Project boat ramp; views of the Project site are obstructed by hills and trees.

4.1.2 Aesthetics (I) Environmental Checklist and Discussion

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

Less than Significant Impact

During debris removal operations there will be vehicles and equipment located within the Project site, on Englebright Lake near the Narrows 2 Hydroelectric Intake platform, access roads, and storage/staging areas on top of the hill above the platform. Piles of woody debris less than 20 feet in height may remain within the staging areas for a few months following removal from the lake to dry if burning is chosen as the method of disposal. In addition, the woody debris piles may be burned within the storage areas creating plumes of smoke visible for miles around the vicinity during these day(s). However, these Project activities will be temporary and will cease once removal and disposal operations are completed. Once removal operations are completed, the removal site would return to the natural condition of the lake. As such, the Project would not alter the viewshed or scenic vista of the site over the long term. Therefore, The Project would have a less than significant impact on scenic vistas.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

No Impact

The Project is not located within the vicinity of any scenic resources or an officially designated scenic highway. No impact would occur.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐

Less than Significant Impact

During debris removal and disposal operations there will be vehicles and equipment located within the Project site. However, these uses will be temporary and will cease once removal and disposal operations are completed. After completion, the removal site would return to the natural condition of the lake. As such, the Project would not result in the degradation of the visual character of the site or impact public views of the site and its surroundings. The Project would have a less-than-significant impact in this area.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

Less than Significant Impact with Mitigation Incorporated

The Project would involve use of a small boat and heavy equipment at the debris removal site near the Narrows 2 Intake Platform at the lake, and heavy equipment and dump trucks on access roads and at the two debris storage areas on top of the nearby hill. In order to complete the Project within the seasonal restrictions for in-water work, it may be necessary for work to be performed at night. In the event of night work, light plants with 50-horsepower generators would be used at the debris removal site and at the debris storage/staging areas on the hill. A spotlight may also be used from the powerboat on the lake at the debris removal site. Impacts would be temporary, however, night lighting has the potential to result in a short-term nuisance for temporary residents located within 0.5 mile to the Project on houseboats or to USACE employees housed at the park headquarters on the east side of the Englebright dam. Impacts would be adverse and significant without mitigation.

Mitigation measure **AES-1** would require, to the maximum extent feasible, that only the minimal amount of lighting necessary to perform Project activities would be used, that light fixtures shall be shielded, and that directing light into adjacent areas shall be avoided. In addition, mitigation measure **AES-2** shall require implementation of a Community Outreach Program where residents located near the Project shall be notified of nighttime work and the contact information for a Community Outreach Coordinator shall

be provided for receiving construction-related complaints and for assisting in addressing them. With implementation of these two measures, significant short-term impacts on lighting in the area would be reduced to less-than-significant levels.

4.1.3 Mitigation Measures

AES-1: **Lighting.** To the maximum extent feasible, Project lighting shall be directed and shielded to focus illumination on the desired areas only and avoid directing light into adjacent areas.

Timing/Implementation: *This measure shall be printed on construction plan sets and implemented at all times during construction.*

Monitoring/Enforcement: *YCWA and Project construction lead.*

AES-2: **Implement a Community Outreach Program.** YCWA will provide advance public notification to permanent residents located within sight to the Project regarding planned construction activities, including activities that must be performed at night. Mail and, where feasible, emails to nearby residents at the USACE Englebright Lake Park office and near the Skippers Cove Marina shall be sent notifying them of unavoidable nighttime construction activities prior to construction. Signage shall be posted at the entrance to the Narrows Boat Ramp, Skippers Cove Marina, and USACE park office, visible to the general public, and recreational users of the Englebright Lake and park facilities, with contact information for a Community Outreach Coordinator for receiving construction-related complaints and to assist in addressing them.

Timing/Implementation: *This measure shall be implemented at all times during construction.*

Monitoring/Enforcement: *YCWA and Project construction lead.*

4.2 Agriculture and Forestry Resources

4.2.1 Environmental Setting

The California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program, which identifies and maps significant farmland. Farmland is classified using a system of five categories including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS). The DOC manages an interactive website, the California Important Farmland Finder which can be used to identify the farmland classification of a specific area. This website program identifies the lands in the Project vicinity as being Other Land (DOC 2021a). DOC defines Other Lands land not included in any other mapping category. Common examples include: brush, timber, wetland, and riparian lands not suitable for agriculture and livestock grazing.

Public Resources Code (PRC) Section 12220(g) defines forest land as "land that can support 10-percent 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."

PRC Section 4526 defines timberland as "land, … which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis."

The Project site is zoned by Yuba County as Resource Preservation and Recreation (RPR). The purpose of the RPR district is to:

a. Preserve land containing natural or potential parkland for passive recreational activities and nonstructural uses.

b. Identify lake recreation areas and to provide for use of these areas for active public recreation purposes.

c. Preserve lands whose natural resources are of significant long-range social, economic, and environmental importance.

d. Preserve open space and identify high quality plant areas, critical wildlife habitat, and critical watershed lands in the County.

e. Preserve lands from residential development.

The Project is on property owned and managed by USACE used to service Englebright Dam and the Narrows 1 and 2 Powerhouses, and by University of California for use associated with the Sierra Foothills Research and Extension Center. The vegetation community immediately adjacent to the Project area is foothill pine woodland, and meets the definition of forest land under PRC Section 12220(g), but not timberland under PRC Section 4526.

4.2.2 Agriculture and Forestry Resources (II) Environmental Checklist and Discussion

Would the Project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

No Impact

According to the DOC (2021a), the site is identified as Other Land. The Project would not involve any permanent ground disturbance. As such, the Project would not have the potential to convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance into non-agricultural use. There would be no impact.

Would the Project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

No Impact

The Project is located within an existing recreational area. The removal of debris from the area would not have any effect on Williamson Act lands. The Project would have no impact.

Would the Project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

No Impact

No land designated as forest lands exist on the Project site or within the vicinity of the Project. The Project would have no impact.

Would the Project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

No Impact

Although forest lands are adjacent to the Project area, Project activities will occur only on unvegetated land that has been previously disturbed, graveled, and paved, or within the lakebed. Thus, the Project would have no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

No Impact

The Project would remove existing debris within the boundaries of Englebright Lake and store and dispose of debris within existing graveled storage/staging areas previously used for similar purposes by others. This removal work would not affect agricultural or forest land. Therefore, the Project would have no impact.

4.2.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.3 Air Quality

4.3.1 Environmental Setting

The Narrows 2 Powerhouse Project (Project) is located in unincorporated Yuba County (County). The California Air Resource Board (CARB) has divided California into regional air basins according to topographic features. Yuba County is located in a region identified as the Northern Sacramento Valley Air Basin (NSVAB). The NSVAB comprises all of Butte, Colusa, Placer, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba counties and the eastern portion of Solano County.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. CARB divides the state into air basins that share similar climatological, meteorological, and topographical features. The air basin is subject to a combination of topographical and climatic factors that influence the potential for high levels of regional and local air pollutants. The air basin is relatively flat, bounded on the north and west by the Coastal Mountain Range and on the east by the southern end of the Cascade Mountain Range and the northern end of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet above mean sea level, with individual peaks rising much higher. Air flows into the NSVAB through the Carquinez Strait, moving across the Sacramento Delta, and bringing with it pollutants from the heavily populated San Francisco Bay Area. The mountains form a substantial physical barrier to this transported pollution as well as locally created pollution. The climate is characterized by hot, dry summers and cool, rainy winters. Characteristics of NSVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storm systems. From May to October, the region's intense heat and sunlight lead to high ozone pollutant concentrations. Summer inversions are strong and frequent but are less troublesome

than those that occur in the fall. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

Both the US Environmental Protection Agency (USEPA) and CARB have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are ozone (O_3), carbon monoxide (CO), particulate matter (PM), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The portion of the County encompassing the Project site is designated as a nonattainment area for O_3 and coarse particulate matter (PM_{10}) under the State standards (CARB 2019). The County is designated as attainment or unclassified for all pollutants under the federal standards.

4.3.2 Regulatory Framework

Feather River Air Quality Management District

The Project site is located within the NSVAB, which is under the jurisdiction of the Feather River Air Quality Management District (FRAQMD). The FRAQMD is designated by law to adopt and enforce regulations to achieve and maintain ambient air quality standards. The FRAQMD, along with other air districts in the NSVAB, has committed to jointly prepare and implement the *NSVAB Air Quality Attainment Plan* for the purpose of achieving and maintaining healthful air quality throughout the air basin. In addition, the FRAQMD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs, and it regulates agricultural burning.

The following is a list of noteworthy FRAQMD rules and regulations that are required of activities associated with the proposed Project:

- **Regulation IV (Stationary Emission Sources Permit System and Registration)** – requires that most projects using equipment capable of releasing emissions to the atmosphere obtain permit(s) from FRAQMD prior to equipment operation. Specifically, portable construction equipment (e.g. generators, compressors, pile drivers, lighting equipment) with an internal combustion engine over 50 horsepower are required to have a FRAQMD permit or a CARB portable equipment registration.
- **Rule 2.0 (Open Burning)** – The purpose of this rule is to ensure open burning in the District is conducted in a manner that minimizes emissions and smoke and is managed consistent with State and federal law. The following General Burn Requirements, Conditions and Practices are applicable to the proposed Project:

    1. **Permit Required**: No person shall ignite any open fire, conduct, perform or participate in any open burning activity, or allow the open burning activity on any property under the person's possession without first obtaining a valid burn permit issued by the Air Pollution

Control Officer (APCO) and follows the conditions specified on the permit and these rules and regulations.

(a) Each applicant for a burn permit shall provide such information as is required by the District or the designated fire protection agency for fire protection purposes.
(b) Fees for permitting shall be recovered in accordance with District Regulation VII.

2. **Right of Way, Levee, Reservoir, and Ditch Clearing**: Right of way, Levee, Reservoir, and Ditch Clearing conducted by a public entity or utility shall require a District permit in accordance with this regulation.

(a) The material shall be prepared by stacking, drying, or other methods to promote combustion.

3. **Compliance**: No person shall ignite any open fire, conduct, perform or participate in any open burning activity, or, allow the open burning activity on any property under the person or land manager's responsibility, in violation of any State law, Statute, District Rule or Regulation, or burn permit issued by the APCO pursuant to these Rules and Regulations. Any open burning which is not in full and complete compliance with the provisions of these Rules and Regulations is in violation of these Rules and Regulations.
4. **Fire Control**: All fires shall be reasonably controlled and contained so that the fire does not escape.
5. **Suspension of Burning Privilege**: The APCO may suspend all burn privileges for any person or location for any violation of this rule.
6. **Ignition Devices**: All open fires shall be ignited with an approved ignition device.
7. **Smoke Minimization**: All vegetative wastes to be burned shall be reasonably free of dirt, soil, visible surface moisture, and moisture content to minimize smoke.

(a) To lower the moisture content of vegetative waste, the elapsed time between cutting, felling, or uprooting and ignition or burning shall be:

(1) Forty-five (45) days for trees and large branches 6" in diameter or greater.
(2) Thirty (30) days for prunings and small branches 3" to less than 6" diameter.
(3) Fifteen (15) days for fine prunings 0" to less than 3" diameter.

(b) All burnable waste shall be arranged so that it will ignite as rapidly as practicable within applicable fire control restrictions and burn with a minimum amount of smoke.
(c) Tree stumps shall not be burned in place.

- **Prohibited Materials:** All open fires shall be free of prohibited materials as specified in section E.15 "Prohibited Materials":

(a) Prohibited Materials means any waste or manufactured material, including but not limited to petroleum products and petroleum wastes; construction and

demolition wastes; lumber; tar paper; roofing material; wiring; flooring material; insulation; plywood; coated wire; putrescible wastes; tires; tar; wood waste; processed or treated wood products; metals; motor vehicle bodies or parts; rubber; synthetics; plastics, including plastic film, twine and pipe; fiberglass; Styrofoam; garbage; trash; refuse; rubbish; disposable diapers; ashes; glass; industrial wastes; equipment; appliances; furniture; instruments; utensils; mattresses; shoes; cloth; rags; paper and paper products; cardboard; boxes; crates; excelsior; offal; swill; carcass of any dead animal; manure; human or animal parts or wastes, including blood and fecal matter or food contaminated material; or any other non-vegetative material that when burned may discharge air contaminants that may cause a health risk to any person.

- **Designated Burn Hours:** Only that amount of waste that can reasonably be expected to completely burn within the burn hours shall be ignited on any one (1) day.

  (a) Dry trees, uprooted stumps, and branches greater than six (6) inches in diameter may be ignited even though they cannot reasonably be expected to completely burn within the burn hours after approval from the APCO.

- **Wind Direction**: Burning shall not be ignited when the wind direction is such that smoke from the burning of such waste would be blown or carried into a nearby-populated area and could create a public nuisance.

- **Burning of Vines or Bushes Treated with Herbicides:** Vines or bushes may be burned in place without being cut or uprooted if they are treated and desiccated with herbicides and allowed to dry completely prior to ignition or burning.

- **Transportation of Burnable Materials**: All vegetative material to be burned pursuant to this rule shall be burned on the property where the material was grown. No material may be transported to another location to be burned.

- **Rule 2.0 Exemptions** (Right-of-Way Clearing): Burning by a public entity or utility for right-of-way clearing or other property access, or for levee, reservoir, ditch, or drainage maintenance authorized pursuant to Section K.5 "Right of Way, Levee, Reservoir, and Ditch Clearing".

- **Rule 3.16 (Fugitive Dust)** –This rule states that developers or contractors are required to control dust emissions from earth moving or any other construction-related activities to prevent airborne dust from leaving a project site. Developers and/or contractors must take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation. Rule 3.16 is enforced through the requirement of preparation of a Fugitive Dust Control Plan, which identifies the dust suppression measures to be employed. Reasonable precautions shall include, but are not limited to:

- use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, construction of roadways, or the clearing of land;
- application of asphalt, oil, water, or suitable chemical on dirt roads, material stockpiles, and other surfaces which can give rise to airborne dusts;
- other means approved by FRAQMD.

- **Rule 4.1 (Permit Requirements)** – Any person operating an article, machine, equipment, or other contrivance, the use of which may cause, eliminate, reduce, or control the issuance of air contaminants, shall first obtain a written permit from FRAQMD.

4.3.3 Air Quality (III) Environmental Checklist and Discussion

Would the Project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒

No Impact

As previously mentioned, the Project site is located within the Yuba County portion of the NSVAB, which is under the jurisdiction of the FRAQMD. The FRAQMD is required, pursuant to the federal Clean Air Act (CAA), to reduce emissions of criteria pollutants for which the NSVAB is in nonattainment. The FRAQMD is the agency responsible for enforcing many federal and state air quality requirements and for establishing air quality rules and regulations. The FRAQMD attains and maintains air quality conditions in Yuba County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. As part of this effort, the FRAQMD has developed input to the State Implementation Plan (SIP), which is required under the federal CAA for areas that are out of attainment for air quality standards. The SIP includes the FRAQMD's plans and control measures for attaining the O_3 national ambient air quality standards. Pollutant control strategies are based on the latest scientific and technical information and planning assumptions, and updated emission inventory methodologies for various source categories. A project conforms with the FRAQMD attainment plans if it complies with all applicable district rules and regulations, complies with all control measures from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). A project is nonconforming if it conflicts with or delays implementation of any applicable attainment or maintenance plan.

FRAQMD is the agency primarily responsible for ensuring that National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are not exceeded and that air quality conditions are maintained in the Yuba County portion of the NSVAB. In an attempt to achieve NAAQS and CAAQS and maintain air quality, the air district has participated in the preparation of air quality attainment plans and reports, which together constitute the SIP for the NSVAB. Specifically, all of the air districts in

the NSVAB including the FRAQMD, prepared an air quality attainment plan for O_3 in 1994. Updated every three years since adoption, the current *Northern Sacramento Valley Planning Area 2018 Triennial Air Quality Attainment Plan* (2018 AQAP) includes forecast reactive organic gases (ROG) and NO_x emissions (O_3 precursors) for the entire NSVAB through the year 2020. The 2018 AQAP provides local guidance for air basins to achieve attainment of the California O_3 standard.

The determination of AQAP consistency is primarily concerned with the long-term influence of a project on air quality. The AQAP contains air pollutant reduction strategies based on FRAQMD's latest growth forecasts, and FRAQMD's growth forecasts were defined in consultation with local governments and with reference to local general plans. The Project is proposing the removal of debris from the intake for the Narrows 2 Powerhouse at the Englebright Dam to maintain adequate water flows used for hydroelectric power generation, agricultural water supply, recreational uses, and fish habitat in the Yuba River. Therefore, the Project would not increase the number of homes, jobs or provide additional infrastructure in the area. Additionally, implementation of the Project would not surpass any of the FRAQMD's significance thresholds for individual pollutants, as show in Table 4.3-2 and 4.3-3 below. Furthermore, the Project would not be a source of long-term emissions and would not contribute to emissions once implementation is complete. The Project would be consistent with the emission-reduction goals of the 2018 AQAP. There is no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐

Less than Significant Impact

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

Activities associated with the implementation of the proposed Project would generate short-term emissions of criteria air pollutants, including ROG, CO, NO_X, PM_{10}, and fine particulate matter ($PM_{2.5}$). Emissions generated during Project implementation are temporary and short-term but have the potential to represent a significant air quality impact. Four basic sources of short-term emissions will be generated through implementation of the proposed Project: operation of the construction vehicles (i.e., tractors, excavators, cranes), the creation of fugitive dust during the transport of debris from below the lake waterline to the debris storage/staging areas or to the landfill, any emissions generated from the possible use of a motorboat to transport personnel to the excavation site, and any emissions created during potential burning of the debris stockpile. Activities associated with the Project would be subject to

FRAQMD Rule 3.16, which requires taking reasonable precautions to prevent the emissions of fugitive dust, such as using water or chemicals, where possible, for control of dust during the clearing of land and other construction activities. Additionally, FRAQMD Rule 2.0, which ensures that any open burning in the District is conducted in a manner that minimizes emissions and smoke and is managed consistent with State and federal law.

Emissions associated with the proposed Project were calculated using the CARB-approved California Emissions Estimator Model (CalEEMod) version 2016.3.2 computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Appendix A for more information regarding the assumptions for the Project, including construction equipment and duration, used in this analysis.

FRAQMD Thresholds

The significance criteria established by the applicable air quality management or air pollution control district (FRAQMD) may be relied upon to make the above determinations. According to the FRAQMD, an air quality impact is considered significant if the proposed Project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The FRAQMD has established thresholds of significance for air quality for construction type activities. Specifically, the FRAQMD distinguishes between two types of projects, Type 1, and Type 2 projects. Type 1 projects are land use projects in which an operational phase exists. Type 2 have no operational land use component, as with the proposed Project. A Type 2 project is considered to be less than significant if the *average project life emissions* do not exceed 25 pounds per day of NOx or 25 pounds per day of ROG. For instance, if a project takes six months to construct, then the maximum allowed emissions of NOx and ROG are 4,500 pounds for each pollutant [6 months = 180 days. 180 x 25 = 4,500]. Per the FRAQMD, for Type 2 projects that occur over multiple years, the maximum allowed emissions of NOx or ROG are 4.5 tons annually. The FRAQMD has also established a significance threshold for PM_{10}. Type 2 projects must generate less than 80 pounds of PM_{10} daily in order to be considered less than significant. The Project is anticipated to begin in late 2021 and will require approximately 30 days to complete (30 x 25 = 750 pounds maximum allowable NOx or ROG emissions) and is therefore considered a Type 2 project.

Table 4.3-1 presents the FRAQMD significance thresholds for Type 2 projects.

Table 4.3-1. FRAQMD Thresholds of Significance for Type 2 Project

Emission	Type 2 Project Significance Thresholds
NO_x	25 pounds/day
ROG	25 pounds/day
PM_{10}	80 pounds/day
$PM_{2.5}$	N/A

Notes: NOx and ROG construction emissions may be averaged over the life of a project but may not exceed 4.5 tons per year.

Project Implementation Emissions

Project activities include removing an estimated 175 cubic yards (cy) of woody debris from below the lake waterline using a land-based excavator equipped with a clamshell bucket, or similar equipment (crane) staged on the 15-foot-wide gravel access road near the powerplant intake structure. Debris will be excavated from the lake and placed into dump trucks for subsequent stockpile in the debris storage/staging areas (approximately 900 feet from the excavation site). Stockpiled debris would be dried and burned onsite under a non-agricultural burn permit issued by FRAQMD. The Project is anticipated to begin in late 2021 (if 2021 is determined to be a drought year) and will require approximately 30 days to complete. However, if debris burning on-site is not allowed in the Fall, it could occur outside of this 30-day window. No more than 10 construction workers at any one time would be required to implement the Project. While nighttime work is not anticipated, there is a chance that it may be required during the Project. In the event of night work, light plants with 50-horsepower generators would be used. Generators required for light plants are assumed to qualify under the CARB Portable Equipment Registration Program. Additionally, the use of a motorboat may be needed to transport personnel from the dirt boat ramp to the excavation site so they can guide equipment from the land via visual from the lake.

Emissions from burning excavated material, which would occur with implementation of the proposed Project, were calculated based on the USEPA AP-42 Compilation of Air Emissions Factors (1998; 1980). Volume-to-weight factors of woody debris (i.e., branches, stumps) for calculating emissions from "prescribed burning" were promulgated from the USEPA Office of Resource Conservation and Recovery (2016). In addition, CO, PM_{10} and $PM_{2.5}$ emissions factors are derived from methods for prescribed "broadcast logging slash" burning of hardwood (smoldering phase) as this contains the most conservative emissions factor. Thus, these emission factors may overestimate the emissions from burning dried debris of various wood species found at the Narrows 2 intake. Predicted maximum daily emissions that would be generated during Project implementation are summarized in Table 4.3-2. Project emissions would be short-term and of temporary duration, lasting only as long as Project implementation would occur, and are therefore compared with the FRAQMD's construction-related thresholds. While emissions would be temporary, they would be considered a significant air quality impact if the volume of pollutants generated exceeds the FRAQMD's thresholds of significance.

Table 4.3-2. Implementation-Related Emissions

Construction Year	Pollutant (pounds per day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Debris Removal[1]	1.93	17.42	0.95	0.70
Emissions from Debris Burning[2]	N/A	N/A	10.37	9.63
Emissions from Diving Boat	0.20	0.80	0.04	0.06
Total Emissions	**2.13**	**18.22**	**21.36**	**20.39**

Table 4.3-2. Implementation-Related Emissions

Construction Year	Pollutant (pounds per day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
FRAQMD Significance Threshold	*25*	*25*	*80*	*N/A*
Exceed FRAQMD Threshold?	**No**	**No**	**No**	**No**

Source: [1]CalEEMod version 2016.3.2. Refer to Appendix A for Model Data Outputs. [2]Emissions calculated using a Volume-to-Weight factor of 127 pounds/cubic yard of branches and stumps (USEPA 2016) and emission factors for prescribed burns during the smoldering (S) phase (USEPA 1980).

As shown in Table 4.3-2, emissions generated during Project construction would not exceed the FRAQMD's thresholds of significance. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard, and no health effects from Project criteria pollutants would occur. A less than significant impact would occur as a result of implementation of the Proposed Project.

Debris Removal Offsite to Landfill Option

Alternatively, if potential seasonal restrictions or other logistical issues arise, debris may be loaded into dump trucks for disposal offsite at the Recology Ostrom Road Landfill in Wheatland, California. Debris would be trucked approximately 900 feet down the existing facility access road and then approximately 37 miles one-way to the Ostrom Road Landfill. The proposed haul route is shown in Figure 4. *Proposed Disposal Haul Route*. Based on the assumption that each dump truck can carry 15 cy of material, disposal of 175 cy of debris offsite would take approximately 12 round trip truck trips. Table 4.3-3 shows Project emissions under the scenario that debris is hauled offsite instead of burned onsite.

Table 4.3-3. Debris Removal Option – Implementation-Related Emissions

Construction Year	Pollutant (pounds per day)			
	ROG	NOX	PM10	PM2.5
Project I Implementation	2.59	23.01	1.64	0.96
Emissions from Diving Boat	0.20	0.80	0.04	0.06
Total Emissions	**2.79**	**23.81**	**1.68**	**1.02**
FRAQMD Significance Threshold	*25*	*25*	*80*	*N/A*
Exceed FRAQMD Significance Threshold?	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for Model Data Outputs.

As shown in Table 4.3-3, emissions generated during implementation of the Debris Removal Offsite to Landfill option would not exceed the FRAQMD's thresholds of significance. Therefore, criteria pollutant emissions generated during implementation of this scenario would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard, and no health effects from Project criteria pollutants would occur. A less than significant impact would occur as a result.

Post-Implementation Emissions

The proposed Project involves the removal of debris from the intake for the Narrows 2 Powerhouse. It would not include the addition of new permanent stationary or mobile sources of emissions to the Project site. Therefore, operational emissions would have no impact on long-term air quality impacts

Would the Project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

Less than Significant Impact

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project site are a single-family residence located approximately 2,738 feet south of the Project site beyond Yuba River and a United States Army Corp of Engineers (USACE) park personnel lodging approximately 886 feet east of the Project site.

Project-Generated Air Contaminants

Implementation-related activities would result in temporary, short-term Project-generated emissions of diesel particulate matter (DPM), ROG, NOx, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for material extraction; soil hauling truck traffic; and other miscellaneous activities. As previously discussed, the portion of the NSVAB encompassing the Project site is designated as a nonattainment area for O_3 and PM_{10} under the state standards (CARB 2019). Thus, existing O_3, PM_{10} levels in the NSVAB are at unhealthy levels during certain periods. However, as shown in Table 4.3-2 and Table 4.3-3, the Project would not exceed the FRAQMD significance thresholds for either the proposed Project implementation scenarios.

The health effects associated with O_3 are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NOx)

in excess of the FRAQMD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve activities that would result in substantial amounts of CO emissions. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For implementation activity, diesel particulate matter (DPM) is the primary toxic air contaminant of concern. Based on the emission modeling conducted, the maximum onsite construction-related daily emissions of exhaust $PM_{2.5}$, considered a surrogate for DPM, would be 0.64 pounds per day under the Debris Burning scenario and 0.82 pounds per day under the Offsite Debris Removal option (see Appendix A). $PM_{2.5}$ exhaust is considered a surrogate for DPM because more than 90 percent of DPM is less than 1 microgram in diameter and therefore is a subset of particulate matter under 2.5 microns in diameter (i.e., $PM_{2.5}$). Most $PM_{2.5}$ derives from combustion, such as use of gasoline and diesel fuels by motor vehicles. As with O_3 and NOx, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the FRAQMD's thresholds. Additionally, the Project would be required to comply with FRAQMD Rule 3.16, which limits the amount of fugitive dust generated during construction. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the Project would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. A less than significant impact would occur.

Post-Implementation Air Contaminants

Upon Project completion, there would be no sources of air toxics as there are no stationary or mobile sources associated with the Project once implementation is complete.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized

that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. In 1993, much of the state was designated nonattainment under the CAAQS and NAAQS for CO. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration across the entire state is now designated as attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the State one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. A study conducted in Los Angeles County by the South Coast Air Quality Management District (SCAQMD) is helpful in showing the amount of traffic necessary to result in a CO Hotspot. The SCAQMD analysis prepared for CO attainment in the SCAQMD's *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan (SCAQMD 2003) can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). To establish a more accurate record of baseline CO concentrations, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

The proposed Project would not generate any new traffic trips and average daily trips would be the same with and without Project implementation. Because the proposed Project would not increase traffic volumes at any intersection to more than 100,000 vehicles per day, or even 44,000, there is no likelihood of the Project traffic exceeding CO values.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

No Impact

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Project Implementation

During implementation, the proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust and wood smoke in the immediate vicinity of the site. However, these emissions are short term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the Project area. As such, no impact would occur.

Post-Implementation

Land uses that are associated with odors include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and

fiberglass molding. The proposed Project would does include any of the land uses that have been identified as odor sources. Thus, there would be no impact associated with operational odors.

4.3.4 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.4 Biological Resources

ECORP Consulting, Inc. conducted an Aquatic Resources Delineation (ARD) (ECORP 2021a) and a Biological Resources Assessment (BRA) (ECORP 2021b) for the proposed Project. The information provided in this section was taken from the BRA and ARD. The purpose of the BRA and ARD was to collect information on the biological resources present within the Project site such as potential habitat for sensitive plant, animals and aquatic resources present sufficient to support CEQA. These documents are included as Appendix B of this IS/MND.

4.4.1 Environmental Setting

The Project site is located on relatively steep terrain along the shoreline of Englebright Reservoir, as identified on Figures 1 and 2. The Project site is made up of dirt/gravel access roads, previously cleared areas on the steep reservoir shoreline and the intake structure situated within the reservoir. The vegetation community found on the shoreline and immediately adjacent to the Project site is foothill pine woodland. Englebright Reservoir was created with the construction of Englebright Dam on the Yuba River. The boat launch is not paved or developed but is comprised of unvegetated compacted soil on a relatively shallow slope. The surrounding uplands are comprised of undeveloped woodland.

Land Cover Types and Vegetation Communities

The upland portion of the Project site is made up entirely of unvegetated disturbed ground. These include dirt/gravel access roads and previously cleared areas on the steep reservoir shoreline. The remainder of the Project site is located within the reservoir around the intake structure. In general, the vegetation community found on the shoreline and immediately adjacent to the Project site is *Pinus sabiniana* Woodland Alliance (foothill pine woodland). This is not a sensitive natural community.

Soils

As discussed in Section 4.7 Geology and Soils, the Project site consists of two soil units or types (NRCS 2021a):

- 116 – Auburn-Sobrante complex, gravelly, 30 to 50 percent slopes
- 241 – Sobrante-Timbuctoo complex, 30 to 50 percent slopes.

Neither of these soil units contain hydric components; they are not considered hydric soils (NRCS 2021b).

Aquatic Resources

A total of 0.142 acre of aquatic resources have been mapped within the Project site (Figure 5. *Aquatic Resources Delineation*).

Englebright Reservoir

The Project site is located on the shoreline and adjacent uplands of Englebright Reservoir. Englebright Reservoir was created with the construction of Englebright Dam on the Yuba River. Vegetation along the banks of the reservoir are a combination of hydrophytes and upland species. The shoreline is relatively steep at most locations except for the boat launch area. The boat launch is not paved or developed but is comprised of compacted soil on a relatively shallow slope. This area is largely unvegetated. The limits of the reservoir were mapped at the water level observed on the day of the field survey, January 21, 2021. This is presumably the ordinary high water mark (OHWM), as the water level is maintained relatively constant according to YCWA staff.

Wildlife

The Project site is located along an access road and previously cleared and leveled flats that have been heavily impacted. However, the surrounding uplands are made up of undeveloped foothill pine woodlands. In addition, access to the Project site and surrounding lands is limited to YCWA and other authorized individuals; there is no public access to this location. Because of the undeveloped setting and relative absence of people, wildlife use is expected to be moderate to high in the vicinity of the Project site.

A detailed list of wildlife species observed in the vicinity of the Project site during the January 2021 site visit is included as Attachment D of the BRA.

Map Features

- Study Area - 1.67 ac.
- Reference Coordinate (NAD83)

Three Criteria Smaple Points

- Upland Point
- Waters Point

Aquatic Resources (0.142 acres) [1] *

- Reservoir - 0.142 ac.

Photo Source: ESRI, Maxar (2018)
Boundary Source: Yuba County Water Agency
Delineator(s): K. Kwan
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

[1] Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program as amended on February 10, 2016, and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required.
** The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.*

ECORP: N:\2020\2020-044.01 Narrows 2 Access Road\MAPS\Jurisdictional_Delineation\N2_Intake_ARD_20210121.mxd (JDS) JSwager 1/25/2021

Map Date: 1/25/2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 100

Figure 5. Aquatic Resources Delineation

2020-044.01 YCWA - Narrows 2 Intake Debris

Evaluation of Potentially Occurring Special-Status Species

According to the BRA, based on species occurrence information from the California Natural Diversity Database (CNDDB), resource agency databases, the literature review, and observations in the field, a list of special-status plant and animal species that have the potential to occur within the Project site was generated. One fish and seven wildlife species were noted that are considered to have the potential to occur on the Project site. These species are listed in Table 4.4-1 and discussed further below. Species that were considered to be absent from the Project site due to lack of suitable habitat, or because the known distribution of the species does not include the Project site vicinity, are not discussed further in this document.

A complete list of special-status species known to exist in the region and the results of the database queries are included in the BRA (see Appendix B).

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Plants						
Sanborn's onion (*Allium sanbornii* var. *sanbornii*)	–	–	4.2	Chaparral, cismontane woodland, and lower montane coniferous forests, usually with gravelly, serpentinite soils (853'–4,954').	May–September	Absent. Marginally suitable habitat (disturbed woodland without serpentine soils) adjacent to but not within the Project site.
Depauperate milk-vetch (*Astragalus pauperculus*)	–	–	4.3	Occurs on vernally mesic volcanic soils in chaparral, cismontane woodland, and valley and foothill grasslands (197'-3,986')	March–June	Absent. No suitable habitat within Project site.
Mexican mosquito fern *(Azolla microphylla)*	–	–	4.2	Marshes and swamps, ponds or slow-moving bodies of water (98'–328').	August	Absent. No suitable habitat within Project site.
Valley brodiaea (*Brodiaea rosea* ssp. *vallicola*)	–	–	4.2	Occurs in old alluvial terraces and silt, sandy, or gravelly soils in vernal pools and swales within valley and foothill grassland (33'–1,100').	April–May	Absent. No suitable habitat within Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Sierra foothills brodiaea *(Brodiaea sierrae)*	–	–	4.3	Usually found on serpentinite or gabbroic soils within chaparral or cismontane woodland (164'–3,215').	May–August	Absent. Marginally suitable habitat (disturbed woodland without serpentine or gabbroic soils) adjacent to but not within the Project site.
Stebbins' morning-glory *(Calystegia stebbinsii)*	FE	CE	1B.1	Gabbroic or serpentine soils in chaparral and cismontane woodland (607'–3,576').	April–July	Absent. No suitable habitat within Project site.
Chaparral sedge (*Carex xerophila*)	–	–	1B.2	Serpentinite or gabbroic soils within chaparral, cismontane woodland, and lower montane coniferous forest (1,444'–2,526').	March–June	Absent. No suitable habitat within Project site.
Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*)	–	–	4.2	Chaparral, cismontane woodlands, and lower montane coniferous forest often along roadcuts (246'–3,002').	May–July	Absent. Suitable habitat adjacent to but not within Project site.
Dwarf downingia (*Downingia pusilla*)	–	–	2B.2	Mesic areas in valley and foothill grassland, and vernal pools. Species appears to have an affinity for slight disturbance (i.e., scraped depressions, ditches) (Baldwin et al. 2012, CDFW 2020) (3'–1,460').	March–May	Absent. No suitable habitat within Project site.
Northern Sierra daisy (*Erigeron petrophilus* var. *sierrensis*)	–	–	4.3	In sometimes serpentinite cismontane woodland, lower montane coniferous forest, and upper montane coniferous forest (984'–6,801').	June–October	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Shield-bracted monkeyflower *(Erythranthe glaucescens)*	–	–	4.3	Serpentine seeps, sometimes streambanks; chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland (197'-4,068')	February–August	Absent. No suitable habitat within Project site.
Pine Hill flannelbush (*Fremontodendron decumbens*)	FE	CR	1B.2	Serpentine or gabbro rock outcrops in chaparral and cismontane woodland (1,394'–2,493').	April–July	Absent. No suitable habitat within Project site.
Stinkbells (*Fritillaria agrestis*)	–	–	4.2	Clay and sometimes serpentinite soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland (33'–5,102').	March–June	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Project site.
Butte County fritillary (*Fritillaria eastwoodiae*)	–	–	3.2	Chaparral, cismontane woodland, and openings in lower montane coniferous forest and occasionally is found on serpentinite soils (164'–4,921').	March–June	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Project site.
Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*)	–	–	1B.2	Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (U.S. Fish and Wildlife Service [USFWS] 2005) (98'–751').	March–May	Absent. No suitable habitat within Project site.
Dubious pea (*Lathyrus sulphureus* var. *argillaceus*)	–	–	3	Cismontane woodland, lower montane coniferous forest and upper montane coniferous forest (492'–3,051').	April–May	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Legenere (*Legenere limosa*)	–	–	1B.1	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005) (3'–2,887').	April–June	Absent. No suitable habitat within Project site.
Cantelow's lewisia (*Lewisia cantelovii*)	–	–	1B.2	In granitic or sometimes serpentinite soils within mesic areas of broad–leaved upland forest, chaparral, cismontane woodland, and lower montane coniferous forest (1,083'–4,495').	May–October	Absent. No suitable habitat within Project site.
Humboldt lily (*Lilium humboldtii* ssp. *humboldtii*)	–	–	4.2	Occurs in openings within chaparral, cismontane woodland, and lower montane coniferous forest (295'–4,199').	May–August	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Project site.
Cedar Crest popcornflower (*Plagiobothrys glyptocarpus* var. *modestus*)	–	–	3	Cismontane woodland and mesic valley and foothill grasslands (108'–2,945).	April–June	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Project site.
Brazilian watermeal (*Wolffia brasiliensis*)	–	–	2B.3	Assorted shallow freshwater marshes and swamps (66'–328').	April–December	Absent. No suitable habitat within Project site.
Invertebrates						
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	-	-	Elderberry shrubs.	Any season	Absent. No suitable habitat within Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	-	-	Vernal pools/wetlands.	November-April	Absent. No suitable habitat within Project site.
Fish						
Delta smelt (*Hypomesus transpacificus*)	FT	CE	-	Sacramento-San Joaquin delta.	N/A	Absent. Outside the known range for this species.
Chinook salmon (Central Valley spring-run Evolutionarily Significant Unit [ESU]) (*Oncorhynchus tshawytscha*)	FT	CT	-	Undammed rivers, streams, creeks.	N/A	Absent. Project related activities are located upstream of Englebright Dam.
Chinook salmon (Central Valley fall-/late fall-run ESU) (*Oncorhynchus tshawytscha*)	–	SSC	-	Undammed rivers, streams, creeks.	N/A	Absent. Project related activities are located upstream of Englebright Dam.
Steelhead (CA Central Valley Distinct Population Segment) (*Oncorhynchus mykiss*)	FT	-	-	Undammed cold-water rivers having relatively deep pools with large substrates.	N/A	Absent. Project related activities are located upstream of Englebright Dam.
Green sturgeon (southern Distinct Population Segment) (*Acipenser medirostris*)	FT	-	-	Undammed rivers, streams, creeks.	N/A	Absent. Project related activities are located upstream of Englebright Dam.
Pacific lamprey (*Lampetra tridentata*)	–	SSC	-	Undammed streams rivers, streams, and creeks with gravel spawning substrates.	N/A	Absent. Project related activities are located upstream of Englebright Dam.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Hardhead (*Mylopharodon conocephalus*)	–	SSC	-	Relatively undisturbed streams and reservoirs at low to mid elevations in the Sacramento-San Joaquin and Russian River drainages.	N/A	Present (YCWA 2011).
Amphibians						
California red-legged frog (*Rana draytonii*)	FT	-	SSC	Lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Adults must have aestivation habitat to endure summer dry down.	May 1- November 1	Absent. No suitable habitat within Project site.
Foothill yellow-legged frog Northeast/Northern Sierra Clade (*Rana boylii*)	-	CT	SSC	Foothill yellow-legged frogs can be active all year in warmer locations but may become inactive or hibernate in colder climates. At lower elevations, foothill yellow-legged frogs likely spend most of the year in or near streams. Adult frogs, primarily males, will gather along main-stem rivers during spring to breed.	May - October	Absent. No suitable habitat within Project site.
Reptiles						
Giant garter snake (*Thamnophis gigas*)	FT	CT	-	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range.	April-October	Absent. No suitable habitat within Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Northwestern pond turtle (*Actinemys marmorata*)	-	-	SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.	April-September	Potential. Englebright Reservoir supports suitable habitat.
Birds						
California black rail (*Laterallus jamaicensis coturniculus*)	-	CT	BCC, CFP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer, El Dorado counties)	March-September (breeding)	Absent. No suitable habitat within Project site.
Osprey (*Pandion haliaetus*)	-	-	CDFW WL	Nesting habitat requires close proximity to accessible fish, open nest site free of mammalian predators, and extended ice-free season. The nest in large trees, snags, cliffs, transmission/ communication towers, artificial nest platforms, channel markers/ buoys.	April-September	Potential. Suitable nesting habitat in close proximity to Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Golden eagle (*Aquila chrysaetos*)	-	-	BCC, CFP	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/savannah, and chaparral. Nesting occurs on cliff ledges, river banks, trees, and human-made structures (e.g. windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter.	Nest (February-August); winter CV (October-February)	Absent. No suitable habitat within Project site.
Northern harrier (*Circus hudsonius*)	-	-	SSC	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/ brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities.	April-September	Absent. No suitable habitat within Project site.
Bald eagle (*Haliaeetus leucocephalus*)	De-listed	CE	CFP, BCC	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g. rivers, lakes), wetlands, flooded agricultural fields, open grasslands	February – September (nesting); October-March (wintering)	Potential. Suitable nesting habitat in close proximity to Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Swainson's hawk (*Buteo swainsoni*)	-	CT	BCC	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/ harvesting, irrigated pastures	March-August	Absent. Project site is not located in the known breeding range, and there is no suitable foraging habitat in the vicinity.
Burrowing owl (*Athene cunicularia*)	-	-	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g. prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds.	February-August	Absent. No suitable habitat within Project site.
Long-eared owl *(Asio otus)*	-	-	SSC	Nests in open forests, riparian woodland, conifer forests, dense vegetation adjacent to grasslands, shrublands or other open communities	March-August (breeding); November-March (wintering in Central Valley)	Absent. No suitable habitat within Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Lewis' woodpecker (*Melanerpes lewis*)	-	-	BCC	In California, breeds in Siskiyou and Modoc counties, Warmer Mountains, inner coast ranges from Tehama to San Luis Obispo counties, San Bernardino Mountains, and Big Pine Mountain (Inyo County); nesting habitat includes open ponderosa pine forest, open riparian woodland, logged/ burned forest, and oak woodlands. Does not breed on the west side of Sierran crest (Beedy and Pandalfino 2013).	April-September (breeding); September-March (winter in Central Valley).	Absent. This species does not nest in the region but may sporadically be found wintering in the vicinity.
Nuttall's woodpecker *(Dryobates nuttallii)*	-	-	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands.	April-July	Potential. Suitable nesting habitat in close proximity to Project site.
American peregrine falcon *(Falco peregrinus anatum)*	De-listed	De-listed	BCC, CFP	In California, breeds in coastal region, northern California, and Sierra Nevada. Nesting habitat includes cliff ledges and human-made ledges on towers and buildings. Wintering habitat includes areas where there are large concentrations of shorebirds, waterfowl, pigeons or doves.	CA Residents nest in February-June	Potential. Known active nest located approximately 1/10 mile downstream of Englebright Dam.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Oak titmouse (*Baeolophus inornatus*)			BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree)	March-July	Potential. Suitable nesting habitat in close proximity to Project site.
Wrentit (*Chamaea fasciata*)	-	-	BCC	Coastal sage scrub, northern coastal scrub, chaparral, dense understory of riparian woodlands, riparian scrub, coyote brush and blackberry thickets, and dense thickets in suburban parks and gardens.	March-August	Absent. No suitable habitat in Project site.
Grasshopper sparrow (*Ammodramus savannarum*)	-	-	SSC	In California, breeding range includes most coastal counties south to Baja California; western Sacramento Valley and western edge of Sierra Nevada region. Nests in moderately open grasslands and prairies with patchy bare ground. Avoids grasslands with extensive shrub cover; more likely to occupy large tracts of habitat than small fragments; removal of grass cover by grazing often detrimental.	May-August	Absent. No suitable habitat in Project site.
Song sparrow "Modesto" (*Melospiza melodia heermanni*)	-	-	BCC, SSC	Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat	April-June	Absent. No suitable habitat in Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
San Clemente spotted towhee (*Pipilo maculatus clementae*)	-	-	BCC, SSC	Resident on Santa Catalina and Santa Rosa Islands; extirpated on San Clemente Island, California. Breeds in dense, broadleaf shrubby brush, thickets, and tangles in chaparral, oak woodland, island woodland, and Bishop pine forest.	Year round resident; breeding season is April-July	Absent. This species is only found on Catalina Islands.
Yellow-breasted chat (*Icteria virens*)	-	-	SSC	In California, breeds in Klamath Mountains, inner Northern Coast Range south to San Francisco Bay, locally distributed from Santa Clara County south to San Diego County Sacramento and San Joaquin valleys, along west slope of Sierra Nevada from the Feather River to Kern River, Mono and Inyo counties. In the west, nesting habitat includes dense riparian and shrubby.	May-August	Absent. No suitable habitat in Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Tricolored blackbird (*Agelaius tricolor*)	-	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields.	March-August	Absent. No suitable habitat in Project site.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	-	-	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County.	March-July	Absent. No suitable habitat in Project site.
Yellow warbler (*Setophaga petechia*)	-	-	SSC, BCC	Breeding range includes most of California, except Central Valley (isolated breeding locales on Valley floor, Stanislaus, Colusa, and Butte Counties), Sierra Nevada range above tree line, and southeastern deserts. Nesting habitat includes riparian vegetation near streams and meadows. Winters in Mexico south to South America.	May-August	Absent. No suitable habitat in Project site.

Table 4.4-1. Potentially Occurring Special-Status Species

Mammals						
Townsend's big-eared bat *(Corynorhinus townsendii)*	-	-	SSC	Caves, mines, buildings, rock crevices, trees.	April-September	Absent. No suitable habitat within Project site.
Western red bat (*Lasiurus blossevillii*)	-	-	SSC	Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores).	April-September	Potential. Suitable roosting habitat within close proximity of Project site.

Status Codes

FESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	FESA listed, Endangered.
FT	FESA listed, Threatened.
BCC	USFWS Bird of Conservation Concern (USFWS 2008).
CR	CESA- or NPPA-listed, Rare.
CT	CESA- or NPPA-listed, Threatened.
CE	CESA or NPPA listed, Endangered.
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5 050-reptiles/amphibians).
CDFW WL	CDFW Watch List
NPPA	California Native Plant Protection Act
SSC	CDFW Species of Special Concern
1B	California Rare Plant Rating (CRPR) /Rare or Endangered in California and elsewhere.
2B	Plants rare, threatened, or endangered in California but more common elsewhere.
3	CRPR/Plants About Which More Information is Needed – A Review List.
4	CRPR/Plants of Limited Distribution – A Watch List.
0.1	Threat Rank/Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

Evaluation of Special-Status Fish

As discussed in the BRA, seven special-status fish were identified as having potential to occur in the Project site. However, upon further analysis and after the site visit, six of these special-status species (i.e., delta smelt, Central Valley spring-run Chinook salmon, Central Valley fall-/late fall-run Chinook salmon, California Central Valley steelhead, green sturgeon, and Pacific lamprey) were considered absent because they only occur downstream of Englebright Dam. Englebright Dam and/or Daguerre Point Dam (located approximately 14 miles downstream of Englebright Dam) represents a fish barrier, and these six special-status fish do not occur in the Reservoir. One special-status fish species was considered to potentially occur in the Project site.

Hardhead

Hardhead (*Mylopharodon conocephalus*) is not listed pursuant to either the federal Endangered Species Act (ESA) or California ESA; however, it is designated by CDFW as a species of special concern (SSC) due to declining numbers and small, isolated populations. Primary threats to the species include dams and diversions, water quality degradation associated with agricultural activities, and invasive species. This species has been documented to occur in Englebright Reservoir (YCWA 2011).

Hardhead occur in relatively undisturbed clear and cool (i.e., up to 20°C maximum summer temperature) low- to mid-elevation streams below approximately 1,500 meters. Hardhead are primarily bottom-feeding fish that forage on aquatic invertebrates and aquatic vegetation, but will also prey on drifting invertebrates, plankton, and algae and terrestrial insects. Hardhead reach maturity at age two and spawn primarily in April and May. Adult fish migrate into smaller tributary streams and aggregate in pools, returning to their home pools in larger rivers after spawning. Females produce over 20,000 eggs, which are deposited in sand or gravel substrates in riffles, runs, or heads of pools. After hatching, larval fish are believed to remain in near-shore areas with dense cover, gradually moving downstream and into deeper habitats with increased growth.

This species has been documented in the Englebright Reservoir (YCWA 2011) and, thus, is considered present.

Evaluation of Special-Status Reptiles

A total of two special-status reptile species were identified as having the potential to occur within the Project site based on the BRA. The BRA determined only the northwestern pond turtle has the potential to occur within the Project site.

Northwestern Pond Turtle

The northwestern pond turtle (*Actinemys marmorata*) is not listed pursuant to either the federal or California ESAs; however, it is designated as a CDFW SSC. Northwestern pond turtles occur in a variety of fresh and brackish water habitats including marshes, lakes, ponds, and slow-moving streams. This species is primarily aquatic; however, they typically leave aquatic habitats in the fall to reproduce and to overwinter. Deep, still water with abundant emergent woody debris, overhanging vegetation, and rock outcrops is optimal for basking and thermoregulation. Although adults are habitat generalists, hatchlings

and juveniles and hatchlings require shallow edge water with relatively dense submergent or short emergent vegetation in which to forage. Western pond turtles are typically active between March and November. Mating generally occurs during late April and early May and eggs are deposited between late April and early August. Eggs are deposited within excavated nests in upland areas, with substrates that typically have high clay or silt fractions. The majority of nesting sites are located within 650 feet (200 meters) of the aquatic sites; however, nests have been documented as far as 1,310 feet (400 meters) from the aquatic habitat.

There are four CNDDB documented occurrences of northwestern pond turtles within five miles of the Project site. Englebright Reservoir provides suitable habitat for this species. Northwestern pond turtle has potential to occur onsite.

Evaluation of Special-Status Birds

A total of 20 special-status bird species were identified as having the potential to occur within Project site based on the BRA. Upon further analysis and after the reconnaissance site visit, the BRA determined that five of the 20 special-status bird species have potential to occur within the Project site. These species are presented below.

Osprey

The Osprey (*Pandion haliaetus*) is not listed pursuant to either the California or federal ESAs; however, it is considered a CDFW watch list species. Osprey have expanded their range throughout much of North American (Bierregaard et al. 2020). Breeding habitat requirements include proximity to fish, open nest sites free from predators, and an ice-free fledging season (Bierregaard et al. 2020). Natural nesting sites include live and dead trees, cliffs, shoreline boulders, and on the ground on predator-free islands; they readily use artificial nest sites such as duck-hunting blinds, channel markers, communication towers, and platforms erected for nesting (Bierregaard et al. 2020). Breeding season occurrences of osprey are found throughout California, with highest frequencies found along the northern California coast, northern Sacramento Valley, and the Sierra Nevada (eBird 2021). Breeding occurs from April to September.

There are no CNDDB occurrences of osprey reported within five miles of the Project site (CDFW 2021a), and no osprey nests were observed within or in close proximity to the Project site during the initial site assessment. However, the trees within the foothill pine woodland adjacent to the Project site could provide nesting habitat for this species, and the reservoir represent suitable foraging habitat. Osprey have potential to occur.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) has been delisted under the federal ESA but remains listed as endangered under the California ESA. It is fully protected pursuant to the California Fish and Game Code Section 3511 and the federal Bald and Golden Eagle Protection Act. It is a Bureau of Land Management sensitive species, a U.S. Forest Service sensitive species, and is considered a USFWS bird of conservation concern (BCC). Bald eagles breed at lower elevations in the northern Sierra Nevada and North Coast ranges. Bald eagles breed in forested areas adjacent to large waterbodies. Tree species used for nesting is quite variable and includes conifers (dominant where available), oaks, hickories, cottonwoods, and aspens.

Nest trees are generally the largest tree available in a suitable area. Breeding activity occurs during late February through September, with peaks in activity from March to June.

There is no documented CNDDB occurrence of this species within five miles of the Project site. The riparian woodland within the Project site provide marginal habitat for this species. Bald eagle has potential to occur within the Project site.

Nuttall's Woodpecker

The Nuttall's woodpecker (*Dryobates nuttallii*) is not listed under the California or federal ESAs but is considered a USFWS BCC. They are resident from Siskiyou County south to Baja California. Nuttall's woodpeckers nest in tree cavities primarily within oak woodlands, but also can be found in riparian woodlands (Lowther et al. 2020). Breeding occurs during April through July.

While there are no CNDDB documented occurrences of Nuttall's woodpecker within five miles of the Project site, the trees in the foothill pine woodland surrounding the Project site provides suitable habitat for this species. Nuttall's woodpecker has potential to occur onsite.

Peregrine Falcon

The American peregrine falcon (*Falco peregrinus anatum*) has been delisted under both the California and federal ESAs; however, it is fully protected pursuant to Fish and Game Code of California Section 3511 and considered a USFWS BCC. In California, peregrine falcons breeding range includes coastal mountains, the Coast Range, Klamath Mountains, and Cascade and Sierra Nevada ranges (Small 1999). The most common nesting habitat includes ledges within cliff faces; other nesting habitats include buildings and towers (White et al. 2020). Breeding range within California includes the coastal region and the Sierra Nevada. Resident in California, peregrines nest during February through June.

There is no documented CNDDB occurrence of this species located within five miles of the Project site, and there is no suitable nesting or foraging habitat in the Project site. However, an active peregrine falcon nest (documented by YCWA) is located approximately 1,000 feet south of the Project site Intake Structure on the southern canyon wall of the Yuba River.

Oak Titmouse

Oak titmouse (*Baeolophus inornatus*) are not listed and protected under either the California or federal ESAs but are considered a USFWS BCC. Oak titmouse breeding range includes southwestern Oregon south through California's Coast, Transverse, and Peninsular ranges, western foothills of the Sierra Nevada, and into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley. They are found in dry oak or oak-pine woodlands but may also use scrub oaks or other brush near woodlands. Nesting occurs during March through July.

While there are no CNDDB documented occurrences of oak titmouse within five miles of the Project site, the foothill pine woodland adjacent to the Project site provides suitable habitat for this species. Oak titmouse has potential to occur onsite.

MBTA Protected Birds

The trees and scrubby vegetation adjacent to the Project site support potential nesting habitat for a variety of common birds protected under the MBTA and California Fish and Game Code § 3503.

Evaluation of Special-Status Mammals

A total of two special-status mammal species were identified as having the potential to occur within Project site based on the BRA. However, upon further analysis and after the reconnaissance site visit, only the western red bat was determined to have potential to occur within the Project site. This species is presented below.

Western Red Bat

The western red bat (*Lasiurus blossevillii*) is not listed pursuant to either the California or federal ESAs; however, this species is considered a SSC by CDFW. The western red bat is easily distinguished from other western bat species by its distinctive red coloration. This species is broadly distributed, its range extending from southern British Columbia in Canada through Argentina and Chile in South America, and including much of the western U.S. This solitary species day roosts primarily in the foliage of trees or shrubs in edge habitats bordering streams or open fields, in orchards, and occasionally urban areas. They may be associated with intact riparian habitat, especially with willows, cottonwoods, and sycamores. This species may occasionally utilize caves for roosting as well. They feed on a variety of insects, and generally begin to forage one to two hours after sunset. This species is considered highly migratory; however, the timing of migration and the summer ranges of males and females may be different. Winter behavior of this species is poorly understood.

There is one CNDDB documented occurrence of western red bat within five miles of the Project site. The foothill pine woodland adjacent to the Project site provides suitable habitat for this species. Western red bat has potential to occur onsite.

Sensitive Natural Communities

No sensitive natural communities were identified as having potential to occur within the Project site based on the BRA, and the site visit preformed as a part of the BRA determined that there are no sensitive natural communities in the Project site.

Wildlife Movement/Corridors and Nursery Sites

The Project site is located along an access road and previously cleared and leveled flats that have been heavily impacted. However, the surrounding uplands are made up of undeveloped foothill pine woodlands. In addition, access to the Project site and surrounding lands is limited to YCWA and other authorized individuals; there is no public access to this location. Because of the undeveloped setting and relative absence of people, wildlife use is expected to be moderate to high in the vicinity of the Project site.

The Project site is in an area that ranks a 4 (Conservation Planning Linkages) according to the Areas of Conservation Emphasis-Terrestrial Connectivity database (CDFW 2021b). A rank of 1 has low biodiversity value and a rank of 5 has high biodiversity value.

Two resident deer herds of the Mother Lode Deer Management Unit, the Sacramento Valley Herd and the Camp Beale Herd may be found in the Project site. These are resident populations without unique biological or geographical features that define their boundaries (AECOM 2011). The Project site could also provide winter range for the migratory Mooretown Herd (AECOM 2011).

No wildlife nursery sites were observed within the Project site during the site assessment. The upland portions of the Project site are extremely steep and unvegetated, so no nursery sites are expected. The intake structure is located within the reservoir at a location where the shoreline is steep and with no shallow wetland margins.

4.4.2 Biological Resources (IV) Environmental Checklist and Discussion

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

Less than Significant with Mitigation Incorporated.

The Project would result in temporary debris removal-related impacts to the upland and aquatic resources that provide habitat for special-status species within the Project site. Potential impacts to upland habitats include temporary disturbance associated with debris stockpiling, drying, and burning. The Project would result in temporary aquatic impacts from debris removal operations below the reservoir waterline. As such, the Project would not likely have a substantial adverse effect, either directly or through habitat modifications, on special status species identified by CDFW, USFWS, and NMFS and on critical habitat and Essential Fish Habitat as identified by NMFS. Impacts by species or habitat group are summarized below.

Impacts to Special-Status Fish Species, Critical Habitat, and Essential Fish Habitat

One special-status-fish species has potential to occur in the Project site. Direct impacts to this special-status fish species could occur as a result of debris removal operations through noise and causing localized turbidity. Implementation of the mitigation measure **BIO-1** and **BIO-2** would reduce potential impacts to special-status fish to a less-than-significant level. There are no critical habitat units for listed species or Essential Fish Habitat mapped in the Project.

Impacts to Northwestern Pond Turtles

Northwestern pond turtles may occur in the upland and aquatic portions of the Project site. This species may inadvertently be captured by debris removal equipment most likely resulting in direct mortality. More likely, noise and disturbance associated with setting up the debris removal operation and installing best management practices (BMPs) for water quality would deter and displace turtles from the work area. This could increase or decrease susceptibility to predation, particularly for hatchlings, depending on how predators behave in response to the debris removal operation. Overall, the effects are expected to be temporary and minimized by the implementation of mitigation measures of **BIO-1** and **BIO-3, which would** reduce this potential impact to a less-than-significant level.

Impacts to Special-Status Birds

One State listed and no federal listed bird species have the potential to occur in the Project site. In addition, there is potential for four special-status bird species in the Project site. Upland staging areas would generate a temporary disturbance that would likely displace nesting birds immediately adjacent to the Project site for the duration of Project operations but would not result in permanent habitat modifications. If special-status birds initiate nesting prior to the start of construction, direct effects would be avoided by implementation of mitigation measure **BIO-4**. Implementation of this mitigation measure, which require pre-construction surveys, establishment of buffers and monitoring at nest sites until young of the year have fledged, would reduce this potential impact to a less-than-significant level.

Impacts to Special-Status Mammals

There is one special-status mammal with potential to occur in the immediate vicinity of the Project site. The Project is not anticipated to require the removal of any vegetation, including trees, and is therefore not expected to result in adverse effects of habitat modification for this special-status bat species. However, if the Project requires removal of trees, mitigation may be required. As such, implementation of mitigation measure **BIO-5** would reduce the potential for impacts to special-status mammals by the removal of trees to a less-than-significant level.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

No Impact

The Project site supports disturbed habitat, and there is no riparian woodland on or adjacent to the Project site. The Project would have no impact on any riparian habitat or other sensitive natural community.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

The Project would result in debris removal at an intake structure. Project implementation would temporarily disturb Waters of the U.S./State, but not wetlands, through proposed debris removal. However, implementation of mitigation measure **BIO-6** would reduce these potential impacts to a less-than-significant level.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

Englebright Reservoir supports a variety of native and non-native fish, and the upland portions of the Project site support wildlife. Project debris removal activities have the potential to temporarily interfere with natural movements of resident and migratory fish species. All potential impacts would be temporary, and the implementation of mitigation measures **BIO-1**, **BIO-2** and **BIO-6** would reduce the potential temporary impacts to natural movements for resident and migratory fish species to a less-than-significant level.

The disturbed uplands and adjacent foothill pine woodland within the Project site provide some migratory opportunities for wildlife. Establishment of the staging areas and operation of equipment is likely to temporarily disturb and displace most wildlife from the site. Some wildlife such as birds or nocturnal species are likely to continue to use the habitats opportunistically for the duration of debris removal operations. Once debris removal operations are complete, wildlife movements are expected to resume.

As discussed previously, the Project site does not include a known nursery site; however, an active peregrine falcon nest site is known to occur on the opposite cliff faces of the canyon. The Project would have no direct or indirect impacts on this nest site, which is outside the Project limits by approximately 1,000 feet.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

No Impact

The Project does not conflict with a local policy or ordinance protecting biological resources. The Project would have no impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

No Impact

The Project site is not covered by any local, regional, or State conservation plan. Therefore, the Project would not conflict with a local, regional, or State conservation plan.

4.4.3 Mitigation Measures

BIO-1: **Best Management Practices.** The Project shall implement erosion control measures and best management practices (BMPs) to reduce the potential for sediment or pollutants at the Project site. Measures may include:

- Erosion control measures shall be placed between Waters of the U.S./State, and the outer edge of the staging areas, within an area identified with highly visible markers (e.g., construction fencing, flagging, silt barriers) prior to commencement of construction activities. Such identification and erosion control measures shall be properly maintained until construction is completed and the soils have been stabilized.
- Fiber rolls used for erosion control shall be certified by the California Department of Food and Agriculture as weed free.
- Seed mixtures applied for erosion control shall not contain California Invasive Plant Council designated invasive species (http://cal-ipc.org/) and will be composed of native species appropriate for the site.
- Trash generated onsite shall be promptly and properly removed from the site.

- Any fueling in the upland portion of the Project site shall use appropriate secondary containment techniques to prevent spills.
- A qualified biologist shall conduct a mandatory Worker Environmental Awareness Program for all contractors, work crews, and any onsite personnel on the potential for special-status species to occur on the Project site. The training shall provide an overview of habitat and characteristics of the species, the need to avoid certain areas, and the possible penalties for non-compliance.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-2: **Special-Status Fish.** To avoid and minimize potential adverse effects to special-status fish species (i.e., hardhead), implement the following:

- In-water work activities shall avoid the peak hardhead spawning period of April-May.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-3: **Special-Status Reptiles.** To avoid and minimize potential adverse effects to special-status reptile species (i.e., northwestern pond turtle), implement the following:

- A qualified biologist shall perform a preconstruction clearance survey within 24 hours of the initiation of Project activities.
- If northwestern pond turtles are found within the Project footprint, the qualified biologist, with appropriate scientific collecting permit, shall relocate the turtle(s) to another location on the reservoir shoreline.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-4: **Nesting Birds.** To protect nesting birds, no Project activity shall begin from February 1 through September 15 unless the following surveys are completed by a qualified wildlife biologist. Separate surveys and avoidance requirements are listed below for all nesting birds and raptors, including osprey and bald eagle.

- To the extent feasible, Project activities shall occur prior to the nesting season, September 16 through January 31.
- All Nesting Birds – For Project activities that begin between February 1 and September 15, qualified biologists shall conduct preconstruction nesting bird surveys on and within 100 feet of the Project site. The surveys shall be conducted within 14 days before the beginning of any construction activities. If any active nests

are found, impacts to special-status nesting bird species and nesting birds protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code shall be avoided by establishing appropriate buffers around active nests identified during preconstruction surveys; buffers shall be determined by a qualified biologist in consultation with CDFW. Project activity shall not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. The size of the buffer may be adjusted if a qualified biologist and the applicant, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during construction activities may be necessary. If no active special-status bird and MBTA bird nests are found during preconstruction surveys, no further measures relating to protected birds is necessary

- Raptors (including osprey and bald eagle) – For Project activities that begin between February 1 and September 15, including tree removal, qualified biologists shall conduct preconstruction surveys for osprey, bald eagle, and other raptors to identify active nests on and within 500 feet of the Project site. The surveys shall be conducted within 14 days before the beginning of any construction activities between February 1 and September 15. Impacts to active raptor nests shall be avoided by establishing appropriate buffers around active raptor nests identified during preconstruction surveys; buffers shall be determined by a qualified biologist in consultation with CDFW. Project activity shall not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. The size of the buffer may be adjusted if a qualified biologist and the applicant, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during construction activities may be necessary. If no active nests are found during preconstruction surveys, no further measures relating to protected raptors are necessary.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-5: **Roosting Bat Survey.** To avoid and minimize potential adverse effects to special-status bat species (i.e., western red bat), implement the following:

- If tree or vegetation removal will occur, bat roost surveys shall be conducted by a qualified wildlife biologist within 14 days before any Project initiation. Locations of vegetation and tree removal or excavation will be examined for potential bat roosts. Visual surveys for bats (e.g., observation of bats during foraging period) shall be performed, including inspection for suitable habitat and bat sign (e.g., guano). If bat

sign is detected, use of ultrasonic detectors (e.g., SonoBat, Anabat) shall be performed to further characterize the presence of roosts.

- If it is determined that an active roost site cannot be avoided and will be affected, the biologist shall first notify and consult with CDFW on appropriate bat exclusion methods and roost removal procedures. Once it is confirmed that all bats have left the roost, crews will be allowed to continue work in the area.

Timing/Implementation: *If tree removal is required, prior to construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

BIO-6: Waters of the U.S./State To avoid or minimize anticipated short-term adverse effects to Waters of the U.S., the Project shall implement the following:

- A Lake and Streambed Alteration (LSA) Notification shall be submitted to CDFW pursuant to California Fish and Game Code 1602 to request authorization to impact aquatic features in the Project site.

Timing/Implementation: *Prior to and during construction*

Monitoring/Enforcement: *YCWA and Project construction lead*

4.5 Cultural Resources

A Cultural Resources Inventory and Evaluation Report was prepared by ECORP Consulting, Inc. (ECORP 2021c) for the proposed Project to determine if cultural resources were present in or adjacent to the Project area and assess the sensitivity of the Project area for undiscovered or buried cultural resources. The information provided below is an abridged version of this report and is provided here to afford a brief context of the potential cultural resources in the Project Area.

Due to the sensitive nature of cultural resources, which is restricted from public distribution by State and federal law, the cultural resources report is not included in the IS/MND appendices; however, all pertinent information necessary for impact determinations is included in this section. A redacted version of the cultural resources report that does not include site records or locations may be obtained by contacting YCWA.

4.5.1 Environmental Setting

Contact History

It is generally believed that human occupation of California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 and 8,000 BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and floral foods were probably

exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods.

Around 8,000 BP, there was a shift in focus from hunting towards a greater reliance on plant resources. This period, which extended until around 5,000 years BP, is sometimes referred to as the Millingstone Horizon. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period. In sites dating to after about 5,000 BP, archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments. During this period, new peoples from the Great Basin began entering southern California. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples (ECORP 2021c).

The current Project Area is in California's Great Central Valley, which was a focus of early archaeological research in California. Archaeological work during the 1920s and 1930s led to the development of a cultural chronology for central California based on the results of excavations conducted in the lower Sacramento River Valley. This chronology identified three archaeological cultures, named Early, Transitional, and Late. The chronology was redefined in 2007 and divided into three broad periods: The Paleo-Indian Period (approximately 11,550 to 8550 years ago); the three-staged Archaic period, consisting of the Lower Archaic (approximately 8550 to 5550 years ago), Middle Archaic (approximately 5550 to 550 years ago), and Upper Archaic (approximately 550 to 900 years ago); and the Emergent Period (900 years ago to Historic). The three divisions of the Archaic Period correspond to climate changes. This is the most recently developed sequence and is now commonly used to interpret Central California pre-contact history (ECORP 2021c).

Paleo-Indian Period

This period began when the first people began to inhabit what is now known as the California culture area. It was commonly believed these first people subsided on big game and minimally processed foods, (i.e., hunters and gatherers), presumably with no trade networks. More recent research indicates these people may have been more sedentary, relied on some processed foods, and traded (ECORP 2021c). Populations likely consisted of small groups traveling frequently to exploit plant and animal resources.

Archaic Period

This period was characterized by an increase in plant gathering for food, more elaborate burial goods, and increase in trade network complexity (ECORP 2021c). The three divisions, Lower, Middle and Upper Archaic, correspond to pre-contact climate changes are and characterized by the following aspects:

Lower Archaic Period—this period is characterized by cycles of widespread floodplain and alluvial fan deposition. Artifacts from this period include chipped-stone crescents and early wide-stemmed points, marine shell beads, and obsidian from eastern Nevada and the north Coast Ranges. These types of artifacts found on sites dating to this period indicate trade was occurring in multiple directions. A variety of plant and animal species were also utilized, including acorns, wild cucumber, and manzanita berries.

Middle Archaic Period—this period is characterized by a drier climate period. Rosenthal et al. (2007:153) identified two distinct settlement/subsistence patterns in this period: the Foothill Tradition and the Valley Tradition. Artifacts from the foothill tradition include locally sourced flaked-stone and groundstone cobbles, while the Valley Tradition was generally characterized by diverse subsistence practices and extended periods of sedentism.

Upper Archaic Period—this period is characterized by an abrupt change to wetter and cooler environmental climate conditions. Much greater cultural diversity is evident from this period. More specialized artifacts, such as bone tools, ceremonial blades, polished and groundstone plummets, saucer, and saddle *Olivella* shell beads, *Haliotis* shell ornaments, and a variety of groundstone artifacts are characteristic of this period.

Emergent Period

This period is most notably marked by the introduction of the bow and arrow, the emergence of social stratification linked to wealth, and more expansive trade networks signified by the presence of clam disk beads that were used as currency. The Augustine pattern (the distinct cultural pattern of the Emergent Period) is characterized by the appearance of small projectile points (largely obsidian), rimmed display mortars, flanged steatite pipes, flanged pestles, and chevron-designed bird-bone tubes. Large mammals and small seeded resources appear to have made up a larger part of the diet during this period (ECORP 2021c).

Ethnography

Ethnographically, the Project Area is in the southwestern portion of the territory occupied by the Penutian-speaking Nisenan. Nisenan inhabited the drainages of the Yuba, Bear, and American rivers, and also the lower reaches of the Feather River, extending from the east banks of the Sacramento River on the west to the mid to high elevations of the western flank of the Sierra Nevada to the east. The territory extended from the area surrounding the current city of Oroville in the north to a few miles south of the American River in the south. The Sacramento River bounded the territory on the west, and in the east, it extended to a general area located within a few miles of Lake Tahoe.

As a language group, Nisenan (meaning "from among us" or "of our side") are members of the Maiduan Family of the Penutian stock and are generally divided into three groups based on dialect differences: the Northern Hill (mountain) Nisenan in the Yuba River drainage; the Valley Nisenan along the Sacramento River; and the Southern Hill (foothills) Nisenan along the American River. While much of this section includes Native American pre-contact and historic information, Section 4.18 Tribal Cultural Resources of this Draft IS/MND includes further analysis of the ethnography of the Project area. Please refer to Section 4.18 for Tribal Cultural Resources.

History

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. Cabrillo was sent north by the Viceroy of New Spain (Mexico) to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake's Bay or Bodega Bay in 1579.

Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port.

Colonization of California began with the Spanish Portolá land expedition. The expedition, led by Captain Gaspar de Portolá of the Spanish army and Father Junipero Serra, a Franciscan missionary, explored the California coast from San Diego to the Monterey Bay Area in 1769. As a result of this expedition, Spanish missions to convert the native population, presidios (forts), and pueblos (towns) were established.

After Mexico became independent from Spain in 1821, what is now California became the Mexican province of Alta California with its capital at Monterey. In 1827, American trapper Jedediah Smith traveled along the Sacramento River and into the San Joaquin Valley to meet other trappers of his company who were camped there, but no permanent settlements were established by the fur trappers.

The Mexican government closed the missions in the 1830s and former mission lands, as well as previously unoccupied areas, were granted to retired soldiers and other Mexican citizens for use as cattle ranches. Much of the land along the coast and in the interior valleys became part of Mexican land grants or "ranchos". During the Mexican period there were small towns at San Francisco (then known as Yerba Buena) and Monterey. The rancho owners lived in one of the towns or in an adobe house on the rancho. The Mexican Period includes the years 1821 to 1848.

John Sutter, a European immigrant, built a fort at the confluence of the Sacramento and American Rivers in 1839 and petitioned the Mexican governor of Alta California for a land grant, which he received in 1841. Sutter built a flour mill and grew wheat near the fort. Gold was discovered in the flume of Sutter's lumber mill at Coloma on the South Fork of the American River in January 1848. The discovery of gold initiated the 1849 California Gold Rush, which brought thousands of miners and settlers to the Sierra foothills east and southeast of Sacramento.

The American period began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the United States in 1848. As a result of the treaty, Alta California became part of the United States as the territory of California. Rapid population increase occasioned by the Gold Rush of 1849 allowed California to become a state in 1850. Most Mexican land grants were confirmed to the grantees by U.S. courts, but usually with more restricted boundaries, which were surveyed by the U.S. Surveyor General's office. Land outside the land grants became federal public land which was surveyed into sections, quarter-sections, and quarter-quarter sections. The federal public land could be purchased at a low fixed price per acre or could be obtained through homesteading (after 1862).

The Project Area is located in an area that was once part of John Sutter's New Helvetia colony, and eventually became Yuba County. Yuba City, located 25 miles southwest of the Project Area, was established on the west bank of the Feather River in what was to become Sutter County, and Marysville was the first Gold Rush boom town established on the east bank, overshadowing Yuba City because it was more accessible to miners arriving from San Francisco by boat. Yuba County, which originally included present-day Sierra and Nevada counties, was formed in February 1850, and the following year the City of Marysville was incorporated.

The Yuba River accumulated about 600 million cubic yards of hydraulic mining waste and sediment as a result of hydraulic mining operations between 1849 and 1909 resulting in major flood damage to Marysville and Yuba City in the late 1800s. Just prior to the turn of the twentieth century, several small dams and gravel berms were built along the river in an attempt to control sediment buildup and water flow. Four barrier dams were approved for construction by the California Debris Commission in 1901 and built in 1902.

The Englebright Dam was built in 1941 by the California Debris Commission, as part of the Sacramento River and Tributaries Project established in 1935. The purpose of the 280-foot concrete arch dam was to act as a sediment and debris retention facility, and as such it does not have a low-level outlet; rather, uncontrolled water flow spills over the top of the dam. The PG&E Narrows 1 and Yuba County Water Agency (YCWA) Narrows 2 power plants have also allowed for controlled water flow releases since around 1970. In addition to controlling sediment from historic mining operations still eroding into the Yuba River, the Englebright Dam resulted in the creation of Englebright Lake, a 70,000-acre-foot reservoir. Today the reservoir is used for recreation, as well as water distribution for agricultural and domestic uses, and hydroelectric power (ECORP 2021c).

4.5.2 Regulatory Framework

Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires that the federal government list significant historic resources on the National Register of Historic Places (NRHP), which is the nation's master inventory of known historic resources. The NRHP is administered by the National Park Service (NPS) and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Structures, sites, buildings, districts, and objects over 50 years of age can be listed in the NRHP as significant historic resources. However, properties under 50 years of age that are of exceptional importance or are contributors to a historic district can also be included in the NRHP.[1] The criteria for listing in the NRHP include resources that:

a) are associated with events that have made a significant contribution to the broad patterns of history;
b) are associated with the lives of persons significant in our past;
c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

[1] A [historic] district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development (NPS 1983).

d) have yielded or may likely yield information important in prehistory or history.

State

California Register of Historical Resources

The State Historical Resources Commission designed the California Register of Historical Resources (CRHR) for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. The CRHR is the authoritative guide to the state's significant historical and archaeological resources. This program encourages public recognition and protection of resources of architectural, historical, archaeological, and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding, and affords certain protections under CEQA.

California Environmental Quality Act

Under CEQA, public agencies must consider the effects of their actions on both historical resources and unique archaeological resources. Pursuant to Public Resources Code (PRC) § 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

"Historical resource" is a term with a defined statutory meaning (PRC § 21084.1). Under CEQA Guidelines Section 15064.5(a), historical resources include the following:

- A resource listed in, or determined to be eligible, by the State Historical Resources Commission, for listing in the CRHR (PRC § 5024.1).
- A resource included in a local register of historical resources, as defined in PRC § 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC § 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources (PRC Section 5024.1), including the following:

  a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
  b) Is associated with the lives of persons important in our past;

c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

d) Has yielded, or may be likely to yield, information important in prehistory or history.

The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC § 5020.1(k)), or identified in a historical resources survey (meeting the criteria in PRC § 5024.1(g)) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC §§ 5020.1(j) or 5024.1.

Historic resources are usually 45 years old or older and must meet at least one of the criteria for listing in the CRHR, described above (such as association with historical events, important people, or architectural significance), in addition to maintaining a sufficient level of physical integrity.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC § 5024.1 and California Code of Regulations (CCR), Title 14, § 4850).

CEQA also requires lead agencies to determine if a proposed project would have a significant effect on unique archaeological resources. If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section 21083.2 regarding unique archaeological resources.

"Unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (14 CCR Section 15064[c][4]).

4.5.3 Environmental Impacts

Thresholds of Significance

Following PRC §§ 21083.2 and 21084.1, and § 15064.5 and Appendix G of the CEQA Guidelines, cultural resource impacts are considered to be significant if the project would result in a positive response to any of the following questions:

1. Would the project cause a substantial adverse change in the significance of a Historical Resource pursuant to CEQA Guidelines Section 15064.5?

2. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

3. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

State CEQA Guidelines Section 15064.5 defines *substantial adverse change* as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource is materially impaired.

CEQA Guidelines Section 15064.5(b)(2) defines *materially impaired* for purposes of the definition of substantial adverse change as follows:

The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

CEQA requires that if a project would result in an effect that may cause a substantial adverse change in the significance of a historical resource or would cause significant effects on a unique archaeological resource, then alternative plans or mitigation measures must be considered. Therefore, prior to assessing effects or developing mitigation measures, the significance of cultural resources must first be determined. The steps that are normally taken in a cultural resources investigation for CEQA compliance are as follows:

- Identify potential historical resources and unique archaeological resources;

- Evaluate the significance of the potential historical resources; and
- Evaluate the effects of the project on eligible (significant) historical resources and unique archaeological resources.

Methods

Records Search and Literature Review

The efforts to identify cultural resources within the Project Area consisted of a records search of the California Historical Resources Information System (CHRIS) at the North Central Information Center (NCIC) on January 14, 2021, a review of historic maps, photographs, records on file with the Office of Historic Preservation, ethnographic information, literature pertaining to the Project Area and surrounding region, a review of geological and soils data, and an archaeological pedestrian survey using transects spaced 15 meters apart.

In addition to the record search, ECORP contacted the California Native American Heritage Commission (NAHC) on January 12, 2021 to request a search of the Sacred Lands File for the Project Area to determine whether or not Sacred Lands have been recorded by California Native American tribes within the Project Area. Native American Sacred Lands may coincide with archaeological sites.

ECORP mailed letters to the Yuba County Historical Society on January 14, 2021 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area.

Pedestrian Survey

On January 21, 2021 ECORP subjected the Project area to an intensive pedestrian survey under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (NPS 1983) using transects spaced 15 meters apart. ECORP expended one person-day in the field. At that time, the ground surface was examined for indications of surface or subsurface cultural resources by and under the direction of professionals meeting the secretary of the interior's standards for prehistoric and historic archaeology.

Results

The records search identified a total of 12 cultural resources, five pre-contact and seven historic-period, within 0.5-mile of the Project Area, two of which were previously recorded within the Project Area. The pedestrian survey identified two previously unrecorded resources within the Project Area. Therefore, a total of four historic period resources were identified as a result of the cultural resources study:

- P-58-3309, The Yuba River Development Project Historic Built Environment District, a small portion of which partially overlaps the Project Area;
- P-58-3308, the Narrows II Penstock/Power Tunnel which is a contributing element to District P-58-3309;
- YCWA-001, historic period road dating to at least 1947; and

- YCWA-002, historic period road dating to at least 1963.

Both the District (P-58-3309) and the individual contributing element (P-58-3308) had been evaluated as not eligible for the NRHP and CRHR; therefore, they do not constitute historical resources, historic properties, or unique archaeological resources according to CEQA. Both roads (YCWA-001 and YCWA-002) were evaluated by ECORP (2021) using NRHP and CRHR criteria and found not eligible; therefore, they do not constitute historical resources, historic properties, or unique archaeological resources.

A search of the Sacred Lands File by the NAHC did not indicate the presence of Native American cultural resources in the vicinity of the Project Area (letter dated February 3, 2021).

There is potential for buried pre-contact archaeological sites in the Project Area, as such sites are known to exist along perennial waterways. In addition, the construction of the lake may have buried deposits or features that were previously on the surface. If present, submerged pre-contact archaeological sites would most likely have been food processing features such as bedrock mortars or hearths, as habitation areas are atypical on steep slopes such as those underwater in the Project Area.

4.5.4 Cultural Resources (V) Environmental Checklist and Discussion

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

The Cultural Resources Inventory and Evaluation Report identified four cultural resources within the Project Area, all of which were evaluated as not eligible for the CRHR and therefore not considered historical resources or unique archaeological resources for purposes of CEQA.

However, there remains the possibility that excavations associated with the development of the Project could affect unknown historical resources buried in the Project Area. As such, mitigation is required. Therefore, mitigation measure **CUL-1** has been included to reduce the potential impact to historical resources to be less-than-significant.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

The Project Area was investigated by a professional archaeologist. No archaeological sites were identified in the Project Area. Although there are four identifiable cultural resources within the Project Area (two historic period roadways and one historic period power tunnel that is simultaneously a contributing element to a built environment district), all of these resources are structures of the built environment, which means that they are not archaeological in nature.

The records search identified five pre-contact archaeological sites within 0.5-mile of the Project Area. These site types frequently occur in the vicinity of perennial waterways, and the alluvium deposited by the Yuba River and the construction of the lake may have buried deposits that were previously on the surface. For this reason, the Proposed Project may result in a potentially significant impact to buried archaeological resources.

Archaeological discoveries of buried artifacts or features during Project implementation have the potential to affect archaeological resources, resulting in a potentially significant impact. Therefore, mitigation measure **CUL-1** has been included to reduce the potential impact to archaeological resources to a less-than-significant level

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated.

No human remains have been identified in the Project Area, nor were any archaeological sites identified within or adjacent to the Project Area that may contain human remains. However, ground-disturbing project activity could result in the inadvertent disturbance of currently undiscovered human remains. As mentioned, there is potential for buried pre-contact resources to exist it the Project Area, and such resources may contain human remains. Procedures of conduct following the discovery of human remains on non-federal lands are mandated by Health and Safety Code § 7050.5, by PRC § 5097.98, and by CEQA in California Code of Regulations (CCR) § 15064.5(e).

Implementation of mitigation measure **CUL-2** would assure that any discovery of human remains within the Project Area would be subject to these procedural requirements. Implementation of this mitigation measure would reduce impacts associated with the discovery/disturbance of human remains to be less-than-significant.

4.5.5 Mitigation Measures

CUL-1: **Unanticipated Discovery Procedures.** If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 50-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify

the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead federal agency and YCWA. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be an Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or an Historic Property under Section 106 of the National Historic Preservation Act (NHPA), if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either 1) is not an Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or an Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *YCWA, Project Construction Lead, Professional Archeologist*

CUL-2: **Stop Work if Human Remains Detected.** If the find includes human remains, or remains that are potentially human, the contractor shall ensure reasonable protection measures are taken to protect the discovery from disturbance (Assembly Bill [AB] 2641). The archaeologist shall notify the Yuba County Coroner (as per § 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code (PRC), and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, then the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, and after the mediation process with NAHC is carried out, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work cannot resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *YCWA, Project Construction Lead, Professional Archeologist, Yuba County Coroner*

4.6 Energy

4.6.1 Environmental Setting

Introduction

Energy consumption is analyzed in this IS/MND due to the potential direct and indirect environmental impacts including the depletion of nonrenewable resources (e.g., oil, natural gas, coal) and emissions of pollutants during the Project implementation. The impact analysis focuses on the source of energy that is relevant to the proposed Project: the equipment-fuel necessary for Project implementation.

Fuel Consumption

Vehicle fuel use is typically measured in gallons (e.g. of gasoline or diesel fuel). Automotive fuel consumption in Yuba County from 2016 to 2020 is shown in Table 4.6-1. Fuel consumption has decreased between 2016 and 2020.

Table 4.6-1. Automotive Fuel Consumption in Yuba County 2016-2020

Year	Total Fuel Consumption (gallons)
2020	32,334,292
2019	33,028,632
2018	33,946,580
2017	34,660,172
2016	35,363,264

Source: CARB 2017

4.6.2 Energy (VI) Environmental Checklist and Discussion

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐

Less than Significant Impact

Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. For the purpose of this analysis, the amount of fuel necessary for Project implementation is calculated and compared to that consumed in Yuba County.

The Project proposes the removal of the debris from the Narrows 2 intake structure immediately downstream of the Englebright Dam. Fuel consumption for Yuba County is compared to the Project fuel consumptions for both the proposed Project and the option to haul the debris offsite to Ostrom Road Landfill.

Project activities include removing an estimated 175 cy of woody debris from below the lake waterline using a land-based excavator equipped with a clamshell bucket, or similar equipment (crane) staged on the 15-foot-wide gravel access road near the powerplant intake structure. Debris will be excavated from the lake and placed into dump trucks for subsequent stockpile in the debris storage/staging areas. Stockpiled debris would be dried and burned onsite under a non-agricultural burn permit issued by FRAQMD. Additionally, if the need arises for the use of personnel to guide excavation equipment from the land via visual from the lake, the use of a motorboat would be required to transport personnel from the dirt boat ramp to the Project debris removal site (approximately 1,450 feet).

Alternatively, if potential seasonal restrictions or other logistical issues arise, debris may be loaded into dump trucks for disposal offsite at the Recology Ostrom Road Landfill in Wheatland, California. Debris would be trucked approximately 900 feet down the existing facility access road and then approximately 37 miles one-way to the Ostrom Road Landfill. Based on the assumption that each dump truck can carry 15 cy of material, disposal of 175 cy of debris offsite would take approximately 12 truck trips.

Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. The amount of fuel necessary for Project implementation was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. For the purpose of this analysis, the amount of fuel necessary for Project implementation, for the proposed

Project and the Debris Removal Offsite to Landfill Option, was calculated and compared to that consumed in Yuba County.

Table 4.6-2. Proposed Project Fuel Consumption

Year	Annual Consumption	Percentage Increase Countywide
Automotive Fuel Consumption		
Project implementation 2021[2]	4,928 gallons	0.015 percent
Debris Removal Offsite to Landfill Option – Project implementation 2021[2]	6,879 gallons	0.021 percent

Source: [1]CalEEMod; [2]Climate Registry 2016; [3]EMFAC2017 (CARB 2017)
Notes: The Project increases in automotive fuel consumption are compared with the countywide fuel consumption in 2020, the most recent full year of data.

As shown, the Project's gasoline fuel consumption during the one-time implementation period is estimated to be 4,928 and 6,879 gallons of fuel for the proposed Project and the option to haul the debris offsite in implementation year 2021, respectively. This would increase the annual countywide gasoline fuel use in the county by 0.015 and 0.021 percent respectively. As such, Project implementation would have a nominal effect on local and regional energy supplies. No unusual Project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the state. Construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would judiciously use fuel supplies to minimize costs due to waste and subsequently maximize profits. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times, would further reduce the amount of transportation fuel demand during Project implementation. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

For these reasons, this impact would be less-than-significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

No Impact

This impact analysis focuses on fuel consumption during the one-time implementation period. As discussed above, this would have a nominal effect on local and regional fuel consumption. Furthermore, the main goal of the Project is the removal of debris from the intake of the Narrows 2 Powerhouse that assists in providing renewable hydroelectric energy to the state and local energy grid. Therefore, implementation of the Project would maintain adequate water flow at the Powerhouse, thus sustaining water supply in the Yuba River. For these reasons, the Project would not conflict with or obstruct any state or local energy efficiency plans and the impact would be less than significant.

4.6.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.7 Geology and Soils

4.7.1 Environmental Setting

The Project Area is situated on the western slopes of the Sierra Nevada Mountains above the northern Sacramento Valley on the shore of Harry L. Englebright Lake, a reservoir on the Yuba River nestled among steeply climbing slopes and deep ravines. Elevations in the Project Area range from 525 feet above mean sea level (amsl) at the reservoir shoreline, and up to approximately 1,300 feet amsl on the surrounding ridgelines.

Geomorphic Setting

Rosenthal and Willis (2017:2) describe the geology of the Sacramento Valley as a large, asymmetric, structural trough (syncline) formed by westward-tilting blocks of plutonic and metamorphic rocks on the eastern side, and highly folded and faulted blocks of metamorphic rocks (Franciscan) on the western side. This basin has been partially filled by a thick sequence (up to 12.4 miles [20 kilometers] thick) of sedimentary rocks and alluvial deposits that range from late Jurassic to Historical in age. During the Pleistocene, erosion of the Sierra Nevada led to the deposition of large alluvial fans at the base of the foothills along the eastern side of the Sacramento Valley. Glacial conditions are generally credited for the deposition of these fans, while subsequent interglacial periods are marked by landscape stability, soil formation, and channel incision. Subsequent depositional cycles during the Holocene progressively buried downstream sections of many older alluvial fans and also led to the formation of inset stream terraces and nested alluvial fans along the foothills (Rosenthal and Willis 2017).

Regional Seismicity and Fault Zones

In California, special definitions for active faults were devised to implement the Alquist-Priolo Earthquake Fault Zoning Act of 1972, which regulates development and construction in order to avoid the hazard of surface fault rupture. The State Mining and Geology Board established policies and criteria in accordance with the act, which defined an active fault as one which has had surface displacement within Holocene time (about the last 11,000 years). A potentially active fault was considered to be any fault that showed evidence of surface displacement during Quaternary time (last 1.6 million years). Because of the large number of potentially active faults in California, the State Geologist adopted additional definitions and criteria to limit zoning to only those faults with a relatively high potential for surface rupture. Thus, the term "sufficiently active" was defined as a fault for which there was evidence of Holocene surface displacement. This term was used in conjunction with the term "well-defined," which relates to the ability to locate a Holocene fault as a surface or near-surface feature (California Geographical Survey [CGS] 2010).

Major faults within the region with the greatest potential to affect the Project sites include the Swan Ravine Fault, part of the Foothills Fault System, northern reach section, located approximately 3.5 miles

west of the Project site, and the Spenceville Fault, also within the Foothills Fault System, northern reach section, located approximately 6.5 miles south of the Project site (DOC 2021b). The Swan Ravine Fault is of Quaternary age (1.6 million to 700,000 years ago) while the Spenceville Fault is of Late Quaternary Age (70,000 to 11,700 years ago). A series of north-south trending Pre-Quaternary faults, including the grass Valley Fault, are located approximately 8 miles east of the Project site.

Soils

According to the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2021a), two soil types are located within the Project Area:

- Auburn-Sobrante complex (116), 30 to 50 percent slopes, is a well-drained, shallow soil found on hillslopes or toeslopes in foothill settings, often alongside exposed bedrock. This soil complex is formed from metasedimentary and metamorphic igneous rock. The top 20 to 24 inches are a silt loam with some clay content that transitions to weathered schist parent rock with depth, up to 34 inches.
- Sobrante-Timbuctoo 30 to 50 percent slopes, is a well-drained, shallow to moderately deep soil found on foothills, which is formed from metamorphic igneous parent rock. The top 20 to 24 inches are a silty and gravelly loam to clay loam; clay content increases with depth. The bottom 34 to 45 inches also include increasing metamorphic igneous material.

Table 4.7-1. Project Area Soil Characteristics

Soil	Percentage of Site	Drainage	Flooding Frequency Class	Erosion Hazard[1]	Runoff Potential[2]	Linear Extensibility (Rating)[3]	Frost Action[4]
Sobrante-Tumbuctoo fine silty, gravelly clayey loam, 30 to 50 percent slopes	90	Well drained	None	Slight	C,D – Very High	1.9	Low
Auburn-Sobrante silt loam, 30 to 50 percent slopes	5	Somewhat poorly drained	None	Slight	C,D – Very High	1.5	–
Water	5	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated

Source: NRCS 2020b
Notes:
1. The hazard is described as "slight," "moderate," "severe," or "very severe." A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions; "moderate" indicates that some erosion is likely and that erosion-control measures may be needed; "severe" indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and "very severe" indicates that significant erosion is expected, loss of soil productivity and offsite damage are likely, and erosion-control measures are costly and generally impractical.
2. Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation. Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. Group B. Soils having a moderate infiltration rate when thoroughly wet. Group C. Soils having a slow infiltration rate when thoroughly wet. Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet.

Table 4.7-1. Project Area Soil Characteristics

Soil	Percentage of Site	Drainage	Flooding Frequency Class	Erosion Hazard[1]	Runoff Potential[2]	Linear Extensibility (Rating)[3]	Frost Action[4]

3. Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent, moderate if 3 to 6 percent, high if 6 to 9 percent, and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.
4. Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

The geological formation underlying the Project Area soils is Mesozoic sheeted and unsheeted mafic and felsic dikes through volcanic and metavolcanic rocks, such as andesite, rhyolite, greenstone, and volcanic breccias (Jennings et al. 1977), mapped as the Dike Complex within the Smartsville Complex (CGS 2002).

Paleontological Resources

Paleontological resources include mineralized (fossilized) or unmineralized bones, teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains.

Information about paleontological resources for this Project was compiled from ECORP's query of the University of California Museum of Paleontology (UCMP) online catalog records, a review of regional geologic maps from the California Geological Survey, and a review of existing literature on paleontological resources of Yuba and Nevada Counties. The purpose of the assessment was to determine the sensitivity of the Project Area, whether or not known occurrences of paleontological resources are present within or immediately adjacent to the Project Area, and whether or not implementation of the Project could result in significant impacts to paleontological resources.

The results of the search of the UCMP's Locality Search (UCMP 2021) indicated a total of three Locality Records within Yuba County, none with paleontological specimens, none occurring within the vicinity of the Project site, and all within geologic formations in Eocene epoch sedimentary rocks that differ in age and composition from the Mesozoic epoch volcanic and metamorphic rock formation underlying the Project area.

4.7.2 Geology and Soils (VII) Environmental Checklist and Discussion

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Directly or indirectly cause 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?	☐	☐	☒	☐

i) **No Impact**

The Project area is not located within an Alquist-Priolo Earthquake Zone (CGS 2010; 2016). There would be no impact related to fault rupture.

ii) **No Impact**

According to CGS's Earthquake Shaking Potential for California mapping, the Project site is located in an area that is distant from known, active faults and will experience lower levels of ground shaking less frequently. In most earthquakes, only weaker masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking in the area (CGS 2016). The Project includes removal of woody debris from a hydropower water intake near the lake bottom. The Project does not anticipate large volumes of sediment removal will be required. No new structures would be built as a result of the Project. As such, the Project would not expose people or structures to potential substantial adverse effects related to strong ground shaking. The Project would have no impact in this area.

iii) **No Impact**

Liquefaction occurs when loose sand and silt that is saturated with water behaves like a liquid when shaken by an earthquake. Liquefaction can result in the following types of seismic-related ground failure:

- Loss of bearing strength – soils liquefy and lose the ability to support structures

- Lateral spreading – soils slide down gentle slopes or toward stream banks
- Flow failures – soils move down steep slopes with large displacement
- Ground oscillation – surface soils, riding on a buried liquefied layer, are thrown back and forth by shaking
- Flotation – floating of light buried structures to the surface
- Settlement – settling of ground surface as soils reconsolidate
- Subsidence – compaction of soil and sediment

Three factors are required for liquefaction to occur: (1) loose, granular sediment, (2) saturation of the sediment by groundwater, and (3) strong shaking. Because the Proposed Project site is located in an area determined to have a low chance of seismic hazard and no habitable structures would be built as a part of the Project, the potential to expose people or structures to substantial adverse effects from liquefaction would be a non-factor. As such, the Project would have no impact in this area.

iv) **Less than Significant impact**

Although the Project is in an area with steep topography, Project activities will not disturb slopes, and all heavy equipment will operate from graded flat staging areas and access roads built for and used by heavy equipment. Thus, there is low potential for landslides. As such, the Project would have a less-than-significant impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Less than Significant Impact

The Project will involve minimal ground disturbance associated only with loading and moving removed woody debris within the two storage/staging areas where soils have only a slight erosion potential. Thus, substantial soil erosion and loss of topsoil is not anticipated. Best Management Practices (BMPs) included in mitigation measure **BIO-1** would be implemented to manage erosion and the loss of topsoil during Project activities (see Biological Resources [IV]) Environmental Checklist and Discussion). Soil erosion impacts would thus result in a less-than-significant impact.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

No impact

As discussed previously, the Project site has a low potential for landslides.

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other "free" face, such as an excavation boundary. Lateral spreading can result from either the slump of low cohesion and unconsolidated material or, more commonly, by liquefaction of either the soil layer or a subsurface layer underlying soil material on a slope, resulting in gravitationally driven movement. One indicator of potential lateral expansion is frost action. Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing (NRCS 2021a). As indicated in Table 4.7-1, the Web Soil Survey identifies the Project site as having soils with low frost action potential. Additionally, the Project is for the removal of woody debris from the lakebed. No structures would be constructed as a part of the Project. As such, the potential for impacts due to lateral spreading would be nonexistent. The Project would have no impact in this area.

With the withdrawal of fluids, the pore spaces within the soils decrease, leading to a volumetric reduction. If that reduction is significant enough over an appropriately thick sequence of sediments, then regional ground subsidence can occur. This typically only occurs within poorly lithified sediments and not within competent rock.[2] No oil, gas, or high-volume water extraction wells are known to be present in the Project area. According to the U.S. Geological Survey (USGS), the Project site is not located in an area of land subsidence (USGS 2018). No structures would be constructed as a part of the Project. As such, the potential for impacts due to subsidence would be nonexistent. The Project would have no impact in this area.

Collapse occurs when water is introduced to poorly cemented soils, resulting in the dissolution of the soil cementation and the volumetric collapse of the soil. In most cases, the soils are cemented with weak clay (argillic) sediments or soluble precipitates. This phenomenon generally occurs in granular sediments situated within arid environments. Collapsible soils will settle without any additional applied pressure when sufficient water becomes available to the soil. Water weakens or destroys bonding material between particles that can severely reduce the bearing capacity of the original soil resulting in damage to buildings

[2] The processes by which loose sediment is hardened to rock are collectively called lithification.

and foundations. No structures would be constructed as a part of the Project. As such, the potential for impacts due to collapse would be nonexistent. The Project would have no impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒

No impact

Expansive soils are types of soil that shrink or swell as the moisture content decreases or increases. Structures built on these soils may experience shifting, cracking, and breaking damage as soils shrink and subside or expand. Expansive soils can be determined by a soil's linear extensibility. There is a direct relationship between linear extensibility of a soil and the potential for expansive behavior, with expansive soil generally having a high linear extensibility. Thus, granular soils typically have a low potential to be expansive, whereas clay-rich soils can have a low to high potential to be expansive.

According to the NRCS, linear extensibility values for the Project site are 1.9 percent. Soils with linear extensibility in that range correlate to soils having a low expansion potential, as noted in Table 4.7-1. The shrink-swell potential is low if the soil has a linear extensibility of less than three percent, moderate if three to six percent, high if six to nine percent, and very high if more than nine percent. If the linear extensibility is more than three percent, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. As shown in Table 4.7-1, 100 percent of the Project site soils have a low shrink-swell potential. Additionally, no structures would be constructed as a part of the Project. As such, the potential for impacts due to collapse would be nonexistent. The Project would have no impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

No impact

The Project does not involve the use of septic tanks or a septic system. The Proposed Project would have no impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Less than Significant impact

A search of the UCMP failed to indicate the presence of paleontological resources in the Project Area. Due to the limited soil disturbance associated with Project activities, and the types of soils and rock formation underlying the Project areas, there is an extremely low possibility that unanticipated paleontological resources will be encountered during ground-disturbing Project-related activities. Thus, the Project would have a less-than-significant impact in this area.

4.7.3 Mitigation Measures

Mitigation Measures **BIO-1** (see Biological Resources [IV]) would be implemented to manage erosion and the loss of topsoil during Project activities and reduce soil erosion impacts to a less-than-significant impact.

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

Greenhouse Gas (GHG) emissions are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and chlorofluorocarbons, creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to an unexpected warming of the earth and has the potential to severely impact the earth's climate system.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

CEQA-Level Thresholds of Significance

The Appendix G thresholds for GHG emissions do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the

appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR 15064.4[b]). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4[c]). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

The local air quality agency regulating the Yuba County portion of the NSVAB is the FRAQMD. To provide efficient development patterns and successfully adapt to future changes in Yuba County's climate, FRAQMD created a Greenhouse Gas Reduction Plan under Action HS5.1 in the Yuba County General Plan 2030. The County will choose a GHG reduction target for countywide emissions (existing and new growth) that is consistent with state and regional regulations and plans, such as those adopted to implement the California Global Warming Solutions Act of 2006 (AB 32) and California's Sustainable Communities and Climate Protection Act (Senate Bill 375). The County's GHG Reduction Plan will be designed to be consistent with California GHG reduction goals, as appropriate and applicable within the unincorporated County. The County will ensure that the GHG emissions reductions targets represent the unincorporated County's "fair share" of statewide GHG reduction, consistent with statewide GHG-reducing legislation and regulations. As noted, the County's overall objective is to plan for new growth in a way that is as GHG-efficient as would be needed statewide to achieve statewide GHG-reduction goals. The County's GHG Reduction Target and Plan will address only those GHG emission sectors that are applicable to the County and over which the County can have influence – either through entitlement authority, public investments, incentives, or other feasible means. However, Yuba County to date has not adopted a GHG threshold and therefore this analysis will rely on an alternative GHG threshold of significance.

Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130(f)). As a note, the CEQA

Guidelines were amended in response to Senate Bill 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Although Yuba County has committed, through Action HS5.1, to creating a Greenhouse Gas Reduction Plan to address the County's impact on climate change through the reduction of GHG's, the County has yet to establish a significance threshold for construction-related GHG emissions, as previously described. In the absence of any GHG emission significance thresholds, this analysis will rely on the GHG threshold recommended by the California Air Pollution Control Officer's Association (CAPCOA), which has provided guidance for determining the significance of GHG emissions generated from land use development projects. CAPCOA considers projects that generate more than 900 metric tons of GHG to be significant. This 900 metric tons per year threshold was developed to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to the statewide GHG emissions reduction goals that had been established. Thus, both cumulatively and individually, projects that generate less than 900 metric tons CO_2e per year have a negligible contribution to overall emissions.

In *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the state that "all persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied

toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "subjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

4.8.2 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

Less than Significant Impact

Project Implementation Greenhouse Gas Emissions

A potent source of GHG emissions associated with the proposed Project would be combustion of fossil fuels during implementation. This is temporary but would result in GHG emissions from the use of heavy construction equipment and construction-related vehicle trips.

Activities associated with the implementation of the Project that would generate GHGs include worker commute trips, haul trucks carrying debris offsite, and off-road construction equipment (e.g., cranes, loaders, dump trucks). Table 4.8-1 illustrates the specific GHG emissions that would result from implementation of the proposed Project. As previously described, the Project involves the option of removing an estimated 175 cy of woody debris and stockpiling onsite to burn, as well as a separate option to haul the debris offsite to the Recology Ostrom Road Landfill in Wheatland. Additionally, if the need arises for the use of divers at the excavation site, the use of a motorboat would be required to transport the divers to the Project site from the boat launch site located approximately 1,450 feet northwest of the Project excavation site. The calculated emissions from implementation of either option is shown in Table 4.8-1.

Table 4.8-1. Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/Year)
Project Implementation 2021 – (Debris Burning Onsite Option)	50
Project Implementation 2021 – (Debris Removal Offsite to Landfill Option)	70
Marine Vessel for Potential Diver Transport	0.15

Source: CalEEMod version 2016.3.2. Refer to Appendix C for Model Data Outputs.

As shown in Table 4.8-1, Project implementation would result in the generation of approximately 50.15 or 70.15 metric tons of CO_2e over the course of implementation of the proposed Project, depending on the scenario implemented. Once the proposed Project is complete, the generation of these GHG emissions would cease. As such, a less -than -significant impact would occur. No mitigation is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

No Impact

As previously stated, the Project's contribution to GHG emissions was compared to the significance threshold of 900 metric tons of CO_2e. This threshold was developed to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to the statewide GHG emissions reduction goals that had been established. As shown in Table 4.8-1, the proposed Project would produce CO_2e at rates that do not exceed the threshold and are therefore consistent with statewide GHG reduction efforts. The Project would not conflict with any applicable plans or policies related to the reduction of GHG emissions. There is no impact.

4.8.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.9 Hazards and Hazardous Materials

4.9.1 Environmental Setting

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, State, or local agency or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined by the California Health and Safety Code § 25501 as follows:

> "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

A hazardous material is defined in Title 22, § 662601.10, of the CCR as follows:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to,

an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

The release of hazardous materials into the environment could potentially contaminate soils, surface water, and groundwater supplies.

Under Government Code § 65962.5, both the Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB) are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. A search of the DTSC (2020) and SWRCB (2020) lists identified no open cases of hazardous waste violations on, or within 0.5 mile of the Proposed Project site.

The USEPA maintains the Enforcement and Compliance History Online (ECHO) program. The ECHO website provides environmental regulatory compliance and enforcement information for approximately 800,000 regulated facilities nationwide. The ECHO website includes environmental permit, inspection, violation, enforcement action, and penalty information about USEPA-regulated facilities. Facilities included on the site are CAA stationary sources; CWA facilities with direct-discharge permits, under the National Pollutant Discharge Elimination System (NPDES); generators and handlers of hazardous waste, regulated under the Resource Conservation and Recovery Act (RCRA); and public drinking water systems, regulated under the Safe Drinking Water Act. ECHO also includes information about USEPA cases under other environmental statutes. When available, information is provided on surrounding demographics, and ECHO includes other USEPA environmental data sets to provide additional context for analyses, such as Toxics Release Inventory data. According to the ECHO program, Englebright Dam and Lake having an address of 12896 Englebright Dam Road, Smartsville, CA 95977 (mapped as approximately 0.3 miles east of the Project site) is listed as a RCRA Small Quantity Generator of Hazardous Waste for recreational vehicle parks and campgrounds. The ECHO database indicates no RCRA violations at this site over the past 3 years of monitoring according to their detailed Facility Report (USEPA 2020a).

ECORP (2020) completed a preliminary sediment screening analysis in October-November 2020 in order to determine the potential for existing chemical constituents at the Project debris removal site near the Narrows 2 intake in Englebright Lake, and to screen removed woody debris for potential waste disposal at Recology Landfill. On October 27, 2020, ECORP collected sediment and water samples from the benthos at two (2) sampling locations in front of the Narrows 2 Powerhouse intake. Sediment samples were retrieved from the benthos using a remote operated vehicle (ROV) operated by ASI Marine. The results of this analysis are included in Appendix D of this Initial Study.

Table D-1 in Appendix D compares constituent results to Code of Federal Regulations Title 22 hazardous waste screening criteria used for waste acceptance by Recology Landfill in Wheatland, CA. As shown on Table D-1 all sediment and water sample results are below hazardous waste determination thresholds. YCWA assumes that Recology Landfill will accept sediment sampling analytical results for acceptance of the Project-generated woody debris waste.

4.9.2 Hazards and Hazardous Materials (IX) Environmental Checklist and Discussion

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐

Less than Significant Impact

Typical incidents that could result in accidental release of hazardous materials involve leaking storage tanks, spills during transport, inappropriate storage, inappropriate use, and/or natural disasters. If not remediated immediately and completely, these and other types of incidents could cause toxic fumes and contamination of soil, surface water, and groundwater. Depending on the nature and extent of the contamination, groundwater supplies could become unsuitable for use as a domestic water source. Human exposure to contaminated soil or water could have potential health effects depending on a variety of factors, including the nature of the contaminant and the degree of exposure.

Hazardous materials must be stored in designated areas designed to prevent accidental release to the environment. California Building Code requirements prescribe safe accommodations for materials that present a moderate explosion hazard, high fire or physical hazard, or health hazards.

Hazardous materials regulations, which are codified in Titles 8, 22, and 26 of the CCR, and their enabling legislation set forth in Chapter 6.95 of the California Health and Safety Code, were established at the State level to ensure compliance with federal regulations and to reduce the risk to human health and the environment from the routine use of hazardous substances.

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. The Proposed Project would include the removal of approximately 175 cubic yards of woody debris from the Narrows 2 Hydropower Intake within Englebright Lake. None of the debris removal, storage, or disposal operations would include substantial amounts of hazardous material. As described above, results of sediment samples collected from the lakebed near the debris removal site indicate that the sediment, and consequently the removed woody debris that may be in contact with this sediment, do not exceed CCR Title 22 hazardous waste disposal thresholds, as shown in Table D-1 in Appendix D. Any materials would be required to be used, stored, and disposed in accordance with existing regulations, product labeling, and the Project-specific SWPPP, and would not create a significant hazard to the public or to the environment. Therefore, the Project would have a less-than-significant impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐

Less -than -Significant Impact

As discussed in Issue a), the Project would not result in the routine transport, use, disposal, handling, or emission of any hazardous materials that would create a significant hazard to the public or the environment. Potential heavy equipment and power boat-related hazards could be created during the course of Project operations at the site, given that the heavy equipment and small power boat use small and incidental amounts of oils and fuels and other potentially flammable substances. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials used during dredging. The construction contractor would be required to use standard controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Practices and procedures described in the Project-specific SWPPP would be observed such that any materials released are appropriately contained and remediated as required by local, State, and federal law. No ongoing operation of facilities, equipment, or other uses are a part of the Project. The Project would have a less-than-significant impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

No Impact

There are no schools within 0.25 mile of any of the Project site. The Project would have no impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

No Impact

Under Government Code § 65962.5, both the DTSC and the SWRCB are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. A search of the DTSC and SWRCB lists identified no open cases of hazardous waste violations on or near the Project site. Therefore, the Proposed Project is not located on a parcel included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 (DTSC 2020; SWRCB 2020). As a result, this would not create a significant hazard to the public or to the environment and would have no impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

No Impact

The Project site center is located approximately 10.12 miles northeast of the Beale Air Force Base, the nearest airport to the Project site. According to the Beale Air Force Base Land Use Compatibility Plan, the Project is located outside of the airport's safety zones (Mead & Hunt 2010). As such, the Project would have no impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

Less -than -Significant Impact

The Yuba County Multi-Jurisdictional Local Hazard Mitigation Plan addresses the planned response to emergency situations associated with natural disasters, technological incidents, and national security emergencies in or affecting Yuba County (Office of Emergency Services, 2015). The County of Yuba Office of Emergency Services provides information on emergency evacuation routes in the event of a failure on any of the dams on the Yuba River, including New Bullards Bar Dam, Log Cabin Dam, Our House Dam, and Englebright Dam. Within the Project Area, the only identified emergency evacuation route is State Route 20.

The Proposed Project does not include any actions that would impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. All Project activities would not impede the use of surrounding roadways in an emergency evacuation. The Project would involve placing a crane or excavator and dump trucks on the Narrows 2 Powerhouse access road during debris removal activities, but would allow enough space on the road for maintenance vehicles servicing the dam and Narrows 2 Powerhouse to pass during an emergency. While the Project could involve the transportation of removed materials to the disposal site, this would not result in the inability to use those roadways in an emergency. As such, implementation of the Proposed Project would result in a less-than-significant impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Less -than -Significant Impact

Although the Project site is within a California Department of Forestry and Fire Protection (CAL FIRE) Very High Fire Hazard Severity Zones the Project would not construct any structures, and any controlled fires for burning woody debris within the graveled, unvegetated storage areas would be conducted in compliance with a non-agricultural burn permit issued by FRAQMD and procedures and safety measures contained in Fire Prevention and Response Plan for the Yuba River Development Project No. 2246 (YCWA, 2017). For these reasons, the Project would have a less-than-significant impact in this area.

4.9.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.10 Hydrology and Water Quality

4.10.1 Environmental Setting

Regional Hydrology

Surface Water

The Project site is located in the Upper Yuba Watershed (Hydrologic Unit Code #18020125) within the greater Sacramento River hydrologic region. The Sacramento River hydrologic region covers approximately 17.4 million acres (27,200 square miles). The region includes all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties. Small areas of Alpine and Amador counties are also within the region. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta (NRCS 2016). The Yuba River has three forks: North, Middle, and South Yuba. The North and Middle Yuba Rivers come together below New Bullards Bar Reservoir and form the mainstem Yuba River. Englebright Dam marks the division between the Upper and Lower Yuba River.

The lower Yuba River is a tributary to the Feather River, which is the largest natural tributary to the Sacramento River (USEPA 2020b). The Upper Yuba Watershed drains approximately 1,340 square miles of the western slope of the Sierra Nevada, including portions of Sierra, Placer, Yuba, and Nevada Counties and is approximately 40 miles from east to west at its confluence with the Feather River in Marysville, CA.

The Yuba River Basin rises from an elevation of about 88 feet to about 8,590 feet. From 1922 through 2011, the annual unimpaired flow at the Smartsville gage on the Lower Yuba River just below Englebright Dam has ranged from a high of 4,926,000 acre feet in 1982 to a low of 369,000 acre-feet in 1977, with an average of about 2,292,000 acre-feet per year. In general, basin runoff is nearly equally divided between runoff from rainfall during October through March and runoff from snowmelt during April through September (FERC 2019).

When first constructed, Englebright reservoir had a gross storage capacity of 70,000 acre-feet; trapped sediment has reduced this capacity to approximately 50,000 acre-feet. Englebright Dam traps nearly all sediment from upstream sources, except for the finest grain sizes (clay, silt) that may remain in suspension during high-flow events (FERC 2019).

Groundwater

Groundwater in the State of California is managed and monitored by the Department of Water Resources (DWR). The Project site is within the Sacramento Valley Hydrologic Region, but not within a DWR-designated groundwater basin due to its elevation and topography (DWR 2021). Depth to groundwater and groundwater quality in the Project site area is unknown (DWR 2021).

Site Hydrology and Onsite Drainage

The Project site is on the western bank of Englebright Lake and includes an equipment staging area for debris removal around the Narrows 2 Intake platform and Powerhouse access road, a small area of

Englebright Lake just north of the platform, two graded and graveled storage/staging areas on top of the hill above the debris removal work area, a gravel access road leading from the two storage areas to a small dirt boat ramp and the debris removal work area. All heavy equipment used for debris removal will be used in areas above the existing lake water level. No heavy equipment or round-disturbing activities will occur in the dirt boat ramp area other than boat launching with a pickup truck.

One aboveground plastic pipe approximately 1-foot in diameter previously used for stormwater drainage runs along the access road leading from the western storage area on top of the hill down to the lake at the dirt boat ramp. This is the only man-made drainage structure on the Project site. All stormwater would percolate into the ground or flow into Englebright Lake. Other than Englebright Lake, there are no other waterbodies on the Project site.

Flood Hazard

Portions of the Project area including the debris removal area and boat ramp are mapped within a FEMA Special Flood Hazard Area without Base Flood Elevation (Zone A -1 percent annual chance of flood hazard) [(FIRM 06115C0400D effective 2/18/11) FEMA 2021]. The remainder of the Project Area, including the two debris storage/burning areas on top of the hill, are within an area of minimal flood hazard (Zone X).

Water Quality

The preparation and adoption of water quality control plans (Basin Plans) is required by the California Water Code (Section 13240) and supported by Section 303 of the federal CWA to establish water quality standards (i.e., water quality objectives) for the protection of the designated beneficial uses of navigable waters (RWQCB 2018). California's basin plans also establish water quality standards for groundwater in addition to surface water (RWQCB 2018). The Porter-Cologne Water Quality Control Act requires the Regional Water Boards to establish water quality objectives which are defined as "...the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area" (RWQCB 2018). The federal government (USEPA) has also established recommended aquatic water quality criteria for determining when water has become unsafe for people and aquatic life.

The Project site is covered under the Basin Plan for the Sacramento River Basin and the San Joaquin River Basin (RWQCB 2018). In the Basin Plan, the Central Valley Regional Water Quality Control Board designates existing beneficial uses and water quality objectives for the Yuba River. For the Yuba River reach upstream of Englebright Dam, existing designated beneficial uses of surface waters are municipal and domestic supply, hydropower, irrigation, stock watering, contact and non-contact recreation, cold freshwater habitat, spawning of coldwater fishes, and wildlife habitat. The Basin Plan's designated existing beneficial uses for the Yuba River downstream of Englebright Dam are hydropower, irrigation, stock watering, contact and non-contact recreation, warm and cold freshwater habitat, migration of warmwater and coldwater aquatic organisms, spawning of warmwater and coldwater fishes, and wildlife habitat. Table 4.10-1 shows the Basin Plan water quality objectives to support these designated beneficial uses.

Table 4.10-1. Water Quality Objectives of the Yuba River Upstream and Downstream of Englebright Dam

Water Quality Objective	Description
Temperature	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Quality Control Board that such alteration in water temperature does not adversely affect beneficial uses. In waters designated as cold freshwater habitat, increases in water temperatures must be less than 5.0°F above natural receiving-water temperature.
Bacteria	In waters designated for contact recreation, fecal coliform concentration must be: (1) less than or equal to a geometric mean of 200 per 100 milliliters of water based on a minimum of 5 samples collected in any 30-day period, and (2) less than 400 per 100 milliliters of water in at least 90 percent of all samples taken in all 30-day period
Biostimulatory Substances	Water shall not contain biostimulatory substances that promote aquatic growth in concentrations that cause nuisance or adversely affect beneficial uses.
Chemical Constituents	Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, waters designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22 of the California Code of Regulations, which are incorporated by reference into the Basin Plan.
Color	Water shall be free of discoloration that causes a nuisance or adversely affects beneficial uses.
Dissolved Oxygen (DO)	The DO concentrations shall not be reduced below the following minimum levels at any time. • • Waters designated as warm freshwater habitat: 5.0 mg/L • • Waters designated as cold freshwater habitat: 7.0 mg/L • • Waters designated as spawning habitat: 7.0 mg/L The monthly median of the average daily DO concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation.
Floating Material	Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses
Oil & Grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
Pesticides	Waters shall not contain individual pesticides or a combination of pesticides in concentrations that adversely affect beneficial uses.[a] Waters designated for use as domestic or municipal supply shall not contain concentrations of pesticides in excess of the limiting concentrations set forth in Title 22 of the California Code of Regulations or in excess of 1.0 micrograms per liter (µg/L) for thiobencarb.[b]
pH	The pH shall neither be depressed below 6.5 nor raised above 8.5.

Table 4.10-1. Water Quality Objectives of the Yuba River Upstream and Downstream of Englebright Dam

Water Quality Objective	Description
Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause a nuisance or adversely affect beneficial uses.
Settleable Material	Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affect beneficial uses.
Suspended Material	Waters shall not contain suspended material in concentrations that cause a nuisance or adversely affect beneficial uses.
Taste and Odor	Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies, fish flesh or other edible products of aquatic origin, or that cause nuisance or otherwise adversely affect beneficial uses.
Toxicity	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by analysis of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests as specified by the Regional Water Quality Control Board.
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits: where natural turbidity is less than 1 nephelometric turbidity unit (NTU), increases shall not cause downstream turbidity to exceed 2 NTUs • where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU • where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent • where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU • where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Exceptions to the above limits will be considered when a dredging operation can cause an increase in turbidity. In those cases, an allowable zone of dilution within which turbidity in excess of the limits may be tolerated will be defined for the operation and prescribed in a discharge permit.

Notes:
DO = dissolved oxygen, °F = degrees Fahrenheit, °C = degrees Celsius, mg/L = milligram per liter, µg/L = micrograms per liter, NTU = nephelometric turbidity unit

[a] The Basin Plan defines pesticide as: "(1) any substance, or mixture of substances, which is intended to be used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever, or (2) any spray adjuvant, or (3) any breakdown products of these materials that threaten beneficial uses."

[b] Thiobencarb, also referred to as benthiocarb, is an active ingredient of rice herbicides including Bolero® and Abolish®.

[c] Taste and odor limits for drinking water are provided as secondary maximum contaminant levels in Title 22 of the California Code of Regulations.

The most recent USEPA-approved section 303(d) list under the Clean Water Act (CWA) denotes water quality impairments for mercury in Englebright Reservoir and the lower Yuba River from Englebright Reservoir to the Feather River. Total maximum daily loads for the mercury listings in the Yuba River Basin are expected to be completed by 2027. The California Office of Environmental Health Hazard Assessment evaluates bioaccumulation of mercury in fishes and, when appropriate, issues fish ingestion advisories. It issued mercury-based fish ingestion advisories for Englebright Reservoir in 2009 and 2017 (FERC 2019).

4.10.2 Hydrology and Water Quality (X) Environmental Checklist and Discussion

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐

Less than Significant Impact

Sediment can be suspended in the water during woody debris removal. Many chemical constituents are lipophilic[3] and will absorb into or attach to organically enriched or fine particles of sediment. Water quality may be affected from debris removal when contaminants on the disturbed sediment particles are either dissolved or resuspended in the water. Debris removal operations may cause some degradation temporarily to surface waters in Englebright Lake as concentrations of turbidity and total suspended solids may increase and dissolved oxygen decrease as bottom sediments are disturbed in the debris removal process.

ECORP (2020) completed a preliminary sediment screening analysis in October-November of 2020 in order to determine the potential for existing chemical constituents at the Project debris removal site near the Narrows 2 intake in Englebright Lake, and to screen removed woody debris for potential waste disposal at Recology Landfill. On October 27, 2020, ECORP collected sediment and water samples from the benthos at two (2) sampling locations in front of the Narrows 2 Powerhouse intake. Sediment samples were retrieved from the benthos using a remote operated vehicle (ROV) operated by ASI Marine. The results of this analysis are included in Appendix D of this Initial Study.

Table D-2 in Appendix D compares the preliminary sediment sampling results at the Project site with sediment quality guidelines for the protection of human health and the environment developed by the San Francisco RWQCB called Environmental Screening Levels (ESLs) using data from samples collected from the San Francisco Bay area (San Francisco Regional Water Quality Control Board [SFRWQCB] 2019). USEPA also established Regional Screening Levels (RSLs) for the protection of human health for impacts of

[3] Lipophilicity refers to the ability of a chemical compound to dissolve in fats, oils, lipids, and non-polar solvents such as hexane or toluene.

contaminants in soil on future residents, as well as for impacts of contaminants in soil on groundwater (assumed to be potential drinking water) (USEPA 2020b).

Preliminary sediment sampling results shown in Table D-2 in Appendix D indicate that the material does not contain contaminants that would be hazardous to human health and the environment. Methylmercury was detected in water sample one at a concentration of 0.951 ng/l and in water sample two at a concentration of 1.18 ng/l. However, both of these methylmercury concentrations were below ESLs and RSLs.

Concentrations of arsenic and vanadium exceed the ESLs for human health, and arsenic concentrations are also above the Regional Screening Levels (RSLs) for protection future residential development and for groundwater. However, there is no current or planned residential development at the Project site or use of groundwater, and the debris that is removed from the lake will not be re-deposited at the Project site. Also, naturally occurring metals concentrations in sediment, including arsenic and vanadium, can often exceed these screening levels. Therefore, these concentrations are not expected to adversely affect human health. Finally, Table D-1 in Appendix D compares constituent results to Title 22 hazardous waste screening criteria used for waste acceptance by Recology Landfill. As shown in Table D-1 all sediment and water sample results are below hazardous waste determination thresholds. YCWA expects that Recology Landfill can accept the Project-generated woody debris waste as non-hazardous inert material.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐

Less than Significant Impact

The Project has been initiated to remove woody debris from the Narrows 2 Intake in Englebright Lake, and store and burn debris in two previously graded and gravel-lined storage areas on a nearby hillside. No structures or impermeable surfaces would be constructed as a part of the Project, and only minimal ground disturbance within these storage areas would occur. The depth to groundwater in the Project storage areas is unknown but is not expected to be shallow based on topography and soils information. None of the proposed debris removal operations in the lake would result in the direct decrease of groundwater supplies or recharge. Placing the estimated 175 cy of woody debris at the storage areas or disposal in a landfill would not result in or substantially interfere with any potential groundwater recharge as these facilities. As such, the Proposed Project would have a less-than-significant impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☐	☒

Less than Significant Impact with Mitigation Incorporated

The Project involves the removal of woody debris from the lakebed and storage at nearby previously-graded and graveled storage areas for drying and subsequent disposal by controlled burning, or transfer by truck to a local landfill as non-hazardous waste. No impervious surfaces would be constructed as a part of the Project.

Implementation of mitigation measures **BIO-1 and BIO-6** would reduce potential substantial erosion or siltation onsite or offsite during debris removal to a less-than-significant level. Once the Project is completed, the affected lakebed around the Narrows 2 Hydropower Intake and two upland storage/staging areas would return to their natural states and would not increase the amount of erosion or siltation in the area. Therefore, the Project would have a less-than-significant impact in this area.

All storm drainage in the area is provided through natural drainage except an existing aboveground 1' diameter plastic storm drainage pipe running along the access road from the Western storage area to the lake. The Project would not change this drainage. In addition, the Project would not result in construction of any new structures or placement of any equipment or facilities in the long-term. As such, the Proposed Project would have no impact in this area.

The removal of woody debris from the lake and storage and burning in the storage/staging areas would not impede or redirect flood flows. The Project would have no impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐

Less than Significant Impact

The Project involves the removal of non-hazardous woody debris from around a hydroelectric intake structure in Englebright Lake. The debris removal area and boat ramp within the Project area are mapped within a FEMA Special Flood Hazard Area without Base Flood Elevation (Zone A -1 percent annual chance of flood hazard). However, removal of debris from the intake is not expected to affect base flood elevations of affect flood hazards in the area. Therefore, the Project would have a less-than-significant impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Less than Significant Impact with Mitigation Incorporated

Englebright Lake is a part of the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (RWQCB 2018). This Basin Plan covers the entire area included in the Sacramento and San Joaquin River drainage basins. The Project site is not located within the boundaries of any groundwater management plan (YCWA 2010). The Sierra Foothill region of Yuba County to the east of the North Yuba and South Yuba groundwater basins is largely supplied by groundwater from fractured rock aquifers; because of the highly unreliable and unpredictable nature of fractured-rock wells, this portion of Yuba County is not covered by the YCWA Groundwater Management Plan (YCWA 2010).

The Basin Plan provides objectives for the protection of surface and ground water quality within the Sacramento River Basin. The removal of woody debris from the Narrows 2 hydropower intake may result in the potential localized increase of sediment and turbidity in the Englebright Lake due to disturbance of the lakebed. However, these water quality impacts would be a short-term and would not affect water quality in the Lower Yuba River, as the Narrows 2 intake will be closed during Project debris removal activities. Additionally, Implementation of mitigation measures **BIO-1 and BIO-6** would reduce potential water quality impacts during debris removal activities. As such, the Project would not conflict with or obstruct implementation of Basin Plan objectives. The Project would have a less-than-significant impact in this area.

4.10.3 Mitigation Measures

Mitigation measures **BIO-1 and BIO-6** (see Biological Resources [IV]) would be implemented to reduce potential substantial erosion or siltation onsite or offsite during debris removal to a less-than-significant level.

4.11 Land Use and Planning

4.11.1 Environmental Setting

While Englebright Lake provides the boundary between Yuba and Nevada counties, the Project site appears to be wholly located within Yuba County. The Project site is located along the southwestern banks of Englebright Lake and the immediate area is primarily characterized by foothill pine woodland with several paved and graveled access roads and equipment staging pads and the concrete Narrows 2 Hydropower Intake Platform and Englebright Dam. The boat launch is not paved or developed but is comprised of unvegetated compacted soil on a relatively shallow slope. The surrounding uplands are comprised of undeveloped woodland.

A few rural residencies occur near Scott Forbes Road approximately 3 miles to the west of the Project site. Shown in Table 4.11-1 are the General Plan land use designation and zoning district for the Project site (Yuba County 2018) .

Table 4.11-1. General Plan Land Use and Zoning District	
General Plan Designation:	**Yuba County**: Natural Resources Land Use. Includes land containing natural or potential park and recreation features, identifies areas suitable for passive recreational activities, and identifies lake recreation areas to provide for use of these areas.
Zoning:	**Yuba County**: Recreation (REC) for Boat Ramp facility. Agriculture (AG) for area to be dredged

4.11.2 Land Use and Planning (XI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒

No Impact

The Project site is within an unincorporated portion of Yuba County and not within an established community. Therefore, implementation of the Project would not divide an established community and would have no impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

No Impact

The Project would include the removal, temporary storage, and disposal of woody debris around a hydropower intake to maintain adequate water flows used for hydroelectric power generation, agricultural water supply, recreational uses, and fish habitat in the Yuba River. The proposed Project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

4.11.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.12 Mineral Resources

4.12.1 Environmental Setting

The State-mandated Surface Mining and Reclamation Act of 1975 requires the identification and classification of mineral resources in areas within the state subject to urban development or other irreversible land uses that could otherwise prevent the extraction of mineral resources. These designations categorize land as Mineral Resource Zones (MRZ-1 through MRZ-4).

Neither Yuba County's 2030 General Plan nor the California Department of Conservation Division of Mine Reclamation (DMR), identifies the Project site as within a mineral resource zone (DMR 2016; Yuba County 2011).

4.12.2 Mineral Resources (XII) Environmental Checklist and Discussion

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

No Impact

As discussed above, the County and DMR do not identify any mineral resources in the Project vicinity, including the Project site. Therefore, no impacts would occur to mineral resources.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

No Impact

The Project site is not identified as a mineral resource recovery site in the Yuba County General Plan. There would be no impact in this area.

4.12.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.13 Noise

4.13.1 Environmental Setting

Noise Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. The selection of a proper noise descriptor for a specific source is dependent on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- **Day-Night Average (L_{dn})** is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
- **Community Noise Equivalent Level (CNEL)** is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 pm to 10:00 pm and a 10-dBA weighting added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the evening and nighttime, respectively.

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2011). Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed (FHWA 2011).

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60- to 70-dBA range, and high, above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA, the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1.0 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3.0-dBA change is considered a just-perceivable difference.
- A change in level of at least 5.0 dBA is required before any noticeable change in community response would be expected. An increase of 5.0 dBA is typically considered substantial.
- A 10.0-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Noise Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as hospitals, historic sites, cemeteries, and certain recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

The nearest noise-sensitive receptors to the Project site are a single-family residence located approximately 2,738 feet south of the Project site beyond Yuba River and a United States Army Corps of Engineers (USACE) park personnel lodging approximately 886 feet east of the Project site.

Vibration Fundamentals

Ground vibration can be measured several ways to quantify the amplitude of vibration produced. This can be through peak particle velocity or root mean square velocity. These velocity measurements measure maximum particle at one point or the average of the squared amplitude of the signal, respectively.

Vibration impacts on people can be described as the level of annoyance and can vary depending on an individual's sensitivity. Generally, low-level vibrations may cause window rattling but do not pose any threats to the integrity of buildings or structures.

Existing Ambient Noise Environment

The County of Yuba is impacted by various noise sources. It is subject to typical urban noise such as noise generated by traffic, heavy machinery, and day-to-day outdoor activities as well as noise generated from the various land uses (i.e., residential, commercial, institutional, and recreational and parks activities) throughout the County that generate stationary source noise. Mobile sources of noise, especially cars and trucks, are the most common and continuous source of noise in the County. However, given the rural location of the Project site, the major noise sources in the vicinity of the Project site are the Narrows 2 hydro powerplant and its various mechanical and maintenance activities, and Englebright Lake Dam and the noise produced by the water it releases at its base. The existing noise environment is also influenced by the various outdoor recreational activities (e.g., people talking on boats, watersports, gatherings on houseboats).

The American National Standards Institute (ANSI) Standard 12.9-2013/Part 3 "Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-Term Measurements with an Observer Present" provides a table of approximate background sound levels in L_{dn}, daytime L_{eq}, and nighttime L_{eq}, based on land use and population density. The ANSI standard estimation divides land uses into six distinct categories. Descriptions of these land use categories, along with the typical daytime and nighttime levels, are provided in Table 4.13-1. At times, one could reasonably expect the occurrence of periods that are both louder and quieter than the levels listed in the table. ANSI notes, "*95% prediction interval [confidence interval] is on the order of +/- 10 dB*." The majority of the Project area would be considered ambient noise Category 6 (very quiet sparse suburban or rural residential areas).

Table 4.13-1. ANSI Standard 12.9-2013/Part 3 A-weighted Sound Levels Corresponding to Land Use and Population Density

Category	Land Use	Description	People per Square Mile	Typical L_{dn}	Daytime L_{eq}	Nighttime L_{eq}
1	Noisy Commercial & Industrial Areas and Very Noisy Residential Areas	Very heavy traffic conditions, such as in busy, downtown commercial areas; at intersections for mass transportation or for other vehicles, including elevated trains, heavy motor trucks, and other heavy traffic; and at street corners where many motor buses and heavy trucks accelerate.	63,840	67 dBA	66 dBA	58 dBA
2	Moderate Commercial & Industrial Areas and Noise Residential Areas	Heavy traffic areas with conditions similar to Category 1, but with somewhat less traffic; routes of relatively heavy or fast automobile traffic, but where heavy truck traffic is not extremely dense.	20,000	62 dBA	61 dBA	54 dBA
3	Quiet Commercial, Industrial Areas and Normal Urban & Noisy Suburban Residential Areas	Light traffic conditions where no mass transportation vehicles and relatively few automobiles and trucks pass, and where these vehicles generally travel at moderate speeds; residential areas and commercial streets, and intersections, with little traffic compose this category.	6,384	57 dBA	55 dBA	49 dBA
4	Quiet Urban & Normal Suburban Residential Areas	These areas are similar to Category 3, but for this group, the background is either distant traffic or is unidentifiable; typically, the population density is one-third the density of Category 3.	2,000	52 dBA	50 dBA	44 dBA
5	Quiet Residential Areas	These areas are isolated, far from significant sources of sound, and may be situated in shielded areas, such as a small wooded valley.	638	47 dBA	45 dBA	39 dBA
6	Very Quiet Sparse Suburban or rural Residential Areas	These areas are similar to Category 4 but are usually in sparse suburban or rural areas; and, for this group, there are few if any nearby sources of sound.	200	42 dBA	40 dBA	34 dBA

Source: The American National Standards Institute (ANSI) 2013

4.13.2 Noise (XIII) Environmental Checklist and Discussion

	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

Less than Significant Impact

Noise Impacts

Noise associated with the proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite Project implementation activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., crane or tractor activity, material hauling vehicles, potential motor-boat activities). Noise generated by construction equipment, including cranes, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Construction noise levels could negatively affect sensitive land uses in the vicinity of the construction site. As previously described, the nearest sensitive receptors to the Project site are a single-family residence located approximately 2,738 feet south of the Project site beyond Yuba River and USACE park personnel lodging approximately 886 feet east of the Project site.

The County does not promulgate a numeric threshold pertaining to the noise associated with temporary, construction-type activities. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Additionally, implementation of the proposed Project would occur throughout the Project site and would not be concentrated at one point.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptors in the Project vicinity, the construction equipment noise levels were calculated using the Roadway Noise Construction Model for the construction process and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by National Institute for Occupational Safety and Health (NIOSH). A division of the US Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per

day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby existing and future planned sensitive receptors.

Short-term noise levels generated from the potential use of a small motorboat to transport personnel to the excavation site were not modeled for the purpose of this analysis as these activities are consistent with the general recreational activities of the existing ambient environment, given the location of the Project site is surrounded by a recreational lake.

The anticipated short-term construction noise levels generated from Project construction equipment are presented in Table 4.13-2 and the noise modeling data outputs are presented in Appendix E**.** As previously stated, the nearest sensitive receptors to the Project site are a single-family residence located approximately 2,738 feet south of the Project site beyond Yuba River and USACE park personnel lodging approximately 886 feet east of the Project site.

Table 4.13-2. Project Implementation Average (dBA) Noise Levels by Receptor Distance and Construction Equipment

Equipment	Estimated Exterior Construction Noise Level @ Closest Noise Sensitive Receptor	Construction Noise Standard (dBA Leq)	Exceeds Standards?
Debris Removal			
Crane (1)	47.6	*85*	**No**
Tractors/Loaders/Backhoes (1)	55.1	*85*	**No**
Off-Highway Truck (1)	45.3	*85*	**No**
Combined Debris Removal Equipment	56.1	*85*	**No**
Debris Burning			
Off-Highway Truck (1)	45.3	*85*	**No**
Combined Debris Burning Equipment	**45.3**	*85*	**No**
Debris Hauling Offsite (Alternative 1)			
Off-Highway Truck (2)	45.3 (each)	*85*	**No**
Combined Debris Hauling Offsite Equipment	**48.3**	*85*	**No**

Source: Construction noise levels were calculated by ECORP Consulting using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Appendix E for Model Data Outputs.

Notes: Equipment used during Project implementation derived from the Project Description.

L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

As shown, no cumulative or individual piece of equipment would exceed 85 dBA NIOSH construction noise standard at the nearby noise- sensitive receptors. A less than significant impact would occur, and no mitigation is necessary.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

Less than Significant Impact

Project Implementation-Generated Vibration

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term construction-related activities. Project implementation activities would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as tractors and trucks. It is noted that pile drivers would not be necessary during Project implementation. Vibration decreases rapidly with distance and it is acknowledged that Project implementation activities would occur throughout the Project site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with construction equipment are summarized in Table 4.13-3.

Table 4.13-3. Representative Vibration Source Levels for Construction Equipment

Equipment Type	Peak Particle Velocity (PPV) at 25 Feet (inches per second)
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Hoe Ram	0.089
Jackhammer	0.035
Small Bulldozer/Tractor	0.003
Vibratory Roller	0.210

Source: Federal Transit Administration (FTA) 2018; Caltrans 2020

Yuba County is the jurisdiction that contains structures that could be impacted from vibration due to implementation of the Project. The County does not currently regulate heavy-duty equipment induced vibrations. However, a discussion of vibration is included for full disclosure purposes. For comparison purposes, the Caltrans (2020) recommended standard of 0.2 inch per second PPV with respect to the prevention of structural damage is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings. The nearest structures of concern to the Project site are an outbuilding located 282 feet to the west and the Englebright Dam located 365 feet south of the proposed Project site. The FTA provides the following equation:

$$[PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}]$$

Table 4.13-4 presents the expected Project related vibration levels at a distance of 282 feet.

Table 4.13-4. Construction Vibration Levels at 282 Feet

Receiver PPV Levels (in/sec)[1]					Peak Vibration	Threshold	Exceed Threshold
Small Bulldozer	Jackhammer	Loaded Trucks	Large Bulldozer/ Caisson Drilling/Hoe Ram	Vibratory Roller			
0.000	0.001	0.002	0.002	0.006	**0.006**	*0.2*	**No**

Notes: [1]Based on the Vibration Source Levels of Construction Equipment included on Table 4.13-3 (FTA 2018). Distance to the nearest structure is approximately 282 feet measured from the center of the Project site.

As shown in Table 4.13-4, vibration as a result of Project implementation activities would not exceed 0.2 PPV at the nearest structure. Thus, Project implementation would not exceed the recommended threshold. A less than significant impact would occur as a result of implementation of the proposed Project and all options.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

No Impact

The Project site center is located approximately 3.27 miles northwest of the Limberlost Ranch Airport, 10.12 miles northeast of the Beale Air Force Base, and 18.89 miles northeast of the Yuba County Airport. Given the nature of the proposed Project and its options, and the distance to the nearest airport, the

Project would not expose individuals to excessive noise airport noise levels. As such, no impact would occur

4.13.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.14 Population and Housing

4.14.1 Environmental Setting

The California Department of Finance (DOF) provides estimated population and housing unit demographics by year throughout the state. The DOF estimates that Yuba County had a total population of 78,887 and the unincorporated County had a population of 62,822 as of January 1, 2020 (DOF 2020), There were 29,059 total housing units in Yuba County and 22,505 in the unincorporated County as of January 1, 2020 (DOF 2020).

4.14.2 Population and Housing (XIV) Environmental Checklist and Discussion

	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒

No Impact

No new roads or extensions of existing roads are proposed. The Project does not include the construction of any new homes or infrastructure. Therefore, direct or indirect increases in population growth would not occur as a result of the Project.

	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b)	Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

No Impact

No residences would be removed as a result of the Project. The Project would have no impact on existing housing.

4.14.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.15 Public Services

4.15.1 Environmental Setting

Public services include fire protection, police protection, parks and recreation, and schools. Generally, impacts in these areas are related to an increase in population from a residential development. Levels of service are generally based on a service to population ratio, except for fire protection, which is usually based on a response time.

Police Services

Law enforcement services are provided by the Yuba County Sheriff's Department (YCSD) within the unincorporated County (AECOM 2011). In addition, the California Highway Patrol provides traffic control, investigation, law enforcement services related to vehicles on State highways, freeways, and roads in the unincorporated portions of the County. The nearest police station is the YCSD substation in Browns Valley, approximately 10 miles west of the Project.

Fire Services

Fire protection in the Project area services are provided by CAL-FIRE Nevada-Yuba-Placer Unit which serves as the fire lead agency within the State Responsibility Areas. The nearest CAL-FIRE station is at 8839 Hwy 20 Smartsville, Ca, approximately 11 miles from the Project site.

In addition, the Smartsville Fire Protection District provides volunteer firefighting services to the Smartsville area.

Emergency Medical Facilities

The nearest medical facility is Adventist Health and Rideout Hospital at 726 4th Street in Marysville, 23 miles west of the Project site.

Schools

Browns Valley Elementary School (K-6) of the Marysville Joint Union School District in Browns Valley is the nearest schools to the Project site. It is located approximately 10 miles west of the Project.

Parks

The closest park to the Project is Englebright Reservoir, managed by the USACE per the USACE's Rules and Regulations Governing Public Use of Corps of Engineers Water Resources Development Projects (YCWA 2021). The reservoir has a surface area and shoreline length of approximately 815 acres and 24 miles, respectively, and its water surface elevation normally fluctuates within an 8-ft-wide band between elevations of 517 ft and 525 ft which facilitates flat water recreation on the reservoir. The reservoir offers picnicking, angling, boat-in camping, houseboating, and boating. Two paved boat launch ramps provide

access to the reservoir for boating and boat-in camping. The boat-in camping opportunities occur at 18 campgrounds with a total capacity of 100 campsites (USACE 2021). Each campground varies in size ranging from two to 15 campsites. Campsites typically consist of a table, fire grill, lantern hanger, and several tent pads with portable restrooms centrally located in all camping areas. Drinking water is available near each launch ramp. A marina offers boat rentals, mooring, fuel, sanitation, and store facilities. In addition, the reservoir provides angling opportunities for rainbow and brown trout, largemouth and smallmouth bass, catfish, sunfish, and Kokanee salmon (USACE 2020). In compliance with Article 403 of the existing license, YCWA reimburses a private fish hatchery, and coordinates with CDFW, for stocking up to 5,000 rainbow trout in Englebright Reservoir each year. CDFW enforces State fishing and hunting regulations throughout the reservoir area. The Project debris removal area is within a portion of Englebright Reservoir cordoned off for public access by a buoy line to protect the Narrows 2 intake structure and the dam. The small dirt boat ramp and the storage /staging areas that will be used for the Project are on a hill on the west side of the lake that is not accessible by road or trail for public use.

Another park in the general Project vicinity is Hammon Grove Regional Park, managed by Yuba County. located 11-miles west of the Project site along State Route 20 (SR20). Hammon Grove Park recreational facilities include access to the Lower Yuba River, picnicking, hiking, and fishing.

4.15.2 Public Services (XV) Environmental Checklist and Discussion

	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☐
	Fire Protection?	☐	☐	☒	☐
	Police Protection?	☐	☐	☒	☐
	Schools?	☐	☐	☐	☒
	Parks?	☐	☐	☐	☒
	Other Public Facilities?	☐	☐	☐	☒

Fire Protection

Less than Significant Impact

The Project site is located approximately 11 miles from the nearest fire station. The Project would not result in an increase in population and thereby not require additional fire facilities to serve this population. The Proposed Project would not require any additional CAL-FIRE facilities, equipment, or staff and is not anticipated to create an additional burden on existing fire facilities.

The Project would only involve a small crew of personnel (approximately 10 people) who are expected to commute from nearby areas. Therefore, construction of new facilities to maintain acceptable service ratios in the nearby areas would not be required for the Project.

Frequent truck trips on roads where fire stations or emergency medical facilities are located could potentially have an effect on emergency access and service. Under the Project's offsite debris disposal option at the Recology Ostrom Landfill in Wheatland, the proposed haul route (as shown in Figure 4. *Proposed Disposal Haul Route)* passes one block from the CAL-FIRE Marysville Station 95 at 107n 9th Street in downtown Marysville. However, the estimated quantity of removed/transported debris would only require 12 round-trip truck trips to the landfill that would be spread out over several days. This small number of Project-related truck trips through downtown Marysville near SR 20 and SR70 is very small in relation to the number of semi-trucks using these surface streets, and therefore is not expected to affect emergency access. In addition, surface streets and access roads within and near the Project site are wide enough to allow passage of emergency vehicles around semi-trucks used for the Project. Therefore, the Project would have a less-than-significant impact on fire protection services and emergency medical services.

Police Services

Less than Significant Impact

The Project would not result in a significant increase in demand for police protection resulting in new or expanded police facilities. Police facilities and the need for expanded facilities are based on the staffing levels these facilities must accommodate. Police staffing levels are generally based on the population/police officer ratio, and an increase in population is usually the result of an increase in housing or employment. The Project would not result in an increase in population to the area. As such, the Project would not result in the need for increase in police protection or police facilities. Therefore, the Project would have a less-than-significant impact in this area.

Schools

No Impact

The Project proposes removal of woody debris from a small area within Englebright Lake using a small construction crew over an approximately one-month period. Because the Proposed Project would not increase the population or result in substantial employment gains, an increase of student population in the Marysville Joint Union School District would not occur nor would additional educational facilities be required. Therefore, the Project would have no impact in this area.

Parks

No Impact

The Project would occur in areas of Englebright Lake Recreation Area that are not accessible or routinely used by the public and would not require the closure of park facilities or expansion of or new park facilities. The need for additional parkland is primarily based on an increase in population to an area. Given that this short-term Project would not result in an increase in population, the Project would not burden any parks in the surrounding area beyond capacity by generating additional recreational users. The Project would also not result in an increase in demand for parks and recreation facilities in the surrounding area. Therefore, there would be no impact to parks from implementation of the Project.

Other Public Facilities

No Impact

The Proposed Project does not result in an increase in housing or population in the county resulting in an increased use of other public facilities. Therefore, the Project would have no impacts on other public facilities.

4.15.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.16 Recreation

4.16.1 Environmental Setting

The closest park to the Project is Englebright Reservoir, managed as a recreation area by the USACE per the USACE's Rules and Regulations Governing Public Use of Corps of Engineers Water Resources Development Projects (YCWA 2021). The reservoir offers picnicking, angling, boat-in camping, houseboating, and boating. Two paved boat launch ramps on the Nevada County side of the lake approximately 0.33 mile east of the Project provide access to the reservoir for boating and boat-in camping. The boat-in camping opportunities occur at 18 campgrounds with a total capacity of 100 campsites (USACE 2020). Each campground varies in size ranging from two to 15 campsites. Campsites typically consist of a table, fire grill, lantern hanger, and several tent pads with portable restrooms centrally located in all camping areas. Drinking water is available near each launch ramp. Skippers Cove Marina approximately 0.33 mile east of the Project offers boat rentals, mooring, fuel, sanitation, and store facilities. The nearest boat-in campgrounds to the Project area is approximately 0.15 mile north of the Project dirt boat ramp. Hogback Campground is approximately 0.25 miles Northwest of the Project boat ramp. Views of the project site from both of these campgrounds are hidden by hills and trees.

In addition, the reservoir provides angling opportunities for rainbow and brown trout, largemouth and smallmouth bass, catfish, sunfish, and Kokanee salmon (USACE 2020). In compliance with Article 403 of the existing license, YCWA reimburses a private fish hatchery, and coordinates with CDFW, for stocking up to 5,000 rainbow trout in Englebright Reservoir each year. CDFW enforces State fishing and hunting

regulations throughout the reservoir area. The Project debris removal area is within a portion of Englebright Reservoir cordoned off for public access by a buoy line to protect the Narrows 2 intake structure and the dam. The small dirt boat ramp and the storage /staging areas that will be used for the Project are on a hill on the west side of the lake that is not part of the Englebright Lake recreation area, and is not accessible by road or trail for public use.

4.16.2 Recreation (XVI) Materials Checklist

	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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?	☐	☐	☐	☒

No Impact

As stated previously, the need for additional parkland is primarily based on an increase in population to an area. Given that the Project would not increase Yuba County's population, and would not require closing any of the Englebright Lake recreational facilities or portions of the lake, the Project would not burden any parks in the surrounding area beyond capacity by generating additional recreational users. Therefore, the Project would not increase the use of park and recreational facilities resulting in substantial physical deterioration of the facility. There would be no impact to recreational facilities from construction of the Project.

	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b)	Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

No Impact

No recreational facilities are proposed as a part of the Project. The Project would have a no impact in this area.

4.16.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.17 Transportation

4.17.1 Environmental Setting

Existing Street and Highway System

The Project is located in a rural area surrounded by recreational, open space, and utility infrastructure uses. Access to the Project site is provided by Peoria Rd or Sicard Flat Roads and Scott Forbes Road via State Route 20. Peoria Road is identified in the Yuba County 2030 General Plan Final EIR (AECOM 2011) as a northeast/southwest trending two-lane rural minor collector road. Sicard Road and Scott Forbes Roads are identified as 2-lane local roads providing access to sparse rural residences, The University of California Sierra Foothill Research and Extension Center, and Englebright Dam and its associated Narrows 2 hydropower facilities. Although no specific traffic counts are provided, the Yuba County 2030 General Plan EIR indicates that Peoria Road has operated at or below Yuba County's Level of Service (LOS) C, indicating a maximum of 7,000 vehicles per PM Peak Hour traffic volume.

General Plan Policy CD16.3 requires the following LOS on county roads.

> "On County roads in rural areas Level of Service D shall be maintained, as feasible, during the Peak PM hour"

The segment of State Route 20 closest to the Project site near the intersections of Peoria Road, Sicard Flat Road, and east to the intersection of Hammonton-Smartsville Road has operated at or below LOS C with a Peak PM traffic volume of 4,900 based on 2007 traffic count data (AECOM 2011).

No planned or recommended County roadway improvements to any of these local roads or segment of SR20 closest to the Project site are listed in the Yuba County General Plan (AECOM 2011).

Alternative Transportation Modes

Bicycle Facilities. The Yuba-Sutter Bikeway Master Plan (1995) and Sacramento Area Council of Governments' (SACOG) 2009 Regional Bicycle, Pedestrian, and Trails Master Plan provides guidelines for the future bike and pedestrian facilities in the County. According to these Plans, there are no existing bicycle or pedestrian facilities within the area of the Project site.

Public Transit. Public transportation bus service is provided in Yuba County through Yuba-Sutter Transit. However, no bus routes or stops are available or planned within the Project area, including the segment of SR20 in the Project vicinity (AECOM 2011).

4.17.2 Transportation (XVII) Environmental Checklist and Discussion

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐

Less than Significant Impact

Because the Project would not directly or indirectly introduce a new population in the region from residential, commercial, or industrial development, once completed, the total number of vehicle trips generated by the Project is not expected to change from existing conditions. Project activities will, however, result in temporary increases in local traffic due to the transport of Project personnel, equipment, and material to and from the Project site.

The removal, storage, and disposal of woody from the Project site is considered to have only short-term effects on traffic and circulation conditions within the area. There are no planned road closures as a result of Project construction and traffic control would be provided, as necessary. The Project site is not located in an area that would affect transit, bicycle, or pedestrian facilities as none are in the area. Therefore, the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system and would have a less-than-significant impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b)	Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐

Less than Significant Impact

CEQA Guidelines Section 15064.3, subdivision (b) provides criteria for analyzing transportation impacts based on a vehicle miles traveled (VMT) methodology instead of the now superseded LOS methodology (as of January 1, 2019). Pertinent to the Proposed Project are those criteria identified in Section 15064.3(b)(1) Land Use Projects. According to this section:

> "Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor[4] should be presumed to cause a less than

[4]"High-quality transit corridor" means an existing corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours. For the purposes of this Appendix, an "existing stop along a high-

> significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact."

SACOG is an association of local governments in the six-county Sacramento region. Its members include the counties of El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba, and the 22 cities within. SACOG provides transportation planning and funding for the region and serves as a forum for the study and resolution of regional issues. In addition to preparing the region's long-range transportation plan. As a part of the regional transportation planning for the SACOG region, SACOG provides the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). The MTP/SCS pro-actively links land use, air quality, and transportation needs. The MTP/SCS supports the Sacramento Region Blueprint, which implements smart growth principles, including housing choice, compact development, mixed-use development, natural resource conservation, use of existing assets, quality design, and transportation choice. It also provides increased transportation options while reducing congestion, shortening commute times, and improving air quality (SACOG 2020).

According to the 2016 MTP/SCS Draft EIR, the criteria for determining significance under CEQA related to VMT would be if any of the following would occur:

1. Cause an increase in VMT per capita that exceeds the applicable baseline average; or
2. Cause an increase in VMT on congested roadways (C-VMT) per capita relative to the applicable baseline for the area and cause an increase in C-VMT per capita that exceeds the baseline regional average.

As stated previously, the only traffic caused by the Project would be construction traffic during removal operations, and potentially debris transport to a local landfill. Once completed, the Project would not result in additional traffic in the area. According to the CalEEMod model used for the air quality analysis (See Section 4.3 – Air Quality), the Project would generate 20 total daily worker trips for the scenario involving on-site burning, and 25 daily worker trips under the scenario involving hauling debris off-site. Over the 30-day length of the Project, this results in a total of 600 worker trips under the scenario involving on-site burning, or 750 worker trips under the scenario involving hauling debris off-site. If debris is hauled off-site, the removed woody debris would likely be by dump truck. Assuming that each dump truck can carry 15 cubic yards (cy) of material, disposal of 175 cy of debris offsite would take approximately 12 truck trips over a three-day period or longer.

The Project would result in a short-term increase in the amount of traffic on the local and regional roadways during construction. However, the Project would not result in an increase in population, housing or commercial uses in the area and therefore not result in an increase in VMT. Additionally, the Project would not increase capacity of any of the affected roadways in the area and as such, would not lead to a

quality transit corridor" may include a planned and funded stop that is included in an adopted regional transportation improvement program.

measurable and substantial increase in VMT. Therefore, the Proposed Project would have a less-than-significant impact in this area

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

No Impact

No modifications to roadway features are proposed as part of the Project. Therefore, the Project would have no impact in this area.

Would the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d)	Result in inadequate emergency access?	☐	☐	☐	☒

No Impact

No new developments or modifications to roadway features are proposed as part of the Project, and roads used for the Project have sufficient width to allow for emergency vehicle passage around other vehicles. Therefore, the Project would not result in any adverse impact on emergency access. As such, the Project would have no impact regarding emergency access.

4.17.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.18 Tribal Cultural Resources

This section describes the affected environment and regulatory setting for Tribal Cultural Resources (TCRs) in the Project Area. The following analysis of the potential environmental impacts related to TCRs is derived primarily from the following sources:

- California Native American Heritage Commission Sacred Lands File Search, January 12, 2021;
- Cultural Resources Inventory and Evaluation Report for the Yuba County Water Agency Narrows 2 Intake Debris Removal Project, prepared by ECORP Consulting Inc. (2021);
- Ethnographic overviews of the Nisenan (Beals 1933; Kroeber 1976; Levy 1978; Littlejohn 1928; Loeb 1933; Wilson and Towne 1978); and

- Confidential AB52 tribal consultation record between YCWA and the Shingle Spring Band of Miwok Indians and the United Auburn Indian Community.

4.18.1 Environmental Setting

Ethnographic, Religious, and Cultural Context

Ethnographically, the Project Area is in the southwestern portion of the territory occupied by the Penutian-speaking Nisenan. Nisenan inhabited the drainages of the Yuba, Bear, and American rivers, and also the lower reaches of the Feather River, extending from the east banks of the Sacramento River on the west to the mid to high elevations of the western flank of the Sierra Nevada to the east (Wilson and Towne 1978). The territory extended from the area surrounding the current city of Oroville in the north to a few miles south of the American River in the south. The Sacramento River bounded the territory on the west, and in the east, it extended to a general area located within a few miles of Lake Tahoe.

As a language group, Nisenan (meaning "from among us" or "of our side") are members of the Maiduan Family of the Penutian language group and are generally divided into three groups based on dialect differences: the Northern Hill (mountain) Nisenan in the Yuba River drainage; the Valley Nisenan along the Sacramento River; and the Southern Hill (foothills) Nisenan along the American River (Beals 1933; Kroeber 1925; Wilson and Towne 1978). Individual and extended families "owned" hunting and gathering grounds, and trespassing was discouraged (Kroeber 1925; Wilson and Towne 1978). Residence was generally patrilocal, but couples had a choice in the matter (Wilson and Towne 1978).

The basic social and economic group for the Nisenan was the family or household unit. The nuclear and/or extended family formed a corporate unit. These basic units were combined into distinct village or hamlet groups, each largely composed of blood-related kin (Beals 1933; Littlejohn 1928). Lineage groups were important political and economic units that combined to form tribelets, which were the largest sociopolitical unit identified for Nisenan (Wilson and Towne 1978). Each tribelet had a chief or headman who exercised political control over all villages within it. Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief. The role of chief seems to have been an advisory role with little direct authority (Beals 1933), but with the support of the shaman and the elders, the word of the chief became virtually the law (Wilson and Towne 1978). Tribelets assumed the name of the head village where the chief resided (Beals 1933; Levy 1978).

The office of tribelet chief was hereditary, with the chieftainship being the property of a single patrilineage within the tribelet. Tribelet populations of Valley Nisenan were as large as 500 persons (Wilson and Towne 1982:6). Each tribelet exercised control over the natural resources of a boundless tract of land (Littlejohn 1928). Beals (1933:359) estimated that Valley Nisenan tribelet territories averaged approximately 10 miles along each boundary, or 100 square miles. Littlejohn (1928) noted that in many instances, these boundaries were indicated by piles of stones. Regardless, Nisenan groups tended to stay within their village areas except during the summer season when groups of people would journey into the mountains to hunt and gather (Littlejohn 1928).

Nisenan practiced seasonal migration, a subsistence strategy involving moving from one area or elevation to another to harvest plants, fish, and hunt game across contrasting ecosystems that were in relatively

close proximity to each other. Valley Nisenan generally did not range beyond the valley and lower foothills, while foothill and mountain groups ranged across a more extensive area that included jointly shared territory whose entry was subject to traditional understandings of priority of ownership and current relations between the groups (d'Azevedo 1963).

During most of the year, Nisenan usually lived in permanent villages located below about 2,500 feet that generally had a southern exposure, were surrounded by an open area, and were located above, but close to, watercourses (Littlejohn 1928). The rather large uninhabited region between the 3,000-foot contour and the summit of the Sierra Nevada was considered "open ground" that was only used by communities living along its edge (Littlejohn 1928:20). Beals (1933) noted that permanent villages in the foothills and mountains were usually located on high ground between rivers. Valley villages were also usually located on raised areas to avoid flooding. Littlejohn (1928) stated that at one time or another there were settlements located on every small stream within Nisenan territory, but permanent villages were not located in steep, dark, narrow canyons of large rivers, or at altitudes where deep snows persisted throughout the winter. In fact, permanent occupation sites above 3,500 feet were only located in protected valleys (Littlejohn 1928).

Communally organized Nisenan task groups exploited a wide variety of resources. Communal hunting drives were undertaken to obtain deer, quail, rabbits, and grasshoppers. Bears were hunted in the winter when their hides were at their best condition. Runs of salmon in the spring and fall provided a regular supply of fish, while other fish such as suckers, pike, whitefish, and trout were obtained with snares, fish traps, or with various fish poisons such as soaproot (Beals 1933; Faye 1923; Wilson and Towne 1978). Birds were caught with nooses or large nets and were also occasionally shot with bow and arrow. Game was prepared by roasting, baking, or drying. In addition, salt was obtained from a spring near modern-day Rocklin (Wilson and Towne 1978).

Acorns were gathered in the fall and stored in granaries for use during the rest of the year. Although acorns were the staple of the Nisenan diet, they also harvested roots like wild onion (Wilson and Towne 1978). Buckeye, pine nuts, hazelnuts, and other edible nuts further supplemented the diet. Key resources such as acorns, salmon, and deer were ritually managed through ceremonies to help successful and equitable distribution of resources (Beals 1933; Swezey 1975; Swezey and Heizer 1977).

Trade was important with goods traveling from the coast and valleys up into the Sierra Nevada and beyond to the east, and vice versa. Coastal items like shell beads, salmon, salt, and foothill pine nuts were traded for resources from the mountains and farther inland, such as bows and arrows, deer skins, and sugar pine nuts. In addition, obsidian was a valued resource imported from the north (Wilson and Towne 1978).

Flaked and ground stone tools were common among the Nisenan and included knives, arrow and spear points, club heads, arrow straighteners, scrapers, rough cobble and shaped pestles, bedrock mortars, grinding stones (metates), pipes, charms, and short spears (Beals 1933; Wilson and Towne 1978). Nisenan used baskets for a variety of tasks, including storage, cooking, serving and processing foods, traps, cradles, hats, cages, seed beaters, and winnowing trays. Basket manufacturing techniques included both twining and coiling, and baskets were decorated with a variety of materials and designs. Other woven

artifacts include tule matting and netting made of milkweed, sage fibers, or wild hemp (Wilson and Towne 1978).

The Spanish arrived on the central California coast in 1769, and by 1776 it had been explored by José Canizares. In 1833, an epidemic most likely to be malaria raged through the Sacramento Valley, killing an estimated 75 percent of the native population. The discovery of gold in 1848 at Sutter's Mill, near the Nisenan village of *Colluma* (now Coloma) on the South Fork of the American River, drew thousands of miners into the area, and led to widespread killing and the virtual destruction of traditional Native American cultures.

4.18.2 Regulatory Setting

Assembly Bill 52

Effective July 1, 2015, AB 52 amended CEQA to require that: 1) a lead agency provide notice to those California Native American tribes that requested notice of projects proposed by the lead agency; and 2) for any tribe that responded to the notice within 30 days of receipt with a request for consultation, the lead agency must consult with the tribe. Topics that may be addressed during consultation include TCRs, the potential significance of project impacts, type of environmental document that should be prepared, and possible mitigation measures and project alternatives.

Pursuant to AB 52, Section 21073 of the PRC defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes.

Section 21074(a) of the PRC defines TCRs for the purpose of CEQA as:

1) Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

    a. included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or
    b. included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or
    c. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Because criteria a and b also meet the definition of an Historical Resource under CEQA, a TCR may also require additional consideration as an Historical Resource. TCRs may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their tribal cultural resources and heritage, AB 52 requires that CEQA lead agencies provide tribes that requested notification an opportunity to consult at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on the environment under CEQA, consultation is used to develop appropriate avoidance, impact minimization, and mitigation measures.

In accordance with Section 21082.3(c)(1) of the PRC, "… information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with subdivision (r) of Section 6254 of, and Section 6254.10 of, the Government Code, and subdivision (d) of Section 15120 of Title 14 of the CCR, without the prior consent of the tribe that provided the information." Therefore, the details of tribal consultation summarized herein are provided in a confidential administrative record and not available for public disclosure without written permission from the tribes.

Summary of Tribal Consultation under AB 52

At the time the YCWA was ready to initiate CEQA review, it had received written requests to receive project notices from the two following California Native American Tribes, which identified themselves as being traditionally and culturally affiliated with the lands subject to YCWA jurisdiction:

- Shingle Spring Band of Miwok Indians; and
- UAIC of Auburn Rancheria.

On February 17, 2021, YCWA determined that it had a complete project description and it was prepared to begin review under CEQA. On February 17, 2021, YCWA sent initial notification letters to each of the two tribes with project information and an invitation to consult on the Project. YCWA requested responses to the offer to consult within 30 days of the receipt of the letter. The close of the response period was on March 20, 2021. Both tribes responded within that time frame requesting consultation, as summarized below.

Shingle Springs Band of Miwok Indians

On March 18, 2021, Shingle Springs responded to YCWA requesting consultation on the Project, as well as copies of the cultural reports and records searches that had been completed for the Project thus far. The tribe stated that no tribal cultural resources were known in the Project Area, and requested that YCWA contact the tribe if anything changed or if any resources are identified. YCWA officially initiated consultation on March 23, 2021 and sent a link to the requested documents. Consultation is ongoing as of the preparation of this document, and will be closed prior to the finalization of this IS MND.

United Auburn Indian Community

On March 18, 2021, the UAIC requested consultation on the Project. On March 23, 2021, YCWA officially initiated consultation, and sent UAIC copies of the technical study for the Project, and requested a meeting at the tribe's convenience to discuss the Project and any potential concerns about TCRs.

Consultation is ongoing as of the preparation of this document, and will be closed prior to the finalization of this IS MND.

4.18.3 Tribal Cultural Resources

Information about potential impacts to TCRs was drawn from: 1) the results of a search of the Sacred Lands File of the NAHC; 2) existing ethnographic information about pre-contact lifeways and settlement patterns; 3) information on archaeological site records obtained from surveys of the Project Area and the California Historical Recourse Information System; and 4) the tribal consultation record under AB52 for the Project.

Sacred Lands File Search

A search of the NAHC Sacred Lands File was requested for the Project Area on January 12, 2021. The NAHC responded on February 3, 2021, that the sacred lands file search was negative, which means that no sacred lands have been recorded within the Project Area. The NAHC included a list of suggested tribal representatives to contact who are culturally affiliated with the region. The UAIC was on the list of contacts and the tribe was offered an opportunity to consult, as summarized above.

Ethnographic Information

The ethnographic information reviewed for the Project, including ethnographic maps (Wilson and Towne 1978), lists the nearest Native American village as *Panpakan*, located on the southeastern bank of the Yuba River, within two miles east of the Project Area. There is nothing in the ethnographic literature that suggests that the Project location is either known or suspected to have ethnographic villages or resources within its boundaries.

Archaeological Site Records

The entire project area was subjected to an archaeological survey and records search review, and no Native American sites were identified within its boundaries. Approximately 30 percent of the area within a 0.5-mile radius surrounding the Project Area has been subject to cultural surveys, and five pre-contact archaeological sites have been previously recorded in the vicinity.

Tribal Consultation Record

Tribal consultation is ongoing at the time of the preparation of this document; any information on TCRs in the Project Area will be considered, including and mitigating significant impacts, in the finalized IS MND.

4.18.4 Tribal Cultural Resources (XVIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated

Tribal consultation between YCWA and Shingle Springs and YCWA and UAIC is ongoing as of the preparation of this document. Regardless of the outcome, there remains the possibly that there are unknown TCRs present subsurface in the Project Area. Therefore, Mitigation Measure **TCR-1**, in conjunction with Mitigation Measure **CUL-2**, is required to reduce the impact to unknown TCRs to less-than-significant.

4.18.5 Mitigation Measures

TCR-1: **Unanticipated Discovery -** If any suspected TCRs are discovered during ground disturbing construction activities, all work shall cease within the immediate vicinity of the find, or an agreed upon distance based on the project area and nature of the find. The YCWA shall invite a Tribal Representative from a California Native American tribe that is traditionally and culturally affiliated with the geographic area to make recommendations about whether or not the discovery represents a TCR (PRC § 21074) and, if so, to make recommendations for culturally-appropriate treatment. The contractor shall implement any measures determined

by the YCWA to be necessary. Work at the discovery location cannot resume until the treatment has been implemented to the satisfaction of the YCWA.

Timing/Implementation: *During construction*

Monitoring/Enforcement: *YCWA, Project Construction Lead, Tribal Representative*

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

Water Service

The Yuba County Water Agency (YCWA) is a major water rights holder on the Yuba River and serves unincorporated areas of Yuba County. YCWA's permits authorize direct diversion up to a total rate of 1,593 cubic feet per second (cfs) from the Lower Yuba River from September 1 to June 30 for irrigation and other uses, and up to 1,250,000 acre-feet (af) from October 1 to June 30 to storage in New Bullards Bar Reservoir (AECOM 2011). Untreated water used for agricultural purposes in the Project area is supplied from by Browns Valley Irrigation District, which receives its water from YCWA (FERC 2019)

No potable or irrigation water infrastructure or facilities occur in the Project area.

Wastewater and Storm Water

Wastewater facilities are not provided within the Project Area. Wastewater collection and disposal are provided at public restrooms located at the Englebright Recreation Area Narrows and Joe Miller boat launches on the eastern side of the lake. YCWA will provide portable toilets at the Project site during project construction. There are no formal storm drainage facilities in the Project Area. Any existing storm drainage in the area is provided though natural drainages and an aboveground 1-inch diameter plastic pipe running adjacent to the access road leading from the eastern storage/staging area to the dirt boat ramp , where it discharges into Englebright Lake.

Solid Waste

The Yuba-Sutter Regional Waste Management Authority (YSRWMA) is the area's regional waste management agency. YSRWMA was established in 1990 through a joint exercise of powers agreement between Sutter and Yuba counties and the cities of Live Oak, Marysville, Wheatland, and Yuba City for the purpose of providing reliable, economical, integrated, and environmentally sound waste management services to the residents, businesses, and organizations of the bi-county area (AECOM 2011).

The majority of the YSRWMA solid waste is disposed of at the Recology Ostrom Road Landfill. According to the information published by CalRecycle (CalRecycle 2020b) in 2018, the Recology Ostrom Road Landfill received approximately 99.0 percent of Sutter and Yuba County's solid waste. As of June 2007, the Recology Ostrom Road Landfill had a remaining capacity of more than 39 million cubic yards and a cease operation date of December 31, 2066 (CalRecycle 2020a).

No solid waste treatment or storage facilities or service are provided at the Project Area.

4.19.2 Utilities and Service Systems (XIX) Environmental Checklist and Discussion

	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒

No Impact

Water

The Proposed Project would not require new water infrastructure or treatment facilities. The Project would have no impact in this area.

Wastewater

The Proposed Project would not require wastewater service or facilities or impact any existing facilities in the area. The Proposed Project would have no impact to existing wastewater infrastructure or treatment facilities.

Storm Drainage

The Proposed Project would not require storm drainage facilities. No new facilities would be required to serve the Project and the Project would have no impact in this area.

Electric Power

The Proposed Project would not require electrical facilities. No new facilities would be required to serve the Project and the Project would have no impact in this area.

Natural Gas

The Proposed Project would not require natural gas facilities. As such, the Project would have no impact to natural gas facilities.

Telecommunications

The Proposed Project would not require telecommunication facilities. No new telecommunication facilities would be required to serve the Project and the Project would have no impact in this area

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐

Less than significant impact

The Project would not require the use of the existing municipal water service. A portable water supply via water truck and/or water tank trailer would be utilized for project activities (e.g., for dust control and for fire control if on-site debris burning is performed under FRAQMD non-agricultural burn permit). The Project would have a minimal demand for water occurring over a short duration. Therefore, impacts would be less-than-significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

No Impact

Refer to Item a) above

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐

Less than significant impact

The Project would include the removal of approximately 175 cy of woody debris from the Project site. If the material is not burned onsite, the anticipated disposal site would be the Recology Ostrom Road Landfill in Wheatland, California. This landfill is permitted to accept wood debris, as long as the debris meets the landfill disposal standards.

Because the Recology Ostrom Road Landfill's active permit capacity is 43,467,231 cy, and it had a remaining capacity of 39,223 cy as of Jun 1, 2007 it has sufficient capacity to accommodate the relatively

minor amounts of waste that would be generated by the Project. The Project would have a less-than-significant impact in this area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Less than significant impact

If not burned, it is assumed that woody debris deposited at the Ostrom Road Landfill may be composted if feasible. Therefore, the Project would meet the requirements of AB 939 and the goals of the Yuba-Sutter Regional Waste Management Authority to reduce solid waste disposal by 50 percent since AB 939 was passed. This impact is considered less-than-significant.

4.19.3 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

4.20 Wildfire

4.20.1 Environmental Setting

The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels, and fuel moisture contents), and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point, while fuels such as trees have a lower surface area to mass ratio and require more heat to reach the ignition point.

The Project site is in an area designated by CAL-FIRE (2007) as a Very High Fire Hazard Severity Zone, and is in an area of steep slopes and highly flammable vegetation.

YCWA prepared a Fire Prevention and Response Plan as part of its application for FERC relicensing of its Yuba River Development Project [Fire Plan (YCWA 2017)), which includes the Narrows 2 Powerhouse and ancillary structures. The purpose of this Fire Plan is to provide fire prevention procedures, reporting, and safe fire practices for YCWA personnel and contractors responsible for operating and maintaining the Project. YCWA's Fire Plan includes fire prevention and protection and response measures for the Project.

YCWA does not own fire suppression equipment suitable for combating wildland fires (e.g., fire trucks, helicopters). Fire suppression equipment owned by YCWA within the Project Area primarily consists of fire extinguishers located at all YCWA buildings and in employee vehicles. Other fire suppression equipment owned by YCWA is located at the Narrows 2 Powerhouse, located approximately 0.3 mile south of the Project, and consists of permanently installed CO_2 systems within powerhouses and a water

trailer, back-pack water tanks, shovels, picks and axes (YCWA 2017). This portable equipment is deployed along with YCWA work crews that are participating in activities that potentially may require fire suppression equipment above and beyond hand-held extinguishers (e.g., welding, facilities and equipment repair in heavily vegetated areas, use of heavy equipment).

YCWA crew vehicles and contractor vehicles are each required to have axes, saws, shovels, and radios at all times, while in the field to facilitate YCWA's emergency response preparedness and avert small fires. Every work group will also have a water trailer with one of the vehicles. While equipment for suppression is limited, water from all Project reservoirs is available to agencies responding to wildland fires in the vicinity of the Project. (YCWA 2017).

4.20.2 Wildfire (XX) Environmental Checklist and Discussion

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

Less than significant impact

The Project site is within an area designated by CAL FIRE (2007) as a Fire Hazard Severity Zone. The Proposed Project does not include any actions that would impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. Although heavy equipment and dump trucks may operate on a small segment of Narrows 2 Powerhouse access road during debris removal near the intake platform, all construction activities would cease and no heavy equipment would block access roads in an emergency evacuation. The Project would have a less-than-significant impact in this area.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐

Less than significant impact

No habitable structures currently exist or would be built or occupied as a part of the Project. The Project would not involve welding, grinding, or other construction activities that would have a high risk of starting a fire. If FRAQMD issues a non-agricultural controlled burning permit for the Project, debris burning will occur on-site within one of the flat, graveled storage areas in accordance with all provisions described in

the burn permit, including specific weather conditions. Therefore, the Project would result in a minimal risk of exposure to, or generation of, wildland fires. Impacts would be less-than-significant.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒

No Impact

No new fuel breaks, emergency water sources, power lines, or other utilities would be required for development of the Project. The Project would have no impact in this area.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Less than significant impact

The Project would not involve construction of structures or drainage changes and only require minimal ground disturbance in the flat, graveled storage/staging areas on top of the hill. There are no habitable structures or businesses within 2 miles of the Project. In the unlikely event that the Project were to generate a wildfire during its permitted on-site debris burning operations, there may be a slight risk of post-fire slope instability on the steep slopes that could affect the Narrows 2 Powerhouse access road used by YCWA for periodic maintenance. However, the Project has only a minimal risk of generating a wildland fire resulting in slope instability that could affect the access road, resulting in a less-than-significant impact.

4.21 Mandatory Findings of Significance

4.21.1 Mandatory Findings of Significance (XXI) Environmental Checklist and Discussion

Does the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

Less than Significant with Mitigation Incorporated

As discussed in Sections 4.4 Biological Resources, 4.5 Cultural Resources, Section 4.7 Geology and Soils, Section 4.10 Hydrology and Water Quality, and Section 4.18 Tribal Cultural Resources, the Project may have potential impacts to these resources. However, implementation of mitigation measures **BIO-1** through **BIO-6** and **CUL-1** and **CUL-2, and TCR-1** would reduce these impacts to a less-than-significant level.

Does the Project:		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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)?	☐	☐	☐	☒

No Impact

There are no other approved or pending projects in the region. Therefore, the Project would not have the potential to result in cumulatively considerable impacts to the physical environment. The Project would have no impact.

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

Less than Significant with Mitigation Incorporated

As discussed in Sections 4.1Aesthetics, the Project may have potential impacts to human beings. However, implementation of mitigation measures **AES-1** and **AES-2** would reduce these impacts to a less-than-significant level.

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SECTION 7.0 LIST OF APPENDICES

Appendix A – Air Quality CalEEMod Model Outputs

Appendix B – Biological Resources Assessment and Aquatic Resources Delineation

Appendix C – Greenhouse Gases CalEEMod Model Outputs

Appendix D – Preliminary soil Screening Analysis

Appendix E – Noise Construction Model Outputs

APPENDIX A

Air Quality CalEEMod Model Outputs

Narrows 2 Burning Option

Yuba County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.67	Acre	1.67	72,745.20	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	72
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Total Days = 30 per Project Applicant. Demolition and Material Hauling phases conducted simulataneously

Off-road Equipment - Off-Highway Trucks = Dump Trucks for debris removal

Off-road Equipment -

Trips and VMT - Worker trips accounts for 10 workers/day with 2 trips per worker/day. 24 Hauling trips accounts for the # of trips needed to move 175 cubic yards of debris to storage/staging area 250 feet.

Vehicle Trips - Construction only

Fleet Mix - Construction only

Narrows 2 Burning Option - Yuba County, Summer

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	250	0
tblAreaCoating	Area_Parking	4365	0
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	20.00	30.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.62	1.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	5.2950e-003	0.00
tblFleetMix	MCY	5.6270e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	8.5200e-004	0.00
tblFleetMix	MHD	8.0940e-003	0.00
tblFleetMix	OBUS	1.6960e-003	0.00
tblFleetMix	SBUS	1.1250e-003	0.00
tblFleetMix	UBUS	1.9240e-003	0.00
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

tblTripsAndVMT	HaulingTripLength	20.00	0.05
tblTripsAndVMT	HaulingTripNumber	0.00	24.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9399	17.4215	12.5558	0.0379	0.2555	0.6957	0.9512	0.0678	0.6400	0.7078	0.0000	3,673.3779	3,673.3779	1.1151	0.0000	3,701.2561
Maximum	**1.9399**	**17.4215**	**12.5558**	**0.0379**	**0.2555**	**0.6957**	**0.9512**	**0.0678**	**0.6400**	**0.7078**	**0.0000**	**3,673.3779**	**3,673.3779**	**1.1151**	**0.0000**	**3,701.2561**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9399	17.4215	12.5558	0.0379	0.2555	0.6957	0.9512	0.0678	0.6400	0.7078	0.0000	3,673.3779	3,673.3779	1.1151	0.0000	3,701.2561
Maximum	**1.9399**	**17.4215**	**12.5558**	**0.0379**	**0.2555**	**0.6957**	**0.9512**	**0.0678**	**0.6400**	**0.7078**	**0.0000**	**3,673.3779**	**3,673.3779**	**1.1151**	**0.0000**	**3,701.2561**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0258	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0258**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.0000**	**3.9000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0258	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0258**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.0000**	**3.9000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Material Hauling	Grading	9/1/2021	10/12/2021	5	30	
2	Debris Removal	Demolition	9/1/2021	10/12/2021	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.67

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating - sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Material Hauling	Off-Highway Trucks	1	8.00	402	0.38
Debris Removal	Cranes	1	8.00	231	0.29
Debris Removal	Off-Highway Trucks	1	8.00	402	0.38
Debris Removal	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Material Hauling	1	0.00	0.00	24.00	16.80	6.60	0.05	LD_Mix	HDT_Mix	HHDT
Debris Removal	3	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Material Hauling - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6059	5.2634	3.6044	0.0132		0.1931	0.1931		0.1776	0.1776		1,278.5230	1,278.5230	0.4135		1,288.8605
Total	**0.6059**	**5.2634**	**3.6044**	**0.0132**	**0.0000**	**0.1931**	**0.1931**	**0.0000**	**0.1776**	**0.1776**		**1,278.5230**	**1,278.5230**	**0.4135**		**1,288.8605**

3.2 Material Hauling - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4500e-003	0.0746	0.0128	8.0000e-005	5.0000e-005	8.0000e-005	1.3000e-004	2.0000e-005	7.0000e-005	9.0000e-005		8.1591	8.1591	7.9000e-004		8.1788
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.4500e-003**	**0.0746**	**0.0128**	**8.0000e-005**	**5.0000e-005**	**8.0000e-005**	**1.3000e-004**	**2.0000e-005**	**7.0000e-005**	**9.0000e-005**		**8.1591**	**8.1591**	**7.9000e-004**		**8.1788**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6059	5.2634	3.6044	0.0132		0.1931	0.1931		0.1776	0.1776	0.0000	1,278.5230	1,278.5230	0.4135		1,288.8605
Total	**0.6059**	**5.2634**	**3.6044**	**0.0132**	**0.0000**	**0.1931**	**0.1931**	**0.0000**	**0.1776**	**0.1776**	**0.0000**	**1,278.5230**	**1,278.5230**	**0.4135**		**1,288.8605**

3.2 Material Hauling - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.4500e-003	0.0746	0.0128	8.0000e-005	5.0000e-005	8.0000e-005	1.3000e-004	2.0000e-005	7.0000e-005	9.0000e-005		8.1591	8.1591	7.9000e-004		8.1788
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.4500e-003**	**0.0746**	**0.0128**	**8.0000e-005**	**5.0000e-005**	**8.0000e-005**	**1.3000e-004**	**2.0000e-005**	**7.0000e-005**	**9.0000e-005**		**8.1591**	**8.1591**	**7.9000e-004**		**8.1788**

3.3 Debris Removal - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2056	11.9954	7.8433	0.0221		0.5009	0.5009		0.4609	0.4609		2,139.6739	2,139.6739	0.6920		2,156.9742
Total	**1.2056**	**11.9954**	**7.8433**	**0.0221**		**0.5009**	**0.5009**		**0.4609**	**0.4609**		**2,139.6739**	**2,139.6739**	**0.6920**		**2,156.9742**

3.3 Debris Removal - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1270	0.0881	1.0954	2.4800e-003	0.2555	1.6100e-003	0.2571	0.0678	1.4800e-003	0.0692		247.0220	247.0220	8.8200e-003		247.2426
Total	**0.1270**	**0.0881**	**1.0954**	**2.4800e-003**	**0.2555**	**1.6100e-003**	**0.2571**	**0.0678**	**1.4800e-003**	**0.0692**		**247.0220**	**247.0220**	**8.8200e-003**		**247.2426**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2056	11.9954	7.8433	0.0221		0.5009	0.5009		0.4609	0.4609	0.0000	2,139.6739	2,139.6739	0.6920		2,156.9742
Total	**1.2056**	**11.9954**	**7.8433**	**0.0221**		**0.5009**	**0.5009**		**0.4609**	**0.4609**	**0.0000**	**2,139.6739**	**2,139.6739**	**0.6920**		**2,156.9742**

3.3 Debris Removal - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1270	0.0881	1.0954	2.4800e-003	0.2555	1.6100e-003	0.2571	0.0678	1.4800e-003	0.0692		247.0220	247.0220	8.8200e-003		247.2426
Total	**0.1270**	**0.0881**	**1.0954**	**2.4800e-003**	**0.2555**	**1.6100e-003**	**0.2571**	**0.0678**	**1.4800e-003**	**0.0692**		**247.0220**	**247.0220**	**8.8200e-003**		**247.2426**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0258	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Unmitigated	0.0258	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0258					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Total	**0.0258**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**		**3.9000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0258					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Total	**0.0258**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**		**3.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Narrows 2 Burning Option

Yuba County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.67	Acre	1.67	72,745.20	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	72
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Total Days = 30 per Project Applicant. Demolition and Material Hauling phases conducted simulataneously

Off-road Equipment - Off-Highway Trucks = Dump Trucks for debris removal

Off-road Equipment -

Trips and VMT - Worker trips accounts for 10 workers/day with 2 trips per worker/day. 24 Hauling trips accounts for the # of trips needed to move 175 cubic yards of debris to storage/staging area 250 feet.

Vehicle Trips - Construction only

Fleet Mix - Construction only

Narrows 2 Burning Option - Yuba County, Winter

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	250	0
tblAreaCoating	Area_Parking	4365	0
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	20.00	30.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.62	1.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	5.2950e-003	0.00
tblFleetMix	MCY	5.6270e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	8.5200e-004	0.00
tblFleetMix	MHD	8.0940e-003	0.00
tblFleetMix	OBUS	1.6960e-003	0.00
tblFleetMix	SBUS	1.1250e-003	0.00
tblFleetMix	UBUS	1.9240e-003	0.00
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

tblTripsAndVMT	HaulingTripLength	20.00	0.05
tblTripsAndVMT	HaulingTripNumber	0.00	24.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9372	17.4418	12.3868	0.0376	0.2555	0.6957	0.9512	0.0678	0.6401	0.7078	0.0000	3,641.9375	3,641.9375	1.1141	0.0000	3,669.7895
Maximum	**1.9372**	**17.4418**	**12.3868**	**0.0376**	**0.2555**	**0.6957**	**0.9512**	**0.0678**	**0.6401**	**0.7078**	**0.0000**	**3,641.9375**	**3,641.9375**	**1.1141**	**0.0000**	**3,669.7895**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9372	17.4418	12.3868	0.0376	0.2555	0.6957	0.9512	0.0678	0.6401	0.7078	0.0000	3,641.9375	3,641.9375	1.1141	0.0000	3,669.7895
Maximum	**1.9372**	**17.4418**	**12.3868**	**0.0376**	**0.2555**	**0.6957**	**0.9512**	**0.0678**	**0.6401**	**0.7078**	**0.0000**	**3,641.9375**	**3,641.9375**	**1.1141**	**0.0000**	**3,669.7895**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0258	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0258**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.0000**	**3.9000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0258	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0258**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.0000**	**3.9000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Material Hauling	Grading	9/1/2021	10/12/2021	5	30	
2	Debris Removal	Demolition	9/1/2021	10/12/2021	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.67

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating - sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Material Hauling	Off-Highway Trucks	1	8.00	402	0.38
Debris Removal	Cranes	1	8.00	231	0.29
Debris Removal	Off-Highway Trucks	1	8.00	402	0.38
Debris Removal	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Material Hauling	1	0.00	0.00	24.00	16.80	6.60	0.05	LD_Mix	HDT_Mix	HHDT
Debris Removal	3	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Material Hauling - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6059	5.2634	3.6044	0.0132		0.1931	0.1931		0.1776	0.1776		1,278.5230	1,278.5230	0.4135		1,288.8605
Total	**0.6059**	**5.2634**	**3.6044**	**0.0132**	**0.0000**	**0.1931**	**0.1931**	**0.0000**	**0.1776**	**0.1776**		**1,278.5230**	**1,278.5230**	**0.4135**		**1,288.8605**

3.2 Material Hauling - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6500e-003	0.0720	0.0179	7.0000e-005	5.0000e-005	1.0000e-004	1.5000e-004	2.0000e-005	1.0000e-004	1.1000e-004		7.1456	7.1456	9.1000e-004		7.1683
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.6500e-003**	**0.0720**	**0.0179**	**7.0000e-005**	**5.0000e-005**	**1.0000e-004**	**1.5000e-004**	**2.0000e-005**	**1.0000e-004**	**1.1000e-004**		**7.1456**	**7.1456**	**9.1000e-004**		**7.1683**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6059	5.2634	3.6044	0.0132		0.1931	0.1931		0.1776	0.1776	0.0000	1,278.5230	1,278.5230	0.4135		1,288.8605
Total	**0.6059**	**5.2634**	**3.6044**	**0.0132**	**0.0000**	**0.1931**	**0.1931**	**0.0000**	**0.1776**	**0.1776**	**0.0000**	**1,278.5230**	**1,278.5230**	**0.4135**		**1,288.8605**

3.2 Material Hauling - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.6500e-003	0.0720	0.0179	7.0000e-005	5.0000e-005	1.0000e-004	1.5000e-004	2.0000e-005	1.0000e-004	1.1000e-004		7.1456	7.1456	9.1000e-004		7.1683
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.6500e-003**	**0.0720**	**0.0179**	**7.0000e-005**	**5.0000e-005**	**1.0000e-004**	**1.5000e-004**	**2.0000e-005**	**1.0000e-004**	**1.1000e-004**		**7.1456**	**7.1456**	**9.1000e-004**		**7.1683**

3.3 Debris Removal - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2056	11.9954	7.8433	0.0221		0.5009	0.5009		0.4609	0.4609		2,139.6739	2,139.6739	0.6920		2,156.9742
Total	**1.2056**	**11.9954**	**7.8433**	**0.0221**		**0.5009**	**0.5009**		**0.4609**	**0.4609**		**2,139.6739**	**2,139.6739**	**0.6920**		**2,156.9742**

3.3 Debris Removal - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1240	0.1111	0.9213	2.1800e-003	0.2555	1.6100e-003	0.2571	0.0678	1.4800e-003	0.0692		216.5951	216.5951	7.6500e-003		216.7864
Total	**0.1240**	**0.1111**	**0.9213**	**2.1800e-003**	**0.2555**	**1.6100e-003**	**0.2571**	**0.0678**	**1.4800e-003**	**0.0692**		**216.5951**	**216.5951**	**7.6500e-003**		**216.7864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2056	11.9954	7.8433	0.0221		0.5009	0.5009		0.4609	0.4609	0.0000	2,139.6739	2,139.6739	0.6920		2,156.9742
Total	**1.2056**	**11.9954**	**7.8433**	**0.0221**		**0.5009**	**0.5009**		**0.4609**	**0.4609**	**0.0000**	**2,139.6739**	**2,139.6739**	**0.6920**		**2,156.9742**

3.3 Debris Removal - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1240	0.1111	0.9213	2.1800e-003	0.2555	1.6100e-003	0.2571	0.0678	1.4800e-003	0.0692		216.5951	216.5951	7.6500e-003		216.7864
Total	**0.1240**	**0.1111**	**0.9213**	**2.1800e-003**	**0.2555**	**1.6100e-003**	**0.2571**	**0.0678**	**1.4800e-003**	**0.0692**		**216.5951**	**216.5951**	**7.6500e-003**		**216.7864**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0258	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Unmitigated	0.0258	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0258					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Total	**0.0258**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**		**3.9000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0258					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Total	**0.0258**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**		**3.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Narrows 2 Debris Removal

Yuba County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.67	Acre	1.67	72,745.20	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	72
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Total Days = 30 per Project Applicant. Demolition and Material Hauling phases conducted simulataneously

Off-road Equipment - Equipment list updated to match information per Project Applicant

Off-road Equipment - Off-Highway Trucks = Dump Trucks for debris removal

Grading - 175 cubic yards of soil per Project Applicant to be removed from site

Trips and VMT - # Trips accounts for 10 workers onsite per day for Demo phase, total of 24 trips estimated for hauling of debri (estimated 12 trips to and from landfill), 37 miles from Project site to Ostrom Landfill

Narrows 2 Debris Removal - Yuba County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	PhaseEndDate	9/28/2021	10/12/2021
tblGrading	AcresOfGrading	0.00	11.25
tblGrading	MaterialExported	0.00	175.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	37.00
tblTripsAndVMT	HaulingTripNumber	22.00	24.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.5865	23.0057	16.5013	0.0527	0.7438	0.8916	1.6354	0.1348	0.8203	0.9551	0.0000	5,122.9926	5,122.9926	1.5309	0.0000	5,161.2639
Maximum	**2.5865**	**23.0057**	**16.5013**	**0.0527**	**0.7438**	**0.8916**	**1.6354**	**0.1348**	**0.8203**	**0.9551**	**0.0000**	**5,122.9926**	**5,122.9926**	**1.5309**	**0.0000**	**5,161.2639**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.5865	23.0057	16.5013	0.0527	0.7438	0.8916	1.6354	0.1348	0.8203	0.9551	0.0000	5,122.9926	5,122.9926	1.5309	0.0000	5,161.2639
Maximum	**2.5865**	**23.0057**	**16.5013**	**0.0527**	**0.7438**	**0.8916**	**1.6354**	**0.1348**	**0.8203**	**0.9551**	**0.0000**	**5,122.9926**	**5,122.9926**	**1.5309**	**0.0000**	**5,161.2639**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0396	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0396**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.0000**	**3.9000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0396	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0396**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.0000**	**3.9000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	10/12/2021	5	30	
2	Material Hauling	Grading	9/1/2021	10/12/2021	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.67

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating - sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	8.00	231	0.29
Demolition	Dumpers/Tenders	0	8.00	16	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Off-Highway Trucks	1	8.00	402	0.38
Material Hauling	Graders	0	6.00	187	0.41
Material Hauling	Rubber Tired Dozers	0	6.00	247	0.40
Material Hauling	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Material Hauling	Off-Highway Trucks	2	8.00	402	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Material Hauling	2	5.00	0.00	24.00	16.80	6.60	37.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2061	12.0085	7.8474	0.0221		0.5017	0.5017		0.4616	0.4616		2,138.1618	2,138.1618	0.6915		2,155.4500
Total	**1.2061**	**12.0085**	**7.8474**	**0.0221**		**0.5017**	**0.5017**		**0.4616**	**0.4616**		**2,138.1618**	**2,138.1618**	**0.6915**		**2,155.4500**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1270	0.0881	1.0954	2.4800e-003	0.2555	1.6100e-003	0.2571	0.0678	1.4800e-003	0.0692		247.0220	247.0220	8.8200e-003		247.2426
Total	**0.1270**	**0.0881**	**1.0954**	**2.4800e-003**	**0.2555**	**1.6100e-003**	**0.2571**	**0.0678**	**1.4800e-003**	**0.0692**		**247.0220**	**247.0220**	**8.8200e-003**		**247.2426**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2061	12.0085	7.8474	0.0221		0.5017	0.5017		0.4616	0.4616	0.0000	2,138.1618	2,138.1618	0.6915		2,155.4500
Total	**1.2061**	**12.0085**	**7.8474**	**0.0221**		**0.5017**	**0.5017**		**0.4616**	**0.4616**	**0.0000**	**2,138.1618**	**2,138.1618**	**0.6915**		**2,155.4500**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1270	0.0881	1.0954	2.4800e-003	0.2555	1.6100e-003	0.2571	0.0678	1.4800e-003	0.0692		247.0220	247.0220	8.8200e-003		247.2426
Total	**0.1270**	**0.0881**	**1.0954**	**2.4800e-003**	**0.2555**	**1.6100e-003**	**0.2571**	**0.0678**	**1.4800e-003**	**0.0692**		**247.0220**	**247.0220**	**8.8200e-003**		**247.2426**

3.3 Material Hauling - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3989	0.0000	0.3989	0.0431	0.0000	0.0431			0.0000			0.0000
Off-Road	1.2118	10.5267	7.2087	0.0264		0.3861	0.3861		0.3552	0.3552		2,557.0460	2,557.0460	0.8270		2,577.7210
Total	**1.2118**	**10.5267**	**7.2087**	**0.0264**	**0.3989**	**0.3861**	**0.7850**	**0.0431**	**0.3552**	**0.3984**		**2,557.0460**	**2,557.0460**	**0.8270**		**2,577.7210**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.3603	0.0759	1.1400e-003	0.0256	1.7400e-003	0.0273	6.9900e-003	1.6600e-003	8.6500e-003		119.0073	119.0073	1.3000e-003		119.0397
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0317	0.0220	0.2738	6.2000e-004	0.0639	4.0000e-004	0.0643	0.0169	3.7000e-004	0.0173		61.7555	61.7555	2.2100e-003		61.8106
Total	**0.0417**	**0.3824**	**0.3498**	**1.7600e-003**	**0.0895**	**2.1400e-003**	**0.0916**	**0.0239**	**2.0300e-003**	**0.0260**		**180.7628**	**180.7628**	**3.5100e-003**		**180.8503**

3.3 Material Hauling - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3989	0.0000	0.3989	0.0431	0.0000	0.0431			0.0000			0.0000
Off-Road	1.2118	10.5267	7.2087	0.0264		0.3861	0.3861		0.3552	0.3552	0.0000	2,557.0460	2,557.0460	0.8270		2,577.7210
Total	**1.2118**	**10.5267**	**7.2087**	**0.0264**	**0.3989**	**0.3861**	**0.7850**	**0.0431**	**0.3552**	**0.3984**	**0.0000**	**2,557.0460**	**2,557.0460**	**0.8270**		**2,577.7210**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.9500e-003	0.3603	0.0759	1.1400e-003	0.0256	1.7400e-003	0.0273	6.9900e-003	1.6600e-003	8.6500e-003		119.0073	119.0073	1.3000e-003		119.0397
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0317	0.0220	0.2738	6.2000e-004	0.0639	4.0000e-004	0.0643	0.0169	3.7000e-004	0.0173		61.7555	61.7555	2.2100e-003		61.8106
Total	**0.0417**	**0.3824**	**0.3498**	**1.7600e-003**	**0.0895**	**2.1400e-003**	**0.0916**	**0.0239**	**2.0300e-003**	**0.0260**		**180.7628**	**180.7628**	**3.5100e-003**		**180.8503**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.623397	0.028959	0.171958	0.109598	0.026189	0.005295	0.008094	0.015285	0.001696	0.001924	0.005627	0.001125	0.000852

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0396	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Unmitigated	0.0396	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0139					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0258					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Total	**0.0397**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**		**3.9000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0139					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0258					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Total	**0.0397**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**		**3.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Narrows 2 Debris Removal

Yuba County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.67	Acre	1.67	72,745.20	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	72
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Total Days = 30 per Project Applicant. Demolition and Material Hauling phases conducted simulataneously

Off-road Equipment - Equipment list updated to match information per Project Applicant

Off-road Equipment - Off-Highway Trucks = Dump Trucks for debris removal

Grading - 175 cubic yards of soil per Project Applicant to be removed from site

Trips and VMT - # Trips accounts for 10 workers onsite per day for Demo phase, total of 24 trips estimated for hauling of debri (estimated 12 trips to and from landfill), 37 miles from Project site to Ostrom Landfill

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	PhaseEndDate	9/28/2021	10/12/2021
tblGrading	AcresOfGrading	0.00	11.25
tblGrading	MaterialExported	0.00	175.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	37.00
tblTripsAndVMT	HaulingTripNumber	22.00	24.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.5830	23.0562	16.2867	0.0523	0.7438	0.8916	1.6354	0.1348	0.8204	0.9552	0.0000	5,083.9454	5,083.9454	1.5295	0.0000	5,122.1829
Maximum	**2.5830**	**23.0562**	**16.2867**	**0.0523**	**0.7438**	**0.8916**	**1.6354**	**0.1348**	**0.8204**	**0.9552**	**0.0000**	**5,083.9454**	**5,083.9454**	**1.5295**	**0.0000**	**5,122.1829**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.5830	23.0562	16.2867	0.0523	0.7438	0.8916	1.6354	0.1348	0.8204	0.9552	0.0000	5,083.9454	5,083.9454	1.5295	0.0000	5,122.1829
Maximum	**2.5830**	**23.0562**	**16.2867**	**0.0523**	**0.7438**	**0.8916**	**1.6354**	**0.1348**	**0.8204**	**0.9552**	**0.0000**	**5,083.9454**	**5,083.9454**	**1.5295**	**0.0000**	**5,122.1829**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0396	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0396**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.0000**	**3.9000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0396	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0396**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**0.0000**	**3.9000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	10/12/2021	5	30	
2	Material Hauling	Grading	9/1/2021	10/12/2021	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.67

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating - sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	8.00	231	0.29
Demolition	Dumpers/Tenders	0	8.00	16	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Off-Highway Trucks	1	8.00	402	0.38
Material Hauling	Graders	0	6.00	187	0.41
Material Hauling	Rubber Tired Dozers	0	6.00	247	0.40
Material Hauling	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Material Hauling	Off-Highway Trucks	2	8.00	402	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Material Hauling	2	5.00	0.00	24.00	16.80	6.60	37.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2061	12.0085	7.8474	0.0221		0.5017	0.5017		0.4616	0.4616		2,138.1618	2,138.1618	0.6915		2,155.4500
Total	**1.2061**	**12.0085**	**7.8474**	**0.0221**		**0.5017**	**0.5017**		**0.4616**	**0.4616**		**2,138.1618**	**2,138.1618**	**0.6915**		**2,155.4500**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1240	0.1111	0.9213	2.1800e-003	0.2555	1.6100e-003	0.2571	0.0678	1.4800e-003	0.0692		216.5951	216.5951	7.6500e-003		216.7864
Total	**0.1240**	**0.1111**	**0.9213**	**2.1800e-003**	**0.2555**	**1.6100e-003**	**0.2571**	**0.0678**	**1.4800e-003**	**0.0692**		**216.5951**	**216.5951**	**7.6500e-003**		**216.7864**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2061	12.0085	7.8474	0.0221		0.5017	0.5017		0.4616	0.4616	0.0000	2,138.1618	2,138.1618	0.6915		2,155.4500
Total	**1.2061**	**12.0085**	**7.8474**	**0.0221**		**0.5017**	**0.5017**		**0.4616**	**0.4616**	**0.0000**	**2,138.1618**	**2,138.1618**	**0.6915**		**2,155.4500**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1240	0.1111	0.9213	2.1800e-003	0.2555	1.6100e-003	0.2571	0.0678	1.4800e-003	0.0692		216.5951	216.5951	7.6500e-003		216.7864
Total	**0.1240**	**0.1111**	**0.9213**	**2.1800e-003**	**0.2555**	**1.6100e-003**	**0.2571**	**0.0678**	**1.4800e-003**	**0.0692**		**216.5951**	**216.5951**	**7.6500e-003**		**216.7864**

3.3 Material Hauling - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3989	0.0000	0.3989	0.0431	0.0000	0.0431			0.0000			0.0000
Off-Road	1.2118	10.5267	7.2087	0.0264		0.3861	0.3861		0.3552	0.3552		2,557.0460	2,557.0460	0.8270		2,577.7210
Total	**1.2118**	**10.5267**	**7.2087**	**0.0264**	**0.3989**	**0.3861**	**0.7850**	**0.0431**	**0.3552**	**0.3984**		**2,557.0460**	**2,557.0460**	**0.8270**		**2,577.7210**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0101	0.3821	0.0790	1.1300e-003	0.0256	1.7600e-003	0.0274	6.9900e-003	1.6900e-003	8.6800e-003		117.9938	117.9938	1.4100e-003		118.0290
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0310	0.0278	0.2303	5.4000e-004	0.0639	4.0000e-004	0.0643	0.0169	3.7000e-004	0.0173		54.1488	54.1488	1.9100e-003		54.1966
Total	**0.0411**	**0.4098**	**0.3093**	**1.6700e-003**	**0.0895**	**2.1600e-003**	**0.0916**	**0.0239**	**2.0600e-003**	**0.0260**		**172.1426**	**172.1426**	**3.3200e-003**		**172.2256**

3.3 Material Hauling - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3989	0.0000	0.3989	0.0431	0.0000	0.0431			0.0000			0.0000
Off-Road	1.2118	10.5267	7.2087	0.0264		0.3861	0.3861		0.3552	0.3552	0.0000	2,557.0460	2,557.0460	0.8270		2,577.7210
Total	**1.2118**	**10.5267**	**7.2087**	**0.0264**	**0.3989**	**0.3861**	**0.7850**	**0.0431**	**0.3552**	**0.3984**	**0.0000**	**2,557.0460**	**2,557.0460**	**0.8270**		**2,577.7210**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0101	0.3821	0.0790	1.1300e-003	0.0256	1.7600e-003	0.0274	6.9900e-003	1.6900e-003	8.6800e-003		117.9938	117.9938	1.4100e-003		118.0290
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0310	0.0278	0.2303	5.4000e-004	0.0639	4.0000e-004	0.0643	0.0169	3.7000e-004	0.0173		54.1488	54.1488	1.9100e-003		54.1966
Total	**0.0411**	**0.4098**	**0.3093**	**1.6700e-003**	**0.0895**	**2.1600e-003**	**0.0916**	**0.0239**	**2.0600e-003**	**0.0260**		**172.1426**	**172.1426**	**3.3200e-003**		**172.2256**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.623397	0.028959	0.171958	0.109598	0.026189	0.005295	0.008094	0.015285	0.001696	0.001924	0.005627	0.001125	0.000852

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0396	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Unmitigated	0.0396	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0139					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0258					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Total	**0.0397**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**		**3.9000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0139					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0258					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.7000e-004	3.7000e-004	0.0000		3.9000e-004
Total	**0.0397**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.7000e-004**	**3.7000e-004**	**0.0000**		**3.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project Marine Vessels Emissions

Narrows 2 Debris Removal Project

Marine Vessel	Pollutant	Emission Rate (Tons/Day)	Total Pounds Daily	Total Tons Annually[1]
CHC - AE Other (Support)	**NOx**	0.0004	**0.80**	**0.01**
	ROG	0.0001	**0.20**	**0.00**
	PM10	0.0000	**0.04**	**0.00**
	PM2.5	0.0000	**0.06**	**0.00**
	CO	0.0003	**0.64**	**0.01**
	SO2	0.0000	**0.00**	**0.00**

[1] Anuual Pollutants are based on 30 work days per year.
All emission factors sourced from OFFROAD 2017.

APPENDIX B

Biological Resources Assessment and Aquatic Resources Delineation

Biological Resources Assessment

Narrows 2 Intake Debris Removal Project

Yuba County, California

Prepared For:

Yuba County Water Agency

March 1, 2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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LIST OF ACRONYMS AND ABBREVIATIONS

BA	Biological Assessment
BCC	Birds of Conservation Concern
BO	Biological Opinion
BRA	Biological Resources Assessment
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
Eagle Protection Act	The Bald and Golden Eagle Protection Act
EFH	Essential fish habitat
ESA	Endangered Species Act
F	Fahrenheit
IPaC	Information, Planning and Consultation
ITP	Incidental take permit
LSA	Lake or Streambed Alteration
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
Project	Narrows 2 Intake Debris Removal Project
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
Study Area	Narrows 2 Intake Debris Removal Project
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service
WBWG	Western Bat Working Group
YCWA	Yuba County Water Agency

1.0 INTRODUCTION

On behalf of Yuba County Water Agency (YCWA), ECORP Consulting, Inc. conducted a Biological Resources Assessment (BRA) for the approximately 1.67-acre Narrows 2 Intake Debris Removal Project (Study Area) located in Yuba County, California. The purpose of the assessment was to collect information on the biological resources present and evaluate the potential for special-status species and their habitats to occur in the Study Area, assess potential biological impacts related to Project activities, and identify potential mitigation measures to inform the Project's California Environmental Quality Act (CEQA) documentation for biological resources.

1.1 Project Location

The Study Area consists of approximately 1.67 acres of property located in the southwestern quarter of Section 14 of Township 16 North, Range 6 East, Mount Diablo Base and Meridian as depicted on the 1995 "Smartsville, California" 7.5-minute topographic quadrangle (U.S. Geological Survey [USGS] 1995) (Figure 1. *Study Area Location and Vicinity*). It is also known as Assessor's Parcel Number 005-300-010-000 and a portion of 005-300-003-000. The Study Area is located 2.75 miles northeast of Smartsville near the end of Scott Forbes Road, northeast of the junction of Highway 20 and Sicard Flat Road. The approximate center of the Study Area is located at NAD83 coordinates 39.241574° latitude and -121.271493° longitude within the Upper Yuba Watershed (Hydrologic Unit Code #18020125; Natural Resources Conservation Service [NRCS] et al. 2016).

1.2 Purpose of this Biological Resources Assessment

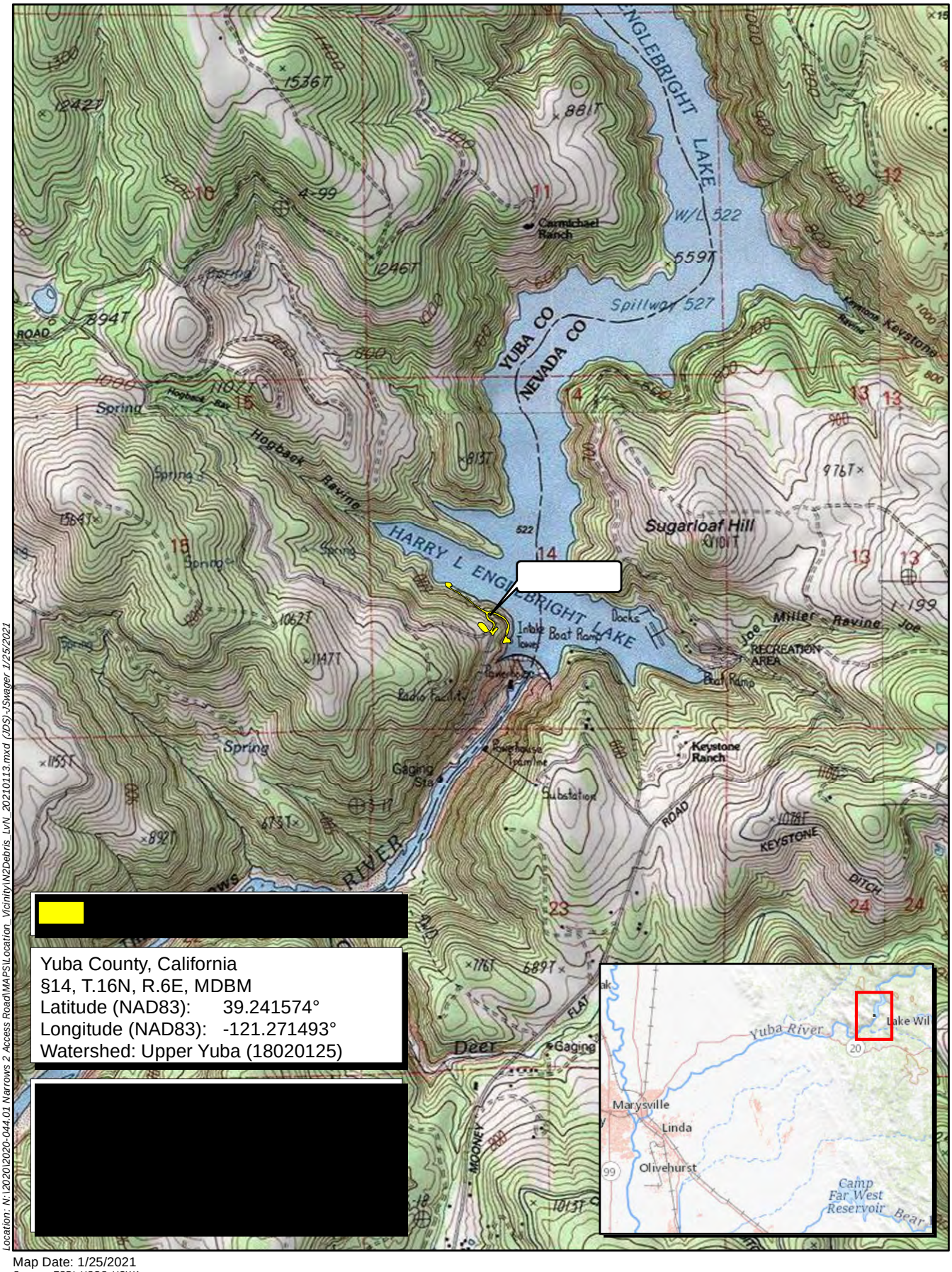
The purpose of this BRA is to assess the potential for occurrence of special-status plant and animal species or their habitats and sensitive habitats such as wetlands, riparian communities, and sensitive natural communities within the Study Area.

This assessment includes information generated from assessment-level and determinate surveys of the Study Area, including an aquatic resources delineation. This BRA does not include determinate field surveys for other wildlife or plant species.

This assessment includes a preliminary analysis of impacts on biological resources anticipated to result from the Study Area, as presently defined. The mitigation recommendations presented in this assessment are based on the preliminary analysis, a review of existing literature, and the results of site reconnaissance surveys.

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under Section 15380 of the CEQA Guidelines;



Location: N:\2020\2020-044.01 Narrows 2 Access Road\MAPS\Location_Vicinity\N2Debris_LvN_20210113.mxd (JDS) JSwager 1/25/2021

Map Date: 1/25/2021
Sources: ESRI, USGS, YCWA

Figure 1. Study Area Location and Vicinity

2020-044.01 YCWA - Narrows 2 Intake Debris

ECORP Consulting, Inc.
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- are identified as a species of special concern (SSC) by the California Department of Fish and Wildlife (CDFW);
- are birds identified as birds of conservation concern (BCC) by the U.S. Fish and Wildlife Service (USFWS);
- are plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (California Rare Plant Rank [CRPR] 1 and 2), "plants about which more information is needed" (i.e., species with a CRPR of 3), or "plants of limited distribution – a watch list" (i.e., species with a CRPR of 4);
- are plants listed as rare under the California Native Plant Protection Act (NPPA; California Fish and Game Code, § 1900 et seq.); or
- are fully protected in California in accordance with the California Fish and Game Code, §§ 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes).

Only species that fall into one of the above-listed groups were considered for this assessment. While other species (i.e., special-status lichens, California Natural Diversity Database [CNDDB] tracked species with no special status) are sometimes found in database searches or within the literature, these species were not included within this analysis.

1.3 Project Description

The Project Area consists of an approximately 1.67 acres of land surrounding the Narrows 2 Powerhouse intake structure immediately upstream of Englebright Dam that includes: the debris removal area, the powerhouse intake platform, the steep rocky lake slope between the access road and lake water line, and a portion of a 15-foot-wide gravel access road. The Project Area in this Project Description is the same area as the Survey Area as described in this BRA.

The Project will utilize two existing gravel-lined debris storage/staging areas, one approximately 0.37 acre and one approximately 0.12 acre, on either side of the gravel access road located approximately 250 feet west of the debris removal location. The Project Area also includes the potential use of a dirt boat ramp approximately 1,150 feet northeast of the debris removal location for potential access for divers from land. Most of the Project Area is on federal land owned by the USACE, except for one debris storage area that is on land owned by the University of California at Davis', Sierra Foothill Research and Extension Center. The Englebright Dam is not included in the Project Area.

Project activities include removing an estimated 175 cubic yards (cy) of woody debris from below the lake waterline using a land-based excavator equipped with a clamshell bucket, or similar equipment staged on the 15-foot-wide gravel access road near the powerplant intake structure. Debris will be excavated out of the lake and placed into dump trucks for subsequent stockpile in the staging areas. Stockpiled debris would be dried and burned onsite under a non-agricultural burn permit issued by the Feather River Air Quality Management District.

Alternatively, if potential seasonal restrictions or other logistical issues arise, debris may be loaded into dump trucks for disposal offsite at the Recology's Ostrom Road Landfill in Wheatland, California. Debris

would be trucked approximately 900 feet down the existing facility access road and then approximately 37 miles one-way to the Ostrom Road Landfill. Based upon the assumption that each dump truck can carry 15 cy of material, disposal of 175 cy of debris offsite would take approximately 12 truck trips.

In summary, the following heavy equipment will be used for the Project:

- Tracked excavator or crane to remove debris from lake;
- Dump trucks;
- Excavator or front loader to load/unload debris from dump trucks at the temporary storage areas;
- Water truck; and
- Small motorboat for personnel transport to the debris removal site in lake.

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The ESA protects plants and animals that are listed as endangered or threatened by the USFWS and the National Marine Fisheries Service (NMFS). Section 9 of the ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of State law (16 U.S. Code [USC] 1538). Under Section 7 of the ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion (BO), the USFWS or NMFS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of incidental take permits (ITPs) where no other federal actions are necessary provided a habitat conservation plan is developed.

Section 7

Section 7 of the ESA mandates that all federal agencies consult with USFWS and/or NMFS to ensure that federal agencies' actions do not jeopardize the continued existence of a listed species or adversely modify Critical Habitat for listed species. If direct and/or indirect effects will occur to Critical Habitat that appreciably diminish the value of Critical Habitat for both the survival and recovery of a species, the adverse modifications will require formal consultation with USFWS or NMFS. If adverse effects are likely, the applicant must conduct a biological assessment (BA) for the purpose of analyzing the potential effects of the project on listed species and critical habitat to establish and justify an "effect determination." The federal agency reviews the BA; if it concludes that the project may adversely affect a listed species or its

habitat, it prepares a BO, which may recommend "reasonable and prudent alternatives" to the project to avoid jeopardizing or adversely modifying habitat.

Critical Habitat and Essential Habitat

Critical Habitat is defined in Section 3 of the ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and

2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential lifecycle needs of the species. These include but are not limited to the following:

1. Space for individual and population growth and for normal behavior;

2. Food, water, air, light, minerals, or other nutritional or physiological requirements;

3. Cover or shelter;

4. Sites for breeding, reproduction, or rearing (or development) of offspring; and

5. Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species;

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized under the MBTA, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13 General Permit Procedures and 50 CFR Part 21 Migratory Bird Permits. The State of California has incorporated the protection of non-game birds in § 3800, migratory birds in § 3513, and birds of prey in § 3503.5 of the California Fish and Game Code.

2.1.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (Eagle Protection Act) prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald or golden eagles, including their parts (includes

feathers), nests, or eggs. The Eagle Protection Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part (includes feathers), nest, or egg thereof." The Eagle Protection Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." "Disturb" means: "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

2.1.4 Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into "Waters of the United States" without a permit from the U.S. Army Corps of Engineers (USACE). The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). The U.S. Environmental Protection Agency (USEPA) also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; in California, this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

2.1.5 Magnuson-Stevens Fishery Conservation and Management Act

The 1996 Magnuson-Stevens Fishery Conservation and Management Act, as amended (16 USC 1801), requires federal agencies to consult with NMFS whenever a proposed action has a potential to adversely affect essential fish habitat (EFH). Although states are not required to consult with NMFS, NMFS is required to develop EFH conservation recommendations for any state agency activities with the potential to affect EFH. EFH is defined as "…those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity" and includes the necessary habitat for managed fish to complete their life cycles and contribute to a sustainable fishery and healthy ecosystem. Although the concept of EFH is similar to the ESA definition of Critical Habitat, measures recommended by NMFS or a regional fisheries management council to protect EFH are advisory, rather than prescriptive (NMFS 1998).

2.2 State or Local Regulations

2.2.1 California Endangered Species Act

The California ESA (California Fish and Game Code §§ 2050-2116) protects species of fish, wildlife, and plants listed by the State as endangered or threatened. Species identified as candidates for listing may also receive protection. Section 2080 of the California ESA prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for take incidental to otherwise lawful projects under permits issued by CDFW.

2.2.2 Fully Protected Species

The State of California first began to designate species as "fully protected" prior to the creation of the federal and the California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. Fully protected species are identified in the California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish.

These sections of the California Fish and Game Code provide that fully protected species may not be taken or possessed at any time, including prohibition of CDFW from issuing ITPs for fully protected species under the California ESA. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan within which such species are covered.

2.2.3 Native Plant Protection Act

The NPPA of 1977 (California Fish and Game Code §§ 1900-1913) was established with the intent to "preserve, protect and enhance rare and endangered plants in this state." The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as "endangered" or "rare." The NPPA prohibits the take of plants listed under the NPPA, but the NPPA contains a number of exemptions to this prohibition that have not been clarified by regulation or judicial rule. In 1984, the California ESA brought under its protection all plants previously listed as endangered under NPPA. Plants listed as rare under NPPA are not protected under the California ESA but are still protected under the provisions of NPPA. The Fish and Game Commission no longer lists plants under NPPA, reserving all listings to the California ESA.

2.2.4 California Fish and Game Code Special Protections for Birds

In addition to protections contained within the California ESA and California Fish and Game Code § 3511 described above, the California Fish and Game Code includes a number of sections that specifically protect certain birds:

- Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.
- Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.
- Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests.
- Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic nonnative species, or any part of these birds.
- Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

2.2.5 Lake or Streambed Alteration Agreements

Section 1602 of the California Fish and Game Code requires individuals or agencies to provide a Notification of Lake or Streambed Alteration (LSA) to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, proposed measures to protect affected fish and wildlife resources. The final proposal mutually agreed upon by CDFW and the applicant is the LSA Agreement.

2.2.6 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the state Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State that are not regulated by the USACE due to a lack of

connectivity with a navigable water body. The RWQCB may require issuance of Waste Discharge Requirements for these activities.

2.2.7 California Environmental Quality Act

In accordance with CEQA Guidelines § 15380, a species or subspecies not specifically protected under the federal or California ESAs or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the Guidelines. These criteria parallel the definitions used in the ESA, California ESA, and NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under the ESA, California ESA, or NPPA, but that may meet the definition of endangered, rare, or threatened. Animal species identified as SSC by CDFW, birds identified as a conservation concern by USFWS, and plants identified by the CNPS as rare, threatened, or endangered may meet the CEQA definition of rare or endangered.

Species of Special Concern

SSC are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under the federal ESA, California ESA, or California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding range.
- The species is listed as federally (but not State) threatened or endangered or meets the State definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for State threatened or endangered status.
- SSC are typically associated with habitats that are threatened.

Projects that result in substantial impacts to SSC may be considered significant under CEQA.

U.S. Fish and Wildlife Service Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA." To meet this requirement, USFWS published a list of BCC (USFWS 2008) for the U.S. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest

conservation priorities. Projects that result in substantial impacts to BCC may be considered significant under CEQA.

Sensitive Natural Communities

The CDFW maintains the *California Natural Community List* (CDFW 2020), which provides a list of vegetation alliances, associations, and special stands as defined in *The Manual of California Vegetation* (Sawyer et al. 2009), along with their respective state and global rarity ranks. Natural communities with a state rarity rank of S1, S2, or S3 are considered sensitive natural communities. Impacts to sensitive natural communities may be considered significant under CEQA.

California Rare Plant Ranks

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2021), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, non-governmental organizations, and private-sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the CNDDB. The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere.
- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat).
- Threat Rank 0.2 – Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat).
- Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors such as habitat vulnerability and specificity, distribution, and condition of occurrences are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2021).

Substantial impacts to plants ranked 1A, 1B, 2, and 3 are typically considered significant under CEQA Guidelines § 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA Lead Agency.

CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, § 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines, which provides examples of impacts that would normally be considered significant.

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant under CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

2.2.8 Yuba County General Plan

The Natural Resources Element of the Yuba County 2030 General Plan (Yuba County 2011) presents the County's overarching conservation, open space, and resource management policy framework.

The following Natural Resources Element Goal and Policies are pertinent to the Study Area:

Goal NR5: *Protect and restore habitat for special-status species that have the potential to occur in Yuba County*

Policy NR5.1: *New developments that could adversely affect special-status species habitat shall conduct a biological resources assessment and identify design solutions that avoid such adverse effects.*

Policy NR5.2: *The County will coordinate its environmental review and mitigation requirements with the Yuba-Sutter NCCP/HCP, once adopted.*

Policy NR5.5: The County will support cooperative restoration, development, and promotion of natural resources with the U.S. Fish and Wildlife Service, the Army Corps of Engineers, the Bureau of Reclamation, the U.S. Forest Service, and other public agencies with an interest in the Yuba County's water and wildlife assets.

3.0 METHODS

3.1 Literature Review

The following resources were queried to determine the special-status species that had been documented within or in the vicinity of the Study Area:

- CDFW CNDDB data for the "Smartsville, California" 7.5-minute USGS quadrangle and the 8 surrounding USGS quadrangles (CDFW 2021a).
- USFWS Information, Planning, and Consultation System (IPaC) Resource Report List for the Study Area (USFWS 2021).
- CNPS' electronic Inventory of Rare and Endangered Plants of California for the "Smartsville, California" 7.5-minute USGS quadrangle and the eight surrounding USGS quadrangles (CNPS 2021).
- NOAA Species List (National Oceanic and Atmospheric Administration 2021a).

The results of the database queries are included in Attachment A.

3.2 Field Surveys Conducted

This biological resource assessment includes an initial site visit to generally characterize onsite resources, including plant communities, wildlife, special-status species, and sensitive natural communities. An aquatic resources (i.e., potential Waters of the U.S./State) delineation was conducted during this site visit. No other focused technical studies specific to the Study Area have been completed to date.

3.2.1 Special-Status Species Assessment

A field assessment for special-status species was conducted by ECORP biologist Keith Kwan on January 21, 2021. The purpose of this assessment was to identify potential biological resources constraints (e.g., aquatic resources, special-status species) onsite, identify regulatory requirements for development of the site, and assess potential mitigation needs. During the assessment, the following biological resource information was collected:

- Direct observations of special-status species;
- Animal and plant species directly observed; and
- Habitat and vegetation communities.

3.2.2 Aquatic Resources Delineation

An aquatic resources delineation was performed by ECORP biologist Keith Kwan on January 21, 2021, accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) or the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement; USACE 2008).

3.3 Special-Status Species Considered for the Project

Based on species occurrence information from the literature review and field observations, a list of special-status species considered to have the potential to occur within the Study Area was generated (Table 1, Section 4.6). Each of the species that were considered as potentially occurring within the Study Area or vicinity was evaluated based on the following criteria:

- **Present** - Species was observed during field surveys or is known to occur within the Study Area based on documented occurrences within the CNDDB or other literature.
- **Potential to Occur** - Habitat (including soils and elevation requirements) for the species occurs within the Study Area.
- **Low Potential to Occur** - Marginal or limited amounts of habitat occur, and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other available documentation.
- **Absent** - No suitable habitat (including soils and elevation requirements), and/or the species is not known to occur within the Study Area or the vicinity of the Study Area based on CNDDB records and other documentation or determinate field surveys.

3.4 Sensitive Natural Communities

The *Manual of California Vegetation, Second Edition* (Sawyer et al., 2009) was used to describe vegetation communities onsite. Sensitive natural communities are those that are listed in the CNDDB.

4.0 RESULTS

4.1 Site Characteristics and Land Use

The Study Area is located on relatively steep terrain along the shoreline of Englebright Reservoir and is situated at an elevational range of approximately 520 to 670 feet above mean sea level in the northern Sierra Nevada Foothills Subregion of the Sierra Nevada floristic region of California (Baldwin et. al. 2012). The average winter low temperature is 33.1 degrees Fahrenheit (˚F) and the average summer high temperature is 84.5˚F. Average annual precipitation is approximately 53.74 inches (National Oceanic and Atmospheric Administration 2021b).

The Study Area is made up of dirt/gravel access roads, previously cleared areas on the steep reservoir shoreline and the intake structure situated within the reservoir. The vegetation community found on the shoreline and immediately adjacent to the Study Area is foothill pine woodland. Englebright Reservoir was

created with the construction of Englebright Dam on the Yuba River. The boat launch is not paved or developed but is comprised of unvegetated compacted soil on a relatively shallow slope. The surrounding uplands are comprised of undeveloped woodland.

Representative photographs of the Study Area are included in Attachment B.

4.2 Vegetation Communities

The upland portion of the Study Area is made up entirely of unvegetated disturbed ground. These include dirt/gravel access roads and previously cleared areas on the steep reservoir shoreline. The remainder of the Study Area is located within the reservoir around the intake structure. In general, the vegetation community found on the shoreline and immediately adjacent to the Study Area is *Pinus sabiniana* Woodland Alliance (foothill pine woodland). This is not a sensitive natural community. There is no anticipated vegetation removal associated with this Project.

A list of plant species observed within and adjacent to the Study Area during the site visit is included in Attachment C.

4.3 Wildlife Observations and Movement/Corridors/Nursery Sites

The Study Area is located along an access road and previously cleared and leveled flats that have been heavily impacted. However, the surrounding uplands are made up of undeveloped foothill pine woodlands. In addition, access to the Study Area and surrounding lands is limited to YCWA and other authorized individuals; there is no public access to this location. Because of the undeveloped setting and relative absence of people, wildlife use is expected to be moderate to high in the vicinity of the Study Area.

The Study Area is in an area that ranks a 4 (Conservation Planning Linkages) according to the Areas of Conservation Emphasis-Terrestrial Connectivity database (CDFW 2021b). A rank of 1 has low biodiversity value and a rank of 5 has high biodiversity value.

Two resident deer herds of the Mother Lode Deer Management Unit, the Sacramento Valley Herd and the Camp Beale Herd may be found in the Study Area. These are resident populations without unique biological or geographical features that define their boundaries (AECOM 2011). The Study Area could also provide winter range for the migratory Mooretown Herd (AECOM 2011).

No wildlife nursery sites were observed within the Study Area during the site assessment. The upland portions of the Study Area are extremely steep and unvegetated, so no nursery sites are expected. The intake structure is located within the reservoir at a location where the shoreline is steep and with no shallow wetland margins.

A list of wildlife species observed during the site visit is included in Attachment D.

4.4 Soils

According to the Web Soil Survey (NRCS 2021a), two soil units, or types, have been mapped within the Study Area (Figure 2. *Natural Resources Conservation Service Soil Types*):

Map Features

- Study Area - 1.67 ac.

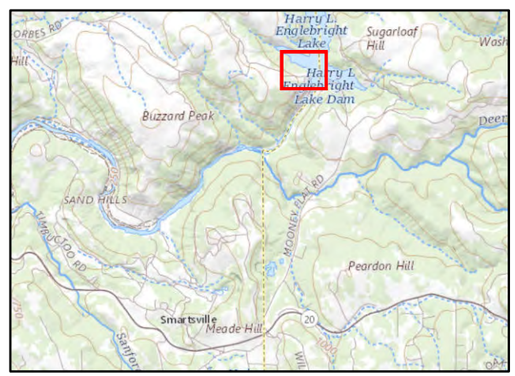
NRCS Soils within Project Area

Series Number - Series Name

- 116 - Auburn-Sobrante complex, gravelly, 30 to 50 percent slopes
- 241 - Sobrante-Timbuctoo complex, 30 to 50 percent slopes
- 254 - Water

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (gSSURGO) Database for Yuba County, CA

Sources: ESRI, YCWA, NRCS, Maxar (2018)



ECORP- N:\2020\2020-044.01 Narrows 2 Access Road\MAPS\Soils_and_Geology\N2Debris_Soils_20210113.mxd (JDS) JSwager 1/29/2021

Map Date: 1/29/2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 200

Figure 2. Natural Resources Conservation Service Soil Types

2020-044.01 YCWA - Narrows 2 Intake Debris

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Plants						
Sanborn's onion *(Allium sanbornii* var. *sanbornii)*	–	–	4.2	Chaparral, cismontane woodland, and lower montane coniferous forests, usually with gravelly, serpentinite soils (853'–4,954').	May–September	Absent. Marginally suitable habitat (disturbed woodland without serpentine soils) adjacent to but not within the Study Area.
Depauperate milk-vetch (*Astragalus pauperculus*)	–	–	4.3	Occurs on vernally mesic volcanic soils in chaparral, cismontane woodland, and valley and foothill grasslands (197'-3,986')	March–June	Absent. No suitable habitat within Study Area.
Mexican mosquito fern *(Azolla microphylla)*	–	–	4.2	Marshes and swamps, ponds or slow-moving bodies of water (98'–328').	August	Absent. No suitable habitat within Study Area.
Valley brodiaea (*Brodiaea rosea* ssp. *vallicola*)	–	–	4.2	Occurs in old alluvial terraces and silt, sandy, or gravelly soils in vernal pools and swales within valley and foothill grassland (33'–1,100').	April–May	Absent. No suitable habitat within Study Area.
Sierra foothills brodiaea *(Brodiaea sierrae)*	–	–	4.3	Usually found on serpentinite or gabbroic soils within chaparral or cismontane woodland (164'–3,215').	May–August	Absent. Marginally suitable habitat (disturbed woodland without serpentine or gabbroic soils) adjacent to but not within the Study Area.
Stebbins' morning-glory *(Calystegia stebbinsii)*	FE	CE	1B.1	Gabbroic or serpentine soils in chaparral and cismontane woodland (607'–3,576').	April–July	Absent. No suitable habitat within Study Area.
Chaparral sedge *(Carex xerophila)*	–	–	1B.2	Serpentinite or gabbroic soils within chaparral, cismontane woodland, and lower montane coniferous forest (1,444'–2,526').	March–June	Absent. No suitable habitat within Study Area.
Brandegee's clarkia *(Clarkia biloba* ssp. *brandegeeae)*	–	–	4.2	Chaparral, cismontane woodlands, and lower montane coniferous forest often along roadcuts (246'–3,002').	May–July	Absent. Suitable habitat adjacent to but not within Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Dwarf downingia *(Downingia pusilla)*	–	–	2B.2	Mesic areas in valley and foothill grassland, and vernal pools. Species appears to have an affinity for slight disturbance (i.e., scraped depressions, ditches) (Baldwin et al. 2012, CDFW 2018) (3'–1,460').	March–May	Absent. No suitable habitat within Study Area.
Northern Sierra daisy *(Erigeron petrophilus* var. *sierrensis)*	–	–	4.3	In sometimes serpentinite cismontane woodland, lower montane coniferous forest, and upper montane coniferous forest (984'–6,801').	June–October	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Study Area.
Shield-bracted monkeyflower *(Erythranthe glaucescens)*	–	–	4.3	Serpentine seeps, sometimes streambanks; chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland (197'-4,068')	February–August	Absent. No suitable habitat within Study Area.
Pine Hill flannelbush *(Fremontodendron decumbens)*	FE	CR	1B.2	Serpentine or gabbro rock outcrops in chaparral and cismontane woodland (1,394'–2,493').	April–July	Absent. No suitable habitat within Study Area.
Stinkbells *(Fritillaria agrestis)*	–	–	4.2	Clay and sometimes serpentinite soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland (33'–5,102').	March–June	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Study Area.
Butte County fritillary *(Fritillaria eastwoodiae)*	–	–	3.2	Chaparral, cismontane woodland, and openings in lower montane coniferous forest and occasionally is found on serpentinite soils (164'–4,921').	March–June	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Ahart's dwarf rush *(Juncus leiospermus* var. *ahartii)*	–	–	1B.2	Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005) (98'–751').	March–May	Absent. No suitable habitat within Study Area.
Dubious pea *(Lathyrus sulphureus* var. *argillaceus)*	–	–	3	Cismontane woodland, lower montane coniferous forest and upper montane coniferous forest (492'–3,051').	April–May	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Study Area.
Legenere *(Legenere limosa)*	–	–	1B.1	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005) (3'–2,887').	April–June	Absent. No suitable habitat within Study Area.
Cantelow's lewisia *(Lewisia cantelovii)*	–	–	1B.2	In granitic or sometimes serpentinite soils within mesic areas of broad–leaved upland forest, chaparral, cismontane woodland, and lower montane coniferous forest (1,083'–4,495').	May–October	Absent. No suitable habitat within Study Area.
Humboldt lily *(Lilium humboldtii* ssp. *humboldtii)*	–	–	4.2	Occurs in openings within chaparral, cismontane woodland, and lower montane coniferous forest (295'–4,199').	May–August	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Study Area.
Cedar Crest popcornflower *(Plagiobothrys glyptocarpus* var. *modestus)*	–	–	3	Cismontane woodland and mesic valley and foothill grasslands (108'–2,945).	April–June	Absent. Marginally suitable habitat (disturbed woodland) adjacent to but not within Study Area.
Brazilian watermeal *(Wolffia brasiliensis)*	–	–	2B.3	Assorted shallow freshwater marshes and swamps (66'–328').	April–December	Absent. No suitable habitat within Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Invertebrates						
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	-	-	Elderberry shrubs.	Any season	Absent. No suitable habitat within Study Area.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	-	-	Vernal pools/wetlands.	November-April	Absent. No suitable habitat within Study Area.
Fish						
Delta smelt (*Hypomesus transpacificus*)	FT	CE	-	Sacramento-San Joaquin delta.	N/A	Absent. Outside the known range for this species.
Chinook salmon (Central Valley spring-run ESU) (*Oncorhynchus tshawytscha*)	FT	CT	-	Undammed rivers, streams, creeks.	N/A	Absent. Project related activities are located upstream of Englebright Dam.
Chinook salmon (Central Valley fall-/late fall-run ESU) (*Oncorhynchus tshawytscha*)	–	SSC	-	Undammed rivers, streams, creeks.	N/A	Absent. Project related activities are located upstream of Englebright Dam.
Steelhead (CA Central Valley Distinct Population Segment) (*Oncorhynchus mykiss*)	FT	-	-	Undammed cold-water rivers having relatively deep pools with large substrates.	N/A	Absent. Project related activities are located upstream of Englebright Dam.
Green sturgeon (southern Distinct Population Segment) (*Acipenser medirostris*)	FT	-	-	Undammed rivers, streams, creeks.	N/A	Absent. Project related activities are located upstream of Englebright Dam.
Pacific lamprey (*Lampetra tridentata*)	–	SSC	-	Undammed streams rivers, streams, and creeks with gravel spawning substrates.	N/A	Absent. Project related activities are located upstream of Englebright Dam.
Hardhead (*Mylopharodon conocephalus*)	–	SSC	-	Relatively undisturbed streams and reservoirs at low to mid elevations in the Sacramento-San Joaquin and Russian River drainages.	N/A	Present (YCWA 2011).

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Amphibians						
California red-legged frog (*Rana draytonii*)	FT	-	SSC	Lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Adults must have aestivation habitat to endure summer dry down.	May 1-November 1	Absent. No suitable habitat within Study Area.
Foothill yellow-legged frog Northeast/Northern Sierra Clade (*Rana boylii*)	-	CT	SSC	Foothill yellow-legged frogs can be active all year in warmer locations but may become inactive or hibernate in colder climates. At lower elevations, foothill yellow-legged frogs likely spend most of the year in or near streams. Adult frogs, primarily males, will gather along main-stem rivers during spring to breed.	May - October	Absent. No suitable habitat within Study Area.
Reptiles						
Giant garter snake (*Thamnophis gigas*)	FT	CT	-	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range.	April-October	Absent. No suitable habitat within Study Area.
Northwestern pond turtle (*Actinemys marmorata*)	-	-	SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.	April-September	Potential. Englebright Reservoir supports suitable habitat.
Birds						
California black rail (*Laterallus jamaicensis coturniculus*)	-	CT	BCC, CFP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer, El Dorado counties)	March-September (breeding)	Absent. No suitable habitat within Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Osprey *(Pandion haliaetus)*	-	-	CDFW WL	Nesting habitat requires close proximity to accessible fish, open nest site free of mammalian predators, and extended ice-free season. The nest in large trees, snags, cliffs, transmission/ communication towers, artificial nest platforms, channel markers/buoys.	April-September	Potential. Suitable nesting habitat in close proximity to Study Area.
Golden eagle (*Aquila chrysaetos*)	-	-	BCC, CFP	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/savannah, and chaparral. Nesting occurs on cliff ledges, river banks, trees, and human-made structures (e.g. windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter.	Nest (February-August); winter CV (October-February)	Absent. No suitable habitat within Study Area.
Northern harrier (*Circus hudsonius*)	-	-	SSC	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities.	April-September	Absent. No suitable habitat within Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Bald eagle (*Haliaeetus leucocephalus*)	De-listed	CE	CFP, BCC	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g. rivers, lakes), wetlands, flooded agricultural fields, open grasslands	February – September (nesting); October-March (wintering)	Potential. Suitable nesting habitat in close proximity to Study Area.
Swainson's hawk (*Buteo swainsoni*)	-	CT	BCC	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/ harvesting, irrigated pastures	March-August	Absent. Study Area is not located in the known breeding range, and there is no suitable foraging habitat in the vicinity.
Burrowing owl *(Athene cunicularia)*	-	-	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g. prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds.	February-August	Absent. No suitable habitat within Study Area.
Long-eared owl *(Asio otus)*	-	-	SSC	Nests in open forests, riparian woodland, conifer forests, dense vegetation adjacent to grasslands, shrublands or other open communities	March-August (breeding); November-March (wintering in Central Valley)	Absent. No suitable habitat within Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Lewis' woodpecker (*Melanerpes lewis*)	-	-	BCC	In California, breeds in Siskiyou and Modoc counties, Warmer Mountains, inner coast ranges from Tehama to San Luis Obispo counties, San Bernardino Mountains, and Big Pine Mountain (Inyo County); nesting habitat includes open ponderosa pine forest, open riparian woodland, logged/ burned forest, and oak woodlands. Does not breed on the west side of Sierran crest (Beedy and Pandalfino 2013).	April-September (breeding); September-March (winter in Central Valley).	Absent. This species does not nest in the region but may sporadically be found wintering in the vicinity.
Nuttall's woodpecker *(Dryobates nuttallii)*	-	-	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands.	April-July	Potential. Suitable nesting habitat in close proximity to Study Area.
American peregrine falcon *(Falco peregrinus anatum)*	De-listed	De-listed	BCC, CFP	In California, breeds in coastal region, northern California, and Sierra Nevada. Nesting habitat includes cliff ledges and human-made ledges on towers and buildings. Wintering habitat includes areas where there are large concentrations of shorebirds, waterfowl, pigeons or doves.	CA Residents nest in February-June	Potential. Known active nest located approximately 1/10 mile downstream of Englebright Dam.
Oak titmouse (*Baeolophus inornatus*)			BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree)	March-July	Potential. Suitable nesting habitat in close proximity to Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Wrentit (*Chamaea fasciata*)	-	-	BCC	Coastal sage scrub, northern coastal scrub, chaparral, dense understory of riparian woodlands, riparian scrub, coyote brush and blackberry thickets, and dense thickets in suburban parks and gardens.	March-August	Absent. No suitable habitat in Study Area.
Grasshopper sparrow (*Ammodramus savannarum*)	-	-	SSC	In California, breeding range includes most coastal counties south to Baja California; western Sacramento Valley and western edge of Sierra Nevada region. Nests in moderately open grasslands and prairies with patchy bare ground. Avoids grasslands with extensive shrub cover; more likely to occupy large tracts of habitat than small fragments; removal of grass cover by grazing often detrimental.	May-August	Absent. No suitable habitat in Study Area.
Song sparrow "Modesto" (*Melospiza melodia heermanni*)	-	-	BCC, SSC	Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat	April-June	Absent. No suitable habitat in Study Area.
San Clemente spotted towhee (*Pipilo maculatus clementae*)	-	-	BCC, SSC	Resident on Santa Catalina and Santa Rosa Islands; extirpated on San Clemente Island, California. Breeds in dense, broadleaf shrubby brush, thickets, and tangles in chaparral, oak woodland, island woodland, and Bishop pine forest.	Year round resident; breeding season is April-July	Absent. This species is only found on Catalina Islands.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Yellow-breasted chat (*Icteria virens*)	-	-	SSC	In California, breeds in Klamath Mountains, inner Northern Coast Range south to San Francisco Bay, locally distributed from Santa Clara County south to San Diego County Sacramento and San Joaquin valleys, along west slope of Sierra Nevada from the Feather River to Kern River, Mono and Inyo counties. In the west, nesting habitat includes dense riparian and shrubby.	May-August	Absent. No suitable habitat in Study Area.
Tricolored blackbird (*Agelaius tricolor*)	-	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields.	March-August	Absent. No suitable habitat in Study Area.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	-	-	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County.	March-July	Absent. No suitable habitat in Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
Yellow warbler (*Setophaga petechia*)	-	-	SSC, BCC	Breeding range includes most of California, except Central Valley (isolated breeding locales on Valley floor, Stanislaus, Colusa, and Butte Counties), Sierra Nevada range above tree line, and southeastern deserts. Nesting habitat includes riparian vegetation near streams and meadows. Winters in Mexico south to South America.	May-August	Absent. No suitable habitat in Study Area.
Mammals						
Townsend's big-eared bat *(Corynorhinus townsendii)*	-	-	SSC	Caves, mines, buildings, rock crevices, trees.	April-September	Absent. No suitable habitat within Study Area.
Western red bat (*Lasiurus blossevillii*)	-	-	SSC	Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores).	April-September	Potential. Suitable roosting habitat within close proximity of Study Area.

Status Codes

FESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	FESA listed, Endangered.
FT	FESA listed, Threatened.
BCC	USFWS Bird of Conservation Concern (USFWS 2002).
CR	CESA- or NPPA-listed, Rare.
CT	CESA- or NPPA-listed, Threatened.
CE	CESA or NPPA listed, Endangered.
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5 050-reptiles/amphibians).
CDFW WL	CDFW Watch List
NPPA	California Native Plant Protection Act
SSC	CDFW Species of Special Concern
1B	CRPR/Rare or Endangered in California and elsewhere.
2B	Plants rare, threatened, or endangered in California but more common elsewhere.
3	CRPR/Plants About Which More Information is Needed – A Review List.
4	CRPR/Plants of Limited Distribution – A Watch List.

Table 1. Potentially Occurring Special-Status Species						
Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	FESA	CESA/ NPPA	Other			
0.1	Threat Rank/Seriously threatened in California (over 80 percent of occurrences threatened / high degree and immediacy of threat)					
0.2	Threat Rank/Moderately threatened in California (20 to 80 percent occurrences threatened / moderate degree and immediacy of threat)					
0.3	Threat Rank/Not very threatened in California (less than 20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)					

4.6.1 Plants

Twenty-one special-status plants have been identified as potentially occurring for the Study Area based on the initial literature review and database queries (Table 1). However, it was determined that all of the plant species could be determined to be absent. The Study Area footprint is located on previously impacted areas and regularly driven access roads. There will be no vegetation removal or any other direct impacts to natural vegetation. As such, based on the current Project limits, there are no anticipated impacts to or recommended actions pertaining to special-status plants.

4.6.2 Invertebrates

Two special-status invertebrates have been identified as potentially occurring for the Study Area based on the initial literature review and database queries (Table 1). However, it was determined that there is no suitable habitat onsite for both of these special-status invertebrates. As such, based on the current Project limits, there are no anticipated impacts to or recommended actions pertaining to special-status invertebrates. Based on the current Project limits, there are no anticipated impacts to or recommended actions pertaining to special-status invertebrates.

4.6.3 Fish

Seven special-status fish were identified as having potential to occur in the Study Area based on the literature review (Table 1). However, upon further analysis and after the site visit, six of these special-status species (i.e., delta smelt, Central Valley spring-run Chinook salmon, Central Valley fall-/late fall-run Chinook salmon, California Central Valley steelhead, green sturgeon, and Pacific lamprey) were considered absent because they only occur downstream of Englebright Dam. Englebright Dam and/or Daguerre Point Dam (located approximately 14 miles downstream of Englebright Dam) represents a fish barrier, and these six special-status fish do not occur in the Reservoir. Hardhead (*Mylopharodon conocephalus*), a California Species of Special Concern, occurs in Englebright Reservoir (YCWA 2011). In addition, Englebright Reservoir supports native resident rainbow trout (*Oncorhynchus mykiss*), Sacramento pikeminnow (*Ptychocheilus grandis*), and an assemblage of non-native salmonids, centrarchids (i.e., sunfishes and basses), ictalurids (i.e., catfishes), and cyprinids (i.e., minnows) (YCWA 2011).

- 116 – Auburn-Sobrante complex, gravelly, 30 to 50 percent slopes, and
- 241 – Sobrante-Timbuctoo complex, 30 to 50 percent slopes

Neither of these soil units is derived from serpentinite or other ultramafic parent materials (NRCS 1998).

4.4.1 Auburn Series

The Auburn series consists of shallow or moderately deep, well drained soils on foothills. These soils formed in material weathered from basic metavolcanic rocks. Soils of the Auburn series are loamy, oxidic, thermic Ruptic-Lithic Xerochrepts (NRCS 1998).

4.4.2 Sobrante Series

The Sobrante series consists of moderately deep, well drained soils on foothills. These soils formed in material weathered from basic metavolcanic rocks. Soils of the Sobrante series are fine-loamy, mixed, thermic Mollic Haploxeralfs (NRCS 1998).

4.4.3 Timbuctoo Series

The Timbuctoo series consists of moderately deep, well drained soils on foothills. These soils formed in material weathered from basic metavolcanic rocks. Soils of the Timbuctoo series are fine, mixed, thermic Typic Rhodoceralfs (NRCS 1998).

4.5 Potential Waters of the U.S./State

An aquatic resources delineation to identify potential Waters of the U.S./State was conducted onsite concurrent with the biological resources assessment site visit (ECORP 2021). No wetlands were found, but 0.142 acre of non-wetland waters (Englebright Reservoir) are located within the Study Area (Figure 3. *Aquatic Resources Delineation*).

4.6 Evaluation of Potentially Occurring Special-Status Species

Table 1 lists all the special-status plant and wildlife species (as defined in Section 3.3) identified in the literature review as potentially occurring within the Study Area. Included in this table is the listing status for each species, a brief habitat description, and a determination on the potential to occur within the Study Area. Following the table is a brief description and discussion of each special-status species that is known to occur in the Study Area (from the literature review) or is considered to potentially occur within the Study Area.

Map Features

- Study Area - 1.67 ac.
- Reference Coordinate (NAD83)

Three Criteria Smaple Points

- Upland Point
- Waters Point

Aquatic Resources (0.142 acres) [1] *

- Reservoir - 0.142 ac.

Photo Source: ESRI, Maxar (2018)
Boundary Source: Yuba County Water Agency
Delineator(s): K. Kwan
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

[1] Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program as amended on February 10, 2016, and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required.
** The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.*

ECORP: N:\2020\2020-044.01 Narrows 2 Access Road\MAPS\Jurisdictional_Delineation\N2_Intake_ARD_20210121.mxd (JDS) JSwager 1/25/2021

Map Date: 1/25/2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 100

Figure 3 Aquatic Resources Delineation

2020-044.01 YCWA - Narrows 2 Intake Debris

4.6.4 Amphibians

Two special-status amphibians were identified as having potential to occur in the Study Area based on the literature review (Table 1). However, upon further analysis and after the site visit, both of these special-status species were considered absent from the site due to the lack of suitable habitat. No further discussion of these species is provided within this assessment.

4.6.5 Reptiles

Two special-status reptiles were identified as having the potential to occur in the Study Area based on the literature review (Table 1). Englebright Reservoir represents potentially suitable habitat for one of these species, the northwestern pond turtle (*Actinemys marmorata*).

Northwestern Pond Turtle

The northwestern pond turtle is not listed pursuant to either the California or federal ESAs; however, it is designated as a CDFW SSC. They can occur in a variety of waters including ponds, lakes, streams, reservoirs, rivers, settling ponds of wastewater treatment plants, and other permanent and ephemeral wetlands (Bury et al. 2012). However, in streams and other lotic features they generally require slack- or slow-water aquatic microhabitats (Jennings and Hayes 1994). Northwestern pond turtles also require basking areas such as logs, rocks, banks, and brush piles for thermoregulation (Bury et al. 2012). They are typically active between March or April through October or November, the timing of which depends on variables such as latitude, elevation, local climate (Bury et al. 2012).

There are four documented CNDDB occurrences of northwestern pond turtle within five miles of the Study Area (CDFW 2021a). Englebright Reservoir, within the Study Area, provides suitable habitat for this species. Northwestern pond turtle has potential to occur onsite.

4.6.6 Birds

Twenty special-status bird species were identified as having the potential to occur within the Study Area based on the literature review (Table 1). However, upon further analysis and after the site visit, 15 of these species were considered absent from the site due to the lack of suitable habitat and/or the Study Area is outside the known distributional range of the species. No further discussion of these species is provided in this analysis. A brief description of the remaining five species that have the potential to occur within the Study Area is presented below.

Osprey

The Osprey (*Pandion haliaetus*) is not listed pursuant to either the California or federal ESAs; however, it is considered a CDFW watch list species. Osprey have expanded their range throughout much of North American (Bierregaard et al. 2020). Breeding habitat requirements include proximity to fish, open nest sites free from predators, and an ice-free fledging season (Bierregaard et al. 2020). Natural nesting sites include live and dead trees, cliffs, shoreline boulders, and on the ground on predator-free islands; they readily use artificial nest sites such as duck-hunting blinds, channel markers, communication towers, and

platforms erected for nesting (Bierregaard et al. 2020). Breeding season occurrences of osprey are found throughout California, with highest frequencies found along the northern California coast, northern Sacramento Valley, and the Sierra Nevada (eBird 2021). Breeding occurs from April to September.

There are no CNDDB occurrences of osprey reported within five miles of the Study Area (CDFW 2021a). The trees within the foothill pine woodland adjacent to the Study Area could provide nesting habitat for this species, and the reservoir represent suitable foraging habitat. However, no osprey nests were observed within or in close proximity to the Study Area during the initial site assessment.

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) has been delisted under the federal ESA but remains listed as endangered under the California ESA. It is fully protected pursuant to the California Fish and Game Code Section 3511 and the federal Bald and Golden Eagle Protection Act. It is a USFWS BCC. Bald eagles breed at lower elevations in the northern Sierra Nevada and North Coast ranges. Bald eagles breed in forested areas adjacent to large waterbodies (Buehler 2020). Tree species used for nesting is quite variable and includes conifers (dominant where available), oaks, hickories, cottonwoods, and aspens (Buehler 2020). Nest trees are generally the largest tree available in a suitable area (Buehler 2020). Breeding activity occurs during late February through September, with peaks in activity from March to June.

There are no CNDDB occurrences of bald eagles reported within five miles of the Study Area (CDFW 2021a). The trees within the foothill pine woodland adjacent to the Study Area could provide nesting habitat for this species, and the reservoir represent suitable foraging habitat. However, no bald eagle nests were observed within or in close proximity to the Study Area during the initial site assessment.

Nuttall's Woodpecker

The Nuttall's woodpecker (*Dryobates nuttallii*) is not listed under the California or federal ESAs but is considered a USFWS BCC. They are resident from Siskiyou County south to Baja California. Nuttall's woodpeckers nest in tree cavities primarily within oak woodlands, but also can be found in riparian woodlands (Lowther et al. 2020). Breeding occurs during April through July.

There are no documented CNDDB occurrences of this species within five miles of the Study Area (CDFW 2021a). The oak trees in the foothill pine woodland immediately adjacent to the Study Area provides suitable nesting habitat for this species.

Peregrine Falcon

The American peregrine falcon (*Falco peregrinus anatum*) has been delisted under both the California and federal ESAs; however, it is fully protected pursuant to Fish and Game Code of California Section 3511 and considered a USFWS BCC. In California, peregrine falcons breeding range includes coastal mountains, the Coast Range, Klamath Mountains, and Cascade and Sierra Nevada ranges (Small 1999). The most common nesting habitat includes ledges within cliff faces; other nesting habitats include buildings and towers (White et al. 2020). Breeding range within California includes the coastal region and the Sierra Nevada. Resident in California, peregrines nest during February through June.

There are no CNDDB occurrences of peregrine falcon reported within five miles of the Study Area (CDFW 2021a). There is no suitable peregrine falcon nesting or foraging habitat within the Study Area. However, an active peregrine falcon nest (documented by YCWA) is located approximately 1,000 feet south of the Study Area Intake Structure on the southern canyon wall of the Yuba River.

Oak Titmouse

Oak titmouse (*Baeolophus inornatus*) is not listed pursuant to the California or federal ESAs but is considered a USFWS BCC. Oak titmouse breeding range includes southwestern Oregon south through California's Coast, Transverse, and Peninsular ranges, western foothills of the Sierra Nevada, into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley (Cicero et al. 2020). They are found in dry oak or oak-pine woodlands but may also use scrub oaks or other brush near woodlands (Cicero et al. 2020). Nesting occurs during March through July.

There are no documented CNDDB occurrences of this species within five miles of the Study Area (CDFW 2021a). The trees in the foothill pine woodland immediately adjacent to the Study Area provides suitable nesting habitat for this species.

MBTA Birds

The trees and scrubby vegetation adjacent to the Study Area support potential nesting habitat for a variety of common birds protected under the MBTA and California Fish and Game Code § 3503, among others.

4.6.7 Mammals

Two special-status mammal species were identified as having the potential to occur within the Study Area based on the literature review (Table 1). However, upon further analysis and after the site visit, one of these species, Townsend's big-eared bat (*Corynorhinus townsendii*) was considered to be absent from the site due to the lack of suitable habitat. No further discussion of these species is provided within this assessment. A brief description of the remaining species that has the potential to occur within the Study Area is presented below.

Western Red Bat

The western red bat (*Lasiurus blossevillii*) is not listed pursuant to either the California or federal ESAs; however, this species is considered an SSC by CDFW. The western red bat is easily distinguished from other western bat species by its distinctive red coloration. This species is broadly distributed; its range extending from southern British Columbia in Canada through much of the western U.S. to Argentina and Chile in South America. This solitary species day-roosts primarily in the foliage of trees or shrubs in edge habitats bordering streams or open fields, in orchards, and occasionally urban areas. They may be associated with intact riparian habitat, especially with willows, cottonwoods, and sycamores. This species may occasionally utilize caves for roosting as well. They feed on a variety of insects, and generally begin to forage one to two hours after sunset. This species is considered highly migratory; however, the timing of

migration and the summer ranges of males and females may be different. Winter behavior of this species is poorly understood (Western Bat Working Group [WBWG] 2021).

There is one CNDDB occurrences of western red bat reported within five miles of the Study Area (CDFW 2021a). The trees in the foothill pine woodland surrounding the Study Area could support suitable roosting habitat for this species.

4.7 Sensitive Natural Communities

No sensitive natural communities were identified as having the potential to occur within the vicinity of the Study Area based on the literature review (CDFW 2021a). During the field assessment, no sensitive natural communities were found onsite. No further discussion of sensitive natural communities is provided within this assessment.

5.0 IMPACTS AND RECOMMENDATIONS

5.1 Waters of the U.S./State

The Project has the potential to impact Waters of the U.S./State. The following measures are recommended as potential minimization and mitigation measures for impacts to Waters of the U.S./State:

- If the Project will result in discharge of dredge or fill into Waters of the U.S., file a request for authorization to fill wetlands and other Waters of the U.S. under the Section 404 of the federal CWA (Section 404 Permit) prior to discharging any dredged or fill materials into any Waters of the U.S. Mitigation measures will be developed as part of the Section 404 Permit process to ensure no net loss of wetland function and values.
- If necessary, file a request for a Water Quality Certification or waiver pursuant to Section 401 of the CWA must be obtained from the RWQCB for Section 404 permit actions.
- Pursuant to the Porter-Cologne Water Quality Act, a permit authorization from the RWQCB is required prior to the discharge of material in an area that could affect Waters of the State. Mitigation requirements for discharge to Waters of the State within the Study Area will be developed in consultation with the RWQCB.
- An LSA Notification to CDFW under California Fish and Game Code Section 1602 may be required to request authorization to impact the aquatic features located in the Study Area.

5.2 Wildlife Movement/Corridors/Nursery Sites

No impacts to wildlife movement, corridors, or nursery sites are expected because no vegetation removal is anticipated, and the Study Area is located on existing accessing roads and cleared flats.

5.3 Special-Status Species

There is potentially suitable habitat within the Study Area for one special-status fish, one special-status reptile, five special-status birds, and one special-status mammal. A brief discussion of recommended avoidance and minimization measures is presented below for each group.

5.3.1 Hardhead

Englebright Reservoir supports hardhead, a native cyprinid and California Species of Special Concern. The following measures are recommended to minimize, or mitigate for, potential adverse effects on this special-status fish species:

- In-water work activities will avoid the peak hardhead spawning period of April-May.

5.3.2 Northwestern Pond Turtle

Englebright Reservoir supports suitable habitat for the northwestern pond turtle. The following measures are recommended to reduce, minimize, or mitigate for potential adverse effects on this special-status species:

- A qualified biologist will perform a preconstruction clearance survey within 24 hours of the initiation of Project activities.
- If northwestern pond turtles are found within the Project footprint, the qualified biologist, with appropriate scientific collecting permit, shall relocate the turtle(s) to another location on the reservoir shoreline.
- If no northwestern pond turtles are found during clearance survey, no further measures are necessary.

5.3.3 Special-Status Raptors (Osprey and Bald Eagle) and Other Protected Raptors

For Project activities with potential to affect active raptor nests (e.g., activities proposed to occur in or within 500 feet of suitable habitat), the following measures are recommended to prevent potential impacts to active raptor nests.

- For Project activities that begin between February 1 and September 15, including tree and other vegetation removal, qualified biologists shall conduct preconstruction surveys for osprey, bald eagle, and other raptors to identify active nests on and within 500 feet of the Project site. The surveys shall be conducted within 14 days before the beginning of any construction activities between February 1 and September 15.
- Impacts to active raptor nests shall be avoided by establishing appropriate buffers around active raptor nests identified during preconstruction surveys; buffers shall be determined by a qualified biologist in consultation with CDFW. Project activity shall not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have

fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. The size of the buffer may be adjusted if a qualified biologist and the applicant, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during construction activities may be necessary.

- If no active raptor nests are found during preconstruction surveys, no further measures relating to protected raptors is necessary.
- There are no anticipated impacts to the active peregrine falcon nest located over 1,000 feet south of the Study Area.

5.3.4 Other Special-Status Birds and Migratory Bird Treaty Act Birds

For project activities with potential to affect special-status bird and MBTA bird nests, the following measures are recommended to prevent potential impacts to active bird nests.

- To the extent feasible, Project activities shall occur prior to the nesting season, September 16 through January 31.
- For Project activities that begin between February 1 and September 15 qualified biologists shall conduct preconstruction nesting bird surveys on and within 100 feet of the Project site. The surveys shall be conducted within 14 days before the beginning of any construction activities between February 1 and September 15.
- Impacts to special-status bird and MBTA bird nests shall be avoided by establishing appropriate buffers around active raptor nests identified during preconstruction surveys; buffers shall be determined by a qualified biologist in consultation with CDFW. Project activity shall not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. The size of the buffer may be adjusted if a qualified biologist and the applicant, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during construction activities may be necessary.
- If no active special-status bird and MBTA bird nests are found during preconstruction surveys, no further measures relating to protected birds is necessary.

5.3.5 Special-Status Bats

For project activities with potential to affect special-status bats, the following measures are recommended.

- If no trees or vegetation are impacted, no measures are recommended pertaining to the western red bat.

- If tree or vegetation removal will occur, bat roost surveys shall be conducted by a qualified wildlife biologist within 14 days before any Project initiation. Locations of vegetation and tree removal or excavation will be examined for potential bat roosts. Specific survey methodologies will be determined in coordination with CDFW, and may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, bat sign (e.g., guano), or use of ultrasonic detectors (e.g., SonoBat, Anabat).
- Disturbance of any significant roost sites found will be avoided to the extent feasible.
- If it is determined that an active roost site cannot be avoided and will be affected, the biologist shall first notify and consult with CDFW on appropriate bat exclusion methods and roost removal procedures. Once it is confirmed that all bats have left the roost, crews will be allowed to continue work in the area.
- If no active bat roosts are found during the preconstruction survey, no further measures relating to special-status bats is necessary.

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LIST OF ATTACHMENTS

ATTACHMENT A

Results of Database Queries

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

21 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3912134, 3912133, 3912132, 3912124, 3912123, 3912122, 3912114 3912113 and 3912112;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium sanbornii var. sanbornii	Sanborn's onion	Alliaceae	perennial bulbiferous herb	May-Sep	4.2	S3S4	G4T3T4
Astragalus pauperculus	depauperate milk-vetch	Fabaceae	annual herb	Mar-Jun	4.3	S4	G4
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual / perennial herb	Aug	4.2	S4	G5
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2	S3	G5T3
Brodiaea sierrae	Sierra foothills brodiaea	Themidaceae	perennial bulbiferous herb	May-Aug	4.3	S3	G3
Calystegia stebbinsii	Stebbins' morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jul	1B.1	S1	G1
Carex xerophila	chaparral sedge	Cyperaceae	perennial herb	Mar-Jun	1B.2	S2	G2
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Onagraceae	annual herb	May-Jul	4.2	S4	G4G5T4
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Erigeron petrophilus var. sierrensis	northern Sierra daisy	Asteraceae	perennial rhizomatous herb	Jun-Oct	4.3	S4	G4T4
Erythranthe glaucescens	shield-bracted monkeyflower	Phrymaceae	annual herb	Feb-Aug(Sep)	4.3	S3S4	G3G4
Fremontodendron decumbens	Pine Hill flannelbush	Malvaceae	perennial evergreen shrub	Apr-Jul	1B.2	S1	G1
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
Fritillaria eastwoodiae	Butte County fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	3.2	S3	G3Q
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2	S1	G2T1
Lathyrus sulphureus var. argillaceus	dubious pea	Fabaceae	perennial herb	Apr-May	3	S1S2	G5T1T2Q

Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lewisia cantelovii	Cantelow's lewisia	Montiaceae	perennial herb	May-Oct	1B.2	S3	G3
Lilium humboldtii ssp. humboldtii	Humboldt lily	Liliaceae	perennial bulbiferous herb	May-Jul(Aug)	4.2	S3	G4T3
Plagiobothrys glyptocarpus var. modestus	Cedar Crest popcornflower	Boraginaceae	annual herb	Apr-Jun	3	SH	G3THQ
Wolffia brasiliensis	Brazilian watermeal	Araceae	perennial herb (aquatic)	Apr,Dec	2B.3	S2	G5

Suggested Citation

California Native Plant Society, Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 12 January 2021].

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Information
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Contributors
The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments
rareplants@cnps.org

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Smartville (3912123))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAABH01050	***Rana boylii*** foothill yellow-legged frog	None	Endangered	G3	S3	SSC
ABNME03041	***Laterallus jamaicensis coturniculus*** California black rail	None	Threatened	G3G4T1	S1	FP
ABNSB13010	***Asio otus*** long-eared owl	None	None	G5	S3?	SSC
AFCHA0205A	***Oncorhynchus tshawytscha pop. 6*** chinook salmon - Central Valley spring-run ESU	Threatened	Threatened	G5	S2	
AFCHA0209K	***Oncorhynchus mykiss irideus pop. 11*** steelhead - Central Valley DPS	Threatened	None	G5T2Q	S2	
AMACC01020	***Myotis yumanensis*** Yuma myotis	None	None	G5	S4	
AMACC05030	***Lasiurus cinereus*** hoary bat	None	None	G5	S4	
AMACC05060	***Lasiurus blossevillii*** western red bat	None	None	G5	S3	SSC
ARAAD02030	***Emys marmorata*** western pond turtle	None	None	G3G4	S3	SSC
PDCAM060C0	***Downingia pusilla*** dwarf downingia	None	None	GU	S2	2B.2
PDONA05053	***Clarkia biloba ssp. brandegeeae*** Brandegee's clarkia	None	None	G4G5T4	S4	4.2

Record Count: 11

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Yuba County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS

Giant Garter Snake Thamnophis gigas — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4482

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/498	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED,

WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my speci ed location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my speci ed location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to

confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

LAKE

L1UBK

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error

is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NMFS Species List

Quad Name: Smartville

Quad Number: 39121-B3

ESA Anadromous Fish

CVSR Chinook Salmon ESU (T)

CCV Steelhead DPS (T)

ESA Anadromous Fish Critical Habitat

CVSR Chinook Salmon Critical Habitat

CCV Steelhead Critical Habitat

Essential Fish Habitat

Chinook Salmon EFH

Accessed January 12, 2021
(https://archive.fisheries.noaa.gov/wcr/maps_data/california_species_list_tools.html)

ATTACHMENT B

Representative Site Photos

Photo 1. Debris Stockpile Area, facing east, January 21, 2021.

Photo 2. Intake Structure, facing northeast, January 21, 2021.

Photo 3. Access Road Leading to Boat Launch Area, facing northwest, January 21, 2021.

Photo 4. Boat Launch Area, facing northwest, January 21, 2021.

Photo 5. Debris Stockpile Area, facing NW, January 21, 2021.

Photo 6. Study Area Access Road, facing NW. January 21, 2021.

ATTACHMENT C

Plant List

Attachment C. Plant Observed Onsite (January 21, 2021)

Scientific Name	Common Name
Achillea millefolium	Common yarrow
*Andropogon virginicus**	Broomsedge bluestem
Arctostaphylos viscida	Manzanita
Avena species*	Wild oat
*Bromus diandrus**	Ripgut brome
*Centaurea solstitialis**	Yellow star-thistle
Cephalanthus occidentalis	Common buttonbush
*Cynodon dactylon**	Bermuda grass
*Cynosurus echinatus**	Hedgehog dog-tail grass
Dudleya cymosa	Rock lettuce
Eschscholzia californica	California poppy
Galium aparine	Goose grass
*Geranium molle**	Hairy geranium
Heteromeles arbutifolia	Toyon
*Hypochaeris glabra**	Smooth cat's-ear
Juncus balticus ssp. *ater*	Baltic rush
Juncus effusus	Soft rush
*Mentha pulegium**	Pennyroyal
Phoradendron serotinum	Oak mistletoe
Pinus ponderosa	Ponderosa pine
Pinus sabiniana	Gray pine
Quercus chrysolepis	Canyon live oak
Quercus douglasii	Blue oak
Quercus wislizeni	Interior live oak
*Rubus armeniacus**	Himalayan blackberry
*Senecio vulgaris**	Common groundsel
*Silybum marianum**	Milk thistle
Stipa species	Needle grass
Toxicodendron diversilobum	Poison oak
*Trifolium hirtum**	Rose clover
Typha latifolia	Broad-leaf cattail
*Verbascum thapsus**	Common mullein
*Verbena bonariensis**	South American vervain

* Non-native Species

ATTACHMENT D

Wildlife Observed List

Attachment D. Wildlife Observed Onsite (January 21, 2021)

Common Name	Scientific Name
Birds	
Mourning Dove	*Zenaida macroura*
Anna's Hummingbird	*Calypte anna*
Turkey Vulture	*Cathartes aura*
Red-tailed Hawk	*Buteo jamaicensis*
Acorn Woodpecker	*Melanerpes formicivorus*
California Scrub-Jay	*Aphelocoma californica*
Oak Titmouse	*Baeolophus inornatus*
Ruby-crowned Kinglet	*Regulus calendula*
Lesser Goldfinch	*Spinus psaltria*
California Towhee	*Melozone crissalis*
Mammals	
Western gray squirrel	*Sciurus griseus*
Mule deer (tracks)	*Odocoileus hemionus*

Aquatic Resources Delineation

Narrows 2 Intake Debris Removal Project

Yuba County, California

Prepared for:

Yuba County Water Agency

February 17, 2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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LIST OF ACRONYMS AND ABBREVIATIONS

CDEC	California Data Exchange Center
CFR	Code of Federal Regulations
CWA	Clean Water Act
FR	Federal Register
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
NWPR	Navigable Waters Protection Rule
OHWM	Ordinary high water mark
PJD	Preliminary Jurisdictional Determination
RWQCB	Regional Water Quality Control Board
Study Area	Narrows 2 Intake Debris Removal Project
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
YCWA	Yuba County Water Agency

1.0 INTRODUCTION

On behalf of the Yuba County Water Agency (YCWA), ECORP Consulting, Inc. conducted an aquatic resources delineation for the approximately 1.67-acre Narrows 2 Intake Debris Removal Project (Study Area) located in Yuba County, California. The Study Area is located at the southern shoreline of Englebright Reservoir, Yuba County, California (Figure 1. *Study Area Location and Vicinity*). The Study Area corresponds to a portion of Section 14, Township 16 North, Range 6 East of the "Smartville, California" 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1995). The approximate center of the Study Area is located at NAD83 coordinates 39.241574° latitude and -121.271493° longitude within the Upper Yuba Watershed (Hydrologic Unit Code #18020125; Natural Resources Conservation Service [NRCS], USGS, and U.S. Environmental Protection Agency [USEPA] 2016). Driving directions to the Study Area are included as Attachment A.

This report describes aquatic resources identified within the Study Area that may be regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the federal Clean Water Act (CWA). The information presented in this report provides data required by the USACE Sacramento District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2016a). The aquatic resource boundaries depicted in this report represent a calculated estimation of the jurisdictional area within the Study Area and are subject to modification following the USACE verification process.

The purpose of this report is to provide adequate information to USACE for the issuance of a Preliminary Jurisdictional Determination (PJD).

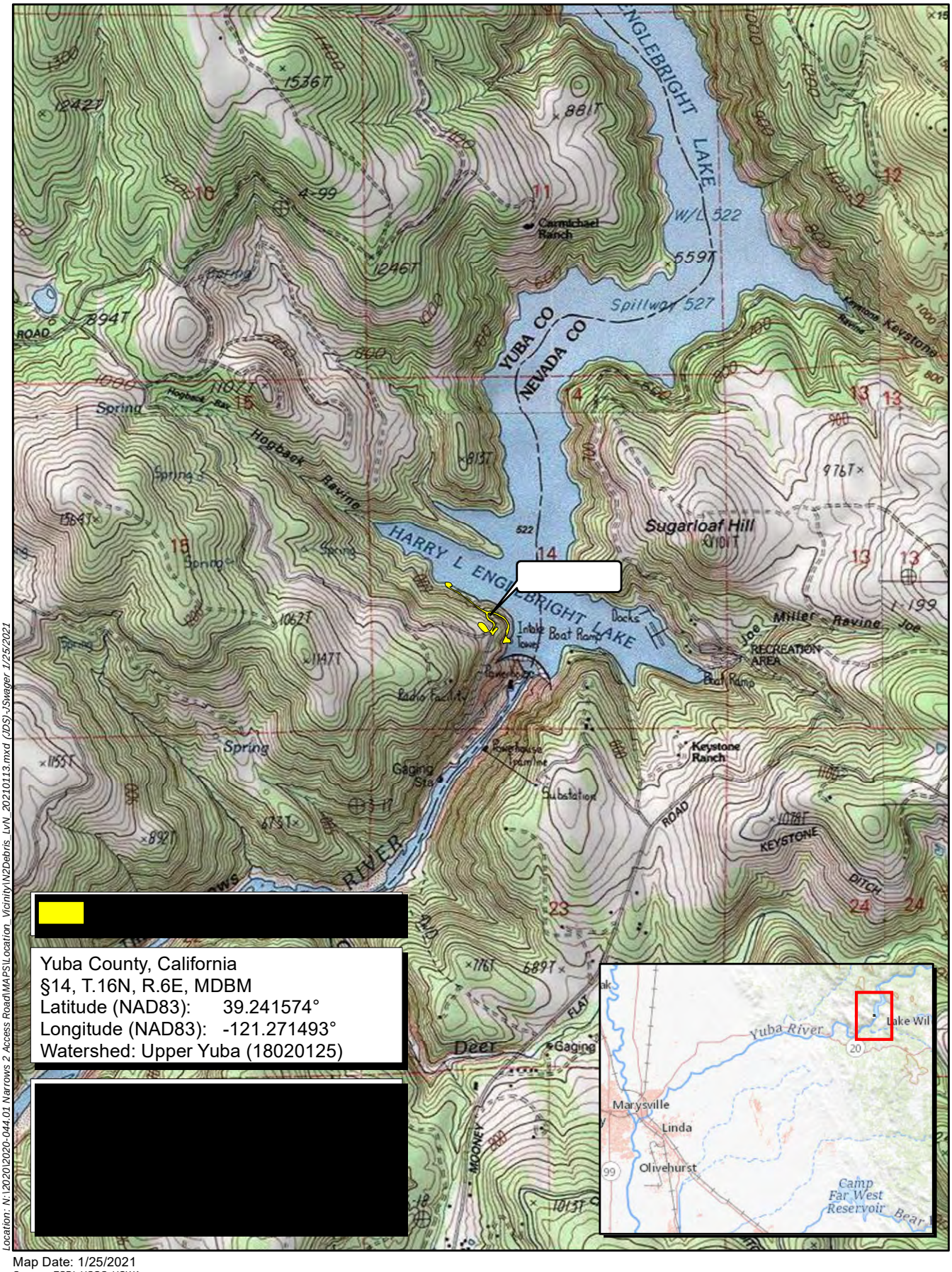
2.0 REGULATORY SETTING

2.1 Waters of the United States

This report describes aquatic resources, including wetlands that may be regulated by USACE under Section 404 of the federal CWA. The following sections define these regulations.

2.1.1 Wetlands

Wetlands are "*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (51 Federal Register [FR] 41250, Nov. 13, 1986, as amended at 58 FR 45036, Aug. 25, 1993). Wetlands can be perennial or intermittent.



Location: N:\2020\2020-044.01 Narrows 2 Access Road\MAPS\Location_Vicinity\N2Debris_LvN_20210113.mxd (JDS) JSwager 1/25/2021

Map Date: 1/25/2021
Sources: ESRI, USGS, YCWA

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1. Study Area Location and Vicinity

2020-044.01 YCWA - Narrows 2 Intake Debris

2.1.2 Other Waters

Other waters are nontidal, perennial, and intermittent watercourses and tributaries to such watercourses (51 FR 41250, Nov. 13, 1986, as amended at 58 FR 45036, August 25, 1993). The limit of USACE jurisdiction for nontidal watercourses (without adjacent wetlands) is defined in 33 Code of Federal Regulations (CFR) 328.4(c)(1) as the "ordinary high water mark" (OHWM). The OHWM is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" approximation of the lateral limit of USACE jurisdiction. The upstream limits of other waters are defined as the point where the OHWM is no longer perceptible.

2.2 Clean Water Act

The USACE regulates discharge of dredged or fill material into Waters of the U.S. under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into Waters of the U.S., including, but not limited to the following: placement of fill necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines [33 CFR § 328.2(f)]. In addition, Section 401 of the CWA (33 U.S. Code 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Substantial impacts to wetlands, over 0.5 acre of impact, may require an individual permit. Projects that only minimally affect wetlands, less than 0.5 acre of impact, may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

2.3 Jurisdictional Assessment

On April 21, 2020, the USEPA and the Department of the Army published the Navigable Waters Protection Rule (NWPR) to define "Waters of the United States" in the FR (USACE and USEPA 2020). The agencies are streamlining the definition so that it includes four categories of jurisdictional waters, provides clear exclusions for many water features that traditionally have not been regulated, and defines terms in the regulatory text that have never been defined before. The NWPR regulates traditional navigable waters and the core tributary systems that provide perennial or intermittent flow into them.

The four categories of federally regulated waters are:

- The territorial seas and traditional navigable waters;
- Perennial and intermittent tributaries to those waters;

- Certain lakes, ponds, and impoundments; and
- Wetlands adjacent to jurisdictional waters.

The final rule also details 12 categories of exclusions, features that are not "waters of the United States," such as features that only contain water in direct response to rainfall (e.g., ephemeral features); groundwater; many ditches; prior converted cropland; and waste treatment systems.

The final rule clarifies key elements related to the scope of federal CWA jurisdiction, including:

- Providing clarity and consistency by removing the proposed separate categories for jurisdictional ditches and impoundments.
- Refining the proposed definition of "typical year," which provides important regional and temporal flexibility and ensures jurisdiction is being accurately determined in times that are not too wet and not too dry.
- Defining "adjacent wetlands" as wetlands that are meaningfully connected to other jurisdictional waters, for example, by directly abutting or having regular surface water communication with jurisdictional waters.

The NWPR is the second step in a two-step process to review and revise the definition of "waters of the United States" consistent with the February 2017 Presidential Executive Order entitled "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States.'" This final rule became effective on June 22, 2020 and has replaced the Step One Rule published in October 2019.

2.4 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" [Water Code 13260(a)]. Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" [Water Code 13050 (e)]. The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirement for these activities.

3.0 METHODS

This aquatic resources delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement) (USACE 2008). The boundaries of aquatic resources were delineated through standard field methods (e.g., paired sample

set analyses). Field data were recorded on Wetland Determination Data Forms - Arid West Region (Attachment B). *Munsell Soil Color Charts* (Munsell Color 2009) and the Web Soil Survey (NRCS 2021a) were used to aid in identifying hydric soils in the field. *The Jepson Manual, 2nd Edition* (Baldwin et al. 2012) was used for plant nomenclature and identification.

The field delineation and data collection were conducted on January 21, 2021 by ECORP biologist Keith Kwan. The biologist walked the entire Study Area to determine the location and extent of aquatic resources within the Study Area during the surveys. One paired location was sampled to evaluate whether or not the vegetation, hydrology, and soils data supported an aquatic resource determination. At the paired location, one point was located such that it was within the estimated aquatic resource area, and the other point was situated outside the limits of the estimated aquatic resource area. Aquatic resources and sampling point locations within the Study Area were recorded in the field using a post-processing capable Global Positioning System unit with sub-meter accuracy (Juniper Systems, Inc. Geode GNS2 Multi-GNSS 10Hz Receiver with Apple iPad/iOS interface).

3.1 Routine Determinations for Wetlands

To be determined a wetland, the following three criteria must be met:

- A majority of dominant vegetation species are wetland-associated species;
- Hydrologic conditions exist that result in periods of flooding, ponding, or saturation during the growing season; and
- Hydric soils are present.

3.1.1 Vegetation

Hydrophytic vegetation is defined as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanent or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present (Environmental Laboratory 1987). The definition of wetlands includes the phrase "*a prevalence of vegetation typically adapted for life in saturated soil conditions*." Prevalent vegetation is characterized by the dominant plant species comprising the plant community (Environmental Laboratory 1987). The dominance test is the basic hydrophytic vegetation indicator and was applied at each sampling point location. The "50/20 rule" was used to select the dominant plant species from each stratum of the community. The rule states that for each stratum in the plant community, dominant species are the most abundant plant species (when ranked in descending order of coverage and cumulatively totaled) that immediately exceed 50 percent of the total coverage for the stratum, plus any additional species that individually comprise 20 percent or more of the total cover in the stratum (USACE 1992, 2008).

Dominant plant species observed at each sampling point were then classified according to their indicator status (probability of occurrence in wetlands, Table 1), *North American Digital Flora: National Wetland Plant List* (Lichvar et al. 2016). If the majority (more than 50 percent) of the dominant vegetation on a site

are classified as obligate (OBL), facultative wetland (FACW), or facultative (FAC), the site was considered to be dominated by hydrophytic vegetation.

Table 1. Classification of Wetland-Associated Plant Species[1]

Plant Species Classification	Abbreviation	Probability of Occurring in Wetland
Obligate	OBL	Almost always occur in wetlands
Facultative Wetland	FACW	Usually occur in wetlands, but may occur in non-wetlands
Facultative	FAC	Occur in wetlands and non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands, but may occur in wetlands
Upland	UPL	Almost never occur in wetlands
Plants That Are Not Listed (assumed upland species)	N/L	Does not occur in wetlands in any region.

[1]Source: Lichvar et al. 2016

In instances where indicators of hydric soil and wetland hydrology were present, but the plant community failed the dominance test, the vegetation was re-evaluated using the Prevalence Index. The Prevalence Index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code (OBL=1, FACW=2, FAC=3, FACU=4, and UPL=5) and weighting is by abundance (percent cover). If the plant community failed the Prevalence Index, the presence/absence of plant morphological adaptations to prolonged inundation or saturation in the root zone was evaluated.

3.1.2 Soils

A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (NRCS 2003). Indicators that a hydric soil is present include, but are not limited to, histosols, histic epipedon, hydrogen sulfide, depleted below dark surface, sandy redox, loamy gleyed matrix, depleted matrix, redox dark surface, redox depressions, and vernal pools.

At each sampling point, a soil pit was excavated to the depth needed to document an indicator to confirm the absence of indicators, or until refusal at each sampling point. The soil was then examined for hydric soil indicators. Soil colors were determined while the soil was moist using the *Munsell Soil Color Charts* (Munsell Color 2009). Hydric soils are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds in a saturated and anaerobic environment. These processes and the features in the soil that develop can be identified by looking at the color and texture of the soils.

3.1.3 Hydrology

Wetlands, by definition, are seasonally or perennially inundated or saturated at or near (within 12 inches of) the soil surface. Primary indicators of wetland hydrology include, but are not limited to: visual observation of saturated soils, visual observation of inundation, surface soil cracks, inundation visible on

aerial imagery, water-stained leaves, oxidized rhizospheres along living roots, aquatic invertebrates, water marks (secondary indicator in riverine environments), drift lines (secondary indicator in riverine environments), and sediment deposits (secondary indicator in riverine environments). The occurrence of one primary indicator is sufficient to conclude that wetland hydrology is present. If no primary indicators are observed, two or more secondary indicators are required to conclude wetland hydrology is present. Secondary indicators include, but are not limited to drainage patterns, crayfish burrows, FAC-neutral test, and shallow aquitard.

4.0 RESULTS

4.1 Existing Site Conditions

The Study Area is located on relatively steep terrain along the shoreline of Englebright Reservoir and is situated at an elevational range of approximately 520 to 670 feet above mean sea level in the northern Sierra Nevada Foothills Subregion of the Sierra Nevada floristic region of California (Baldwin et al. 2012). The average winter low temperature is 33.1 degrees Fahrenheit (˚F) and the average summer high temperature is 84.5˚F. Average annual precipitation is approximately 53.74 inches (National Oceanic and Atmospheric Administration 2021).

The Study Area is made up of dirt access roads, previously cleared areas on the steep reservoir shoreline, and the intake structure situated within the reservoir. The vegetation community found on the shoreline and immediately adjacent to the Study Area is foothill pine woodland.

This aquatic resources delineation was conducted in the winter, during the non-blooming season for most plant species. The delineation was not conducted at an optimal time of the year to observe wetland hydrology, but hydric soil indicators, if present, would have been observable. It is important to note that the water level of Englebright Reservoir is maintained fairly constant throughout the year according to YCWA staff. Many plant species had senesced by the time of the survey, but some were identifiable to species based upon vegetative or fruit morphology. During the 2020-2021 wet season prior to this survey, 5.07 inches of precipitation was recorded at the Englebright reporting station (California Data Exchange Center [CDEC] 2021).

4.1.1 National Wetlands Inventory

The U.S. Fish and Wildlife Service (USFWS) is the principal U.S. federal agency tasked with providing information to the public on the status and trends of our Nation's wetlands. The National Wetlands Inventory (NWI) is a publicly available resource that provides detailed information on the abundance, characteristics, and distribution of U.S. wetlands. The USFWS's objective of mapping wetlands and deepwater habitats is to produce reconnaissance-level information on the location, type, and size of these resources. The maps are prepared from the analysis of high-altitude imagery. Wetlands are identified based on vegetation, visible hydrology, and geography. A margin of error is inherent in the use of imagery.

According to NWI, Englebright Reservoir has been mapped as "Lake" (USFWS 2021) (Figure 2. *National Wetlands Inventory*).

4.1.2 Soils

According to the Web Soil Survey (NRCS 2021a), two soil units, or types, have been mapped within the Study Area (Figure 3. *Natural Resources Conservation Service Soil Types*):

- 116 – Auburn-Sobrante complex, gravelly, 30 to 50 percent slopes.
- 241 – Sobrante-Timbuctoo complex, 30 to 50 percent slopes.

Neither of these soil units are considered hydric soils (NRCS 2021b).

4.2 Aquatic Resources

A total of 0.142 acre of aquatic resources have been mapped within the Study Area (Table 2). The wetland determination data forms are included in Attachment B, and a list of plant species observed within the Study Area is included as Attachment C. A discussion of the aquatic resources is presented below, and the aquatic resources delineation map is presented on Figure 4. *Aquatic Resources Delineation*.

Table 2. Aquatic Resources

Type	Acreage[1]
Non-Wetland Waters	
Englebright Reservoir	0.142
Total	0.142

[1]Acreages represent a calculated estimation and are subject to modification following the USACE verification process.

Representative site photographs are included as Attachment D. The USACE Operations and Maintenance Business Information Link Regulatory Module aquatic resources table of potential Waters of the U.S. is included in Attachment E.

4.2.1 Wetlands

No wetlands were found within the Study Area.

4.2.2 Non-Wetland Waters

Englebright Reservoir

The Study Area is located on the shoreline and adjacent uplands of Englebright Reservoir. Englebright Reservoir was created with the construction of Englebright Dam on the Yuba River. Vegetation along the banks of the reservoir are a combination of hydrophytes and upland species. The shoreline is relatively

Map Features

Study Area - 1.67 ac.

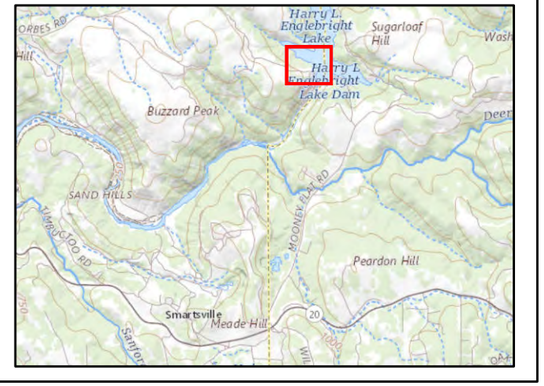
NWI Type

Lake

Riverine

United States Fish and Wildlife Service (USFWS)
National Wetlands Inventory (NWI)
October 2020

Sources: ESRI, YCWA, NRCS, Maxar (2018)



ECORP- N:\2020\2020-044.01 Narrows 2 Access Road\MAPS\Jurisdictional_Delineation\N2_Intake_NWI_20210113.mxd (JDS) JSwager 1/29/2021

Map Date: 1/29/2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 200

Figure 2. National Wetlands Inventory

2020-044.01 YCWA - Narrows 2 Intake Debris

Map Features

- Study Area - 1.67 ac.

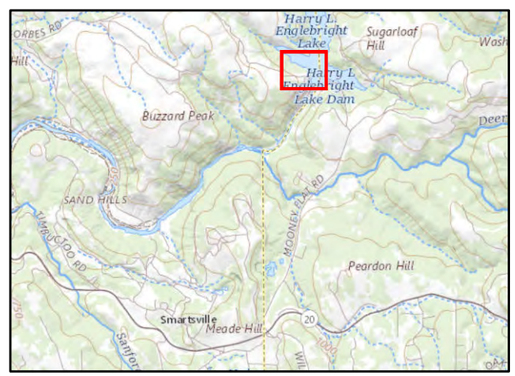
NRCS Soils within Project Area

Series Number - Series Name

- 116 - Auburn-Sobrante complex, gravelly, 30 to 50 percent slopes
- 241 - Sobrante-Timbuctoo complex, 30 to 50 percent slopes
- 254 - Water

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (gSSURGO) Database for Yuba County, CA

Sources: ESRI, YCWA, NRCS, Maxar (2018)



ECORP- N:\2020\2020-044.01 Narrows 2 Access Road\MAPS\Soils_and_Geology\N2Debris_Soils_20210113.mxd (JDS) JSwager 1/29/2021

Map Date: 1/29/2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 200

Figure 3. Natural Resources Conservation Service Soil Types

2020-044.01 YCWA - Narrows 2 Intake Debris

Map Features

- Study Area - 1.67 ac.
- Reference Coordinate (NAD83)

Three Criteria Smaple Points

- Upland Point
- Waters Point

Aquatic Resources (0.142 acres) [1] *

- Reservoir - 0.142 ac.

Photo Source: ESRI, Maxar (2018)
Boundary Source: Yuba County Water Agency
Delineator(s): K. Kwan
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

[1] Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program as amended on February 10, 2016, and conforms to Sacramento District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate locations are required.
** The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.*

ECORP: N:\2020\2020-044.01 Narrows 2 Access Road\MAPS\Jurisdictional_Delineation\N2_Intake_ARD_20210121.mxd (JDS) JSwager 1/25/2021

Map Date: 1/25/2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 100

Figure 4 Aquatic Resources Delineation

2020-044.01 YCWA - Narrows 2 Intake Debris

steep at most locations except for the boat launch area. The boat launch is not paved or developed but is comprised of compacted soil on a relatively shallow slope. This area is largely unvegetated. The limits of the reservoir were mapped at the water level observed on the day of the field survey, January 21, 2021. This is presumably the OHWM, as the water level is maintained relatively constant according to YCWA staff.

5.0 JURISDICTIONAL ASSESSMENT

As per Regulatory Guidance Letter 16-01, an applicant may request a PJD "in order to move ahead expeditiously to obtain a USACE permit authorization where the requestor determin*es that it is in his or her best interest to do so … even where initial indications are that the aquatic resources on a parcel may not be jurisdictional*" (USACE 2016b).

In the context of the NWPR, Englebright Reservoir would be considered jurisdictional as an impoundment or perennial tributaries to a traditionally navigable water.

6.0 CONCLUSION

A total of 0.142 acre of aquatic resources have been mapped within the Study Area. This acreage represents a calculated estimation of the extent of aquatic resources within the Study Area and is subject to modification following USACE review and/or the verification process. Any impacts to Englebright Reservoir would likely require permitting under Section 404 of the CWA.

7.0 REFERENCES

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LIST OF ATTACHMENTS

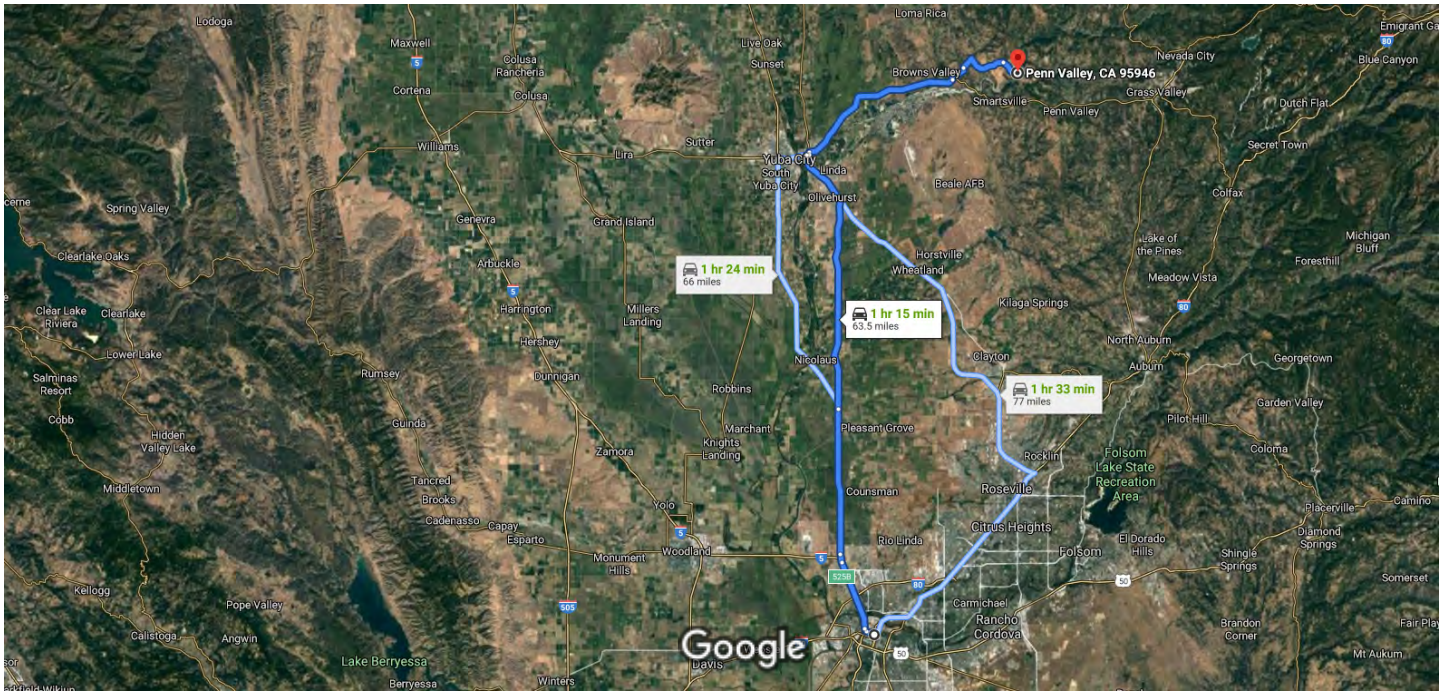
ATTACHMENT A

Driving Directions to Study Area

Google Maps

1325 J Street, Sacramento, CA to Penn Valley, California 95946

Drive 63.5 miles, 1 hr 15 min



Imagery ©2021 TerraMetrics, Map data ©2021 5 mi

1325 J St

Sacramento, CA 95814

Get on I-5 N from I St

4 min (1.1 mi)

1. Head west on Improv Alley toward 13th St

197 ft

2. Turn right onto 13th St

200 ft

3. Turn left at the 1st cross street onto I St

0.7 mi

4. Use the right 2 lanes to turn right onto the I-5 N/State Hwy 99 ramp to Redding/Yuba City

0.3 mi

Take CA-99 N and CA-70 N to State Hwy 70 E/9th St in Marysville

37 min (40.2 mi)

5. Merge onto I-5 N

5.8 mi

6. Use the right 2 lanes to take exit 525B for CA-99 toward Yuba City/Marysville

0.7 mi

7. Continue onto CA-99 N

11.8 mi

8. Keep right to continue on CA-70 N, follow signs for Marysville/Oroville

22.0 mi

Take CA-20 E/State Hwy 20 E and Scott Forbes Rd to your destination

35 min (22.2 mi)

9. Turn right onto State Hwy 70 E/9th St (signs for Oroville)

Pass by 7-Eleven (on the right)

0.2 mi

10. Use any lane to turn left onto B St

Pass by Dollar General (on the right)

0.3 mi

11. Turn right onto CA-20 E/State Hwy 20 E/12th St

Continue to follow CA-20 E/State Hwy 20 E

14.3 mi

12. Turn left onto Peoria Rd

1.6 mi

13. Continue straight onto Scott Forbes Rd

4.2 mi

14. Turn right

Restricted usage road

Destination will be on the right

1.7 mi

Penn Valley

California 95946

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

ATTACHMENT B

Wetland Determination Data Forms - Arid West Region

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: YWA Narrows 2 Intake Debris Removal Project City/County: Yuba County Sampling Date: 1/21/2021

Applicant/Owner: Yuba Water Agency State: CA Sampling Point: 1

Investigator(s): Keith Kwan Section, Township, Range: S.14 T.16N R.06E

Landform (hillslope, terrace, etc.): gentle slope/shoreline Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): C Lat: 39.243018969 Long: -121.273455269 Datum: NAD83

Soil Map Unit Name: 254-Water NWI classification: Lake

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:

this location is below the OHWM of Englebright Reservoir

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

there is no vegetation at this location

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/3	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1) (**Nonriverine**)
- ✓ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No _____ Depth (inches): 12"+

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: YWA Narrows 2 Intake Debris Removal Project City/County: Yuba County Sampling Date: 1/21/2021

Applicant/Owner: Yuba Water Agency State: CA Sampling Point: 2

Investigator(s): Keith Kwan Section, Township, Range: S.14 T.16N R.06E

Landform (hillslope, terrace, etc.): gentle slope/shoreline Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): C Lat: 39.24300027 Long: -121.273488797 Datum: NAD83

Soil Map Unit Name: 116-Auburn-Sobrante complex, gravelly, 30 to 50 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

this location is above the OHWM of Englebright Reservoir

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is $\leq 3.0^1$

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

there is no vegetation at this location

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR4/3	100					sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

ATTACHMENT C

Plant Species Observed Onsite

Attachment C. Plant Observed Onsite (January 21, 2021)

Scientific Name	Common Name	Wetland Indicator Status
Achillea millefolium	Common yarrow	FACU
*Andropogon virginicus**	Broomsedge bluestem	FAC
Arctostaphylos viscida	Manzanita	N/L
Avena species*	Wild oat	N/L
*Bromus diandrus**	Ripgut brome	N/L
*Centaurea solstitialis**	Yellow star-thistle	N/L
Cephalanthus occidentalis	Common buttonbush	OBL
*Cynodon dactylon**	Bermuda grass	FACU
*Cynosurus echinatus**	Hedgehog dog-tail grass	N/L
Dudleya cymosa	Rock lettuce	N/L
Eschscholzia californica	California poppy	N/L
Galium aparine	Goose grass	FACU
*Geranium molle**	Hairy geranium	N/L
Heteromeles arbutifolia	Toyon	N/L
*Hypochaeris glabra**	Smooth cat's-ear	N/L
Juncus balticus ssp. *ater*	Baltic rush	FACW
Juncus effusus	Soft rush	FACW
*Mentha pulegium**	Pennyroyal	OBL
Phoradendron serotinum	Oak mistletoe	N/L
Pinus ponderosa	Ponderosa pine	FACU
Pinus sabiniana	Gray pine	N/L
Quercus chrysolepis	Canyon live oak	N/L
Quercus douglasii	Blue oak	N/L
Quercus wislizeni	Interior live oak	N/L
*Rubus armeniacus**	Himalayan blackberry	FAC
*Senecio vulgaris**	Common groundsel	FACU
*Silybum marianum**	Milk thistle	N/L
Stipa species	Needle grass	N/L
Toxicodendron diversilobum	Poison oak	FACU
*Trifolium hirtum**	Rose clover	N/L
Typha latifolia	Broad-leaf cattail	OBL
*Verbascum thapsus**	Common mullein	FACU
*Verbena bonariensis**	South American vervain	FACW

* Non-native Species

Wetland Status Codes:

OBL - Obligate Wetland; Almost always occur in wetlands

FACW - Facultative Wetland; Usually occur in wetlands, but may occur in non-wetlands

FAC - Facultative; Occur in wetlands and non-wetlands

FACU - Facultative Upland; Usually occur in non-wetlands, but may occur in wetlands

UPL - Obligate Upland; Almost never occur in wetlands

N/L - Plants that are Not Listed; Does not occur in wetlands in any region

ATTACHMENT D

Representative Site Photographs

Photo 1. Access Road Leading to Boat Launch Area, facing NW, January 21, 2021

Photo 2. Boat Launch Area, facing NW, January 21, 2021

Photo 3. Debris Stockpile Area, facing E, January 21, 2021

Photo 4. Intake Structure, facing NE, January 21, 2021

ATTACHMENT E

USACE ORM Aquatic Resources Table

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	NWPR_Determine_Code	Latitude	Longitude
RES-1	CALIFORNIA	L1	LACUSTRINF	Area	0.069	ACRE	DELINC			
RES-2	CALIFORNIA	L1	LACUSTRINF	Area	0.072	ACRE	DELINC			

ATTACHMENT F

Wetland Delineation Shape File
(to be included with USACE submittal only)

APPENDIX C

Greenhouse Gases CalEEMod Model Outputs

Narrows 2 Burning Option

Yuba County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.67	Acre	1.67	72,745.20	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	72
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Total Days = 30 per Project Applicant. Demolition and Material Hauling phases conducted simulataneously

Off-road Equipment - Off-Highway Trucks = Dump Trucks for debris removal

Off-road Equipment -

Trips and VMT - Worker trips accounts for 10 workers/day with 2 trips per worker/day. 24 Hauling trips accounts for the # of trips needed to move 175 cubic yards of debris to storage/staging area 250 feet.

Vehicle Trips - Construction only

Fleet Mix - Construction only

Narrows 2 Burning Option - Yuba County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	250	0
tblAreaCoating	Area_Parking	4365	0
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	20.00	30.00
tblFleetMix	HHD	0.02	0.00
tblFleetMix	LDA	0.62	1.00
tblFleetMix	LDT1	0.03	0.00
tblFleetMix	LDT2	0.17	0.00
tblFleetMix	LHD1	0.03	0.00
tblFleetMix	LHD2	5.2950e-003	0.00
tblFleetMix	MCY	5.6270e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	8.5200e-004	0.00
tblFleetMix	MHD	8.0940e-003	0.00
tblFleetMix	OBUS	1.6960e-003	0.00
tblFleetMix	SBUS	1.1250e-003	0.00
tblFleetMix	UBUS	1.9240e-003	0.00
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

tblTripsAndVMT	HaulingTripLength	20.00	0.05
tblTripsAndVMT	HaulingTripNumber	0.00	24.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0289	0.2615	0.1858	5.6000e-004	3.6700e-003	0.0104	0.0141	9.8000e-004	9.6000e-003	0.0106	0.0000	49.6534	49.6534	0.0152	0.0000	50.0324
Maximum	**0.0289**	**0.2615**	**0.1858**	**5.6000e-004**	**3.6700e-003**	**0.0104**	**0.0141**	**9.8000e-004**	**9.6000e-003**	**0.0106**	**0.0000**	**49.6534**	**49.6534**	**0.0152**	**0.0000**	**50.0324**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0289	0.2615	0.1858	5.6000e-004	3.6700e-003	0.0104	0.0141	9.8000e-004	9.6000e-003	0.0106	0.0000	49.6534	49.6534	0.0152	0.0000	50.0324
Maximum	**0.0289**	**0.2615**	**0.1858**	**5.6000e-004**	**3.6700e-003**	**0.0104**	**0.0141**	**9.8000e-004**	**9.6000e-003**	**0.0106**	**0.0000**	**49.6534**	**49.6534**	**0.0152**	**0.0000**	**50.0324**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2021	9-30-2021	0.2074	0.2074
		Highest	0.2074	0.2074

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7000e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.7000e-003**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7000e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.7000e-003**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Material Hauling	Grading	9/1/2021	10/12/2021	5	30	
2	Debris Removal	Demolition	9/1/2021	10/12/2021	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.67

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating - sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Material Hauling	Off-Highway Trucks	1	8.00	402	0.38
Debris Removal	Cranes	1	8.00	231	0.29
Debris Removal	Off-Highway Trucks	1	8.00	402	0.38
Debris Removal	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Material Hauling	1	0.00	0.00	24.00	16.80	6.60	0.05	LD_Mix	HDT_Mix	HHDT
Debris Removal	3	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Material Hauling - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0900e-003	0.0790	0.0541	2.0000e-004		2.9000e-003	2.9000e-003		2.6600e-003	2.6600e-003	0.0000	17.3979	17.3979	5.6300e-003	0.0000	17.5385
Total	**9.0900e-003**	**0.0790**	**0.0541**	**2.0000e-004**	**0.0000**	**2.9000e-003**	**2.9000e-003**	**0.0000**	**2.6600e-003**	**2.6600e-003**	**0.0000**	**17.3979**	**17.3979**	**5.6300e-003**	**0.0000**	**17.5385**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.1000e-003	2.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1052	0.1052	1.0000e-005	0.0000	0.1055
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0000e-005**	**1.1000e-003**	**2.2000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.1052**	**0.1052**	**1.0000e-005**	**0.0000**	**0.1055**

3.2 Material Hauling - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0900e-003	0.0790	0.0541	2.0000e-004		2.9000e-003	2.9000e-003		2.6600e-003	2.6600e-003	0.0000	17.3978	17.3978	5.6300e-003	0.0000	17.5385
Total	**9.0900e-003**	**0.0790**	**0.0541**	**2.0000e-004**	**0.0000**	**2.9000e-003**	**2.9000e-003**	**0.0000**	**2.6600e-003**	**2.6600e-003**	**0.0000**	**17.3978**	**17.3978**	**5.6300e-003**	**0.0000**	**17.5385**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.1000e-003	2.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1052	0.1052	1.0000e-005	0.0000	0.1055
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0000e-005**	**1.1000e-003**	**2.2000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.1052**	**0.1052**	**1.0000e-005**	**0.0000**	**0.1055**

3.3 Debris Removal - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0181	0.1799	0.1177	3.3000e-004		7.5100e-003	7.5100e-003		6.9100e-003	6.9100e-003	0.0000	29.1162	29.1162	9.4200e-003	0.0000	29.3516
Total	**0.0181**	**0.1799**	**0.1177**	**3.3000e-004**		**7.5100e-003**	**7.5100e-003**		**6.9100e-003**	**6.9100e-003**	**0.0000**	**29.1162**	**29.1162**	**9.4200e-003**	**0.0000**	**29.3516**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7100e-003	1.4900e-003	0.0138	3.0000e-005	3.6700e-003	2.0000e-005	3.6900e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	3.0341	3.0341	1.1000e-004	0.0000	3.0368
Total	**1.7100e-003**	**1.4900e-003**	**0.0138**	**3.0000e-005**	**3.6700e-003**	**2.0000e-005**	**3.6900e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**3.0341**	**3.0341**	**1.1000e-004**	**0.0000**	**3.0368**

3.3 Debris Removal - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0181	0.1799	0.1177	3.3000e-004		7.5100e-003	7.5100e-003		6.9100e-003	6.9100e-003	0.0000	29.1162	29.1162	9.4200e-003	0.0000	29.3516
Total	**0.0181**	**0.1799**	**0.1177**	**3.3000e-004**		**7.5100e-003**	**7.5100e-003**		**6.9100e-003**	**6.9100e-003**	**0.0000**	**29.1162**	**29.1162**	**9.4200e-003**	**0.0000**	**29.3516**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7100e-003	1.4900e-003	0.0138	3.0000e-005	3.6700e-003	2.0000e-005	3.6900e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	3.0341	3.0341	1.1000e-004	0.0000	3.0368
Total	**1.7100e-003**	**1.4900e-003**	**0.0138**	**3.0000e-005**	**3.6700e-003**	**2.0000e-005**	**3.6900e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**3.0341**	**3.0341**	**1.1000e-004**	**0.0000**	**3.0368**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.7000e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	4.7000e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.7000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.7000e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.7000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**4.7000e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Narrows 2 Debris Removal

Yuba County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.67	Acre	1.67	72,745.20	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	72
Climate Zone	3			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Total Days = 30 per Project Applicant. Demolition and Material Hauling phases conducted simulataneously

Off-road Equipment - Equipment list updated to match information per Project Applicant

Off-road Equipment - Off-Highway Trucks = Dump Trucks for debris removal

Grading - 175 cubic yards of soil per Project Applicant to be removed from site

Trips and VMT - # Trips accounts for 10 workers onsite per day for Demo phase, total of 24 trips estimated for hauling of debri (estimated 12 trips to and from landfill), 37 miles from Project site to Ostrom Landfill

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	PhaseEndDate	9/28/2021	10/12/2021
tblGrading	AcresOfGrading	0.00	11.25
tblGrading	MaterialExported	0.00	175.00
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Dumpers/Tenders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	37.00
tblTripsAndVMT	HaulingTripNumber	22.00	24.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0386	0.3456	0.2443	7.9000e-004	0.0109	0.0134	0.0243	1.9700e-003	0.0123	0.0143	0.0000	69.2976	69.2976	0.0208	0.0000	69.8180
Maximum	**0.0386**	**0.3456**	**0.2443**	**7.9000e-004**	**0.0109**	**0.0134**	**0.0243**	**1.9700e-003**	**0.0123**	**0.0143**	**0.0000**	**69.2976**	**69.2976**	**0.0208**	**0.0000**	**69.8180**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0386	0.3456	0.2443	7.9000e-004	0.0109	0.0134	0.0243	1.9700e-003	0.0123	0.0143	0.0000	69.2975	69.2975	0.0208	0.0000	69.8179
Maximum	**0.0386**	**0.3456**	**0.2443**	**7.9000e-004**	**0.0109**	**0.0134**	**0.0243**	**1.9700e-003**	**0.0123**	**0.0143**	**0.0000**	**69.2975**	**69.2975**	**0.0208**	**0.0000**	**69.8179**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2021	9-30-2021	0.2742	0.2742
		Highest	0.2742	0.2742

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.2300e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.2300e-003**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.2300e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.2300e-003**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2021	10/12/2021	5	30	
2	Material Hauling	Grading	9/1/2021	10/12/2021	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 1.67

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating - sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	8.00	231	0.29
Demolition	Dumpers/Tenders	0	8.00	16	0.38
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Off-Highway Trucks	1	8.00	402	0.38
Material Hauling	Graders	0	6.00	187	0.41
Material Hauling	Rubber Tired Dozers	0	6.00	247	0.40
Material Hauling	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Material Hauling	Off-Highway Trucks	2	8.00	402	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Material Hauling	2	5.00	0.00	24.00	16.80	6.60	37.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0181	0.1801	0.1177	3.3000e-004		7.5300e-003	7.5300e-003		6.9200e-003	6.9200e-003	0.0000	29.0956	29.0956	9.4100e-003	0.0000	29.3309
Total	**0.0181**	**0.1801**	**0.1177**	**3.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9200e-003**	**6.9200e-003**	**0.0000**	**29.0956**	**29.0956**	**9.4100e-003**	**0.0000**	**29.3309**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7100e-003	1.4900e-003	0.0138	3.0000e-005	3.6700e-003	2.0000e-005	3.6900e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	3.0341	3.0341	1.1000e-004	0.0000	3.0368
Total	**1.7100e-003**	**1.4900e-003**	**0.0138**	**3.0000e-005**	**3.6700e-003**	**2.0000e-005**	**3.6900e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**3.0341**	**3.0341**	**1.1000e-004**	**0.0000**	**3.0368**

3.2 Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0181	0.1801	0.1177	3.3000e-004		7.5300e-003	7.5300e-003		6.9200e-003	6.9200e-003	0.0000	29.0956	29.0956	9.4100e-003	0.0000	29.3308
Total	**0.0181**	**0.1801**	**0.1177**	**3.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9200e-003**	**6.9200e-003**	**0.0000**	**29.0956**	**29.0956**	**9.4100e-003**	**0.0000**	**29.3308**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7100e-003	1.4900e-003	0.0138	3.0000e-005	3.6700e-003	2.0000e-005	3.6900e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	3.0341	3.0341	1.1000e-004	0.0000	3.0368
Total	**1.7100e-003**	**1.4900e-003**	**0.0138**	**3.0000e-005**	**3.6700e-003**	**2.0000e-005**	**3.6900e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**3.0341**	**3.0341**	**1.1000e-004**	**0.0000**	**3.0368**

3.3 Material Hauling - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.9800e-003	0.0000	5.9800e-003	6.5000e-004	0.0000	6.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0182	0.1579	0.1081	4.0000e-004		5.7900e-003	5.7900e-003		5.3300e-003	5.3300e-003	0.0000	34.7957	34.7957	0.0113	0.0000	35.0770
Total	**0.0182**	**0.1579**	**0.1081**	**4.0000e-004**	**5.9800e-003**	**5.7900e-003**	**0.0118**	**6.5000e-004**	**5.3300e-003**	**5.9800e-003**	**0.0000**	**34.7957**	**34.7957**	**0.0113**	**0.0000**	**35.0770**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	5.6600e-003	1.1600e-003	2.0000e-005	3.7000e-004	3.0000e-005	4.0000e-004	1.0000e-004	3.0000e-005	1.3000e-004	0.0000	1.6136	1.6136	2.0000e-005	0.0000	1.6141
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.7000e-004	3.4600e-003	1.0000e-005	9.2000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7585	0.7585	3.0000e-005	0.0000	0.7592
Total	**5.8000e-004**	**6.0300e-003**	**4.6200e-003**	**3.0000e-005**	**1.2900e-003**	**4.0000e-005**	**1.3200e-003**	**3.4000e-004**	**4.0000e-005**	**3.8000e-004**	**0.0000**	**2.3722**	**2.3722**	**5.0000e-005**	**0.0000**	**2.3733**

3.3 Material Hauling - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.9800e-003	0.0000	5.9800e-003	6.5000e-004	0.0000	6.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0182	0.1579	0.1081	4.0000e-004		5.7900e-003	5.7900e-003		5.3300e-003	5.3300e-003	0.0000	34.7957	34.7957	0.0113	0.0000	35.0770
Total	**0.0182**	**0.1579**	**0.1081**	**4.0000e-004**	**5.9800e-003**	**5.7900e-003**	**0.0118**	**6.5000e-004**	**5.3300e-003**	**5.9800e-003**	**0.0000**	**34.7957**	**34.7957**	**0.0113**	**0.0000**	**35.0770**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	5.6600e-003	1.1600e-003	2.0000e-005	3.7000e-004	3.0000e-005	4.0000e-004	1.0000e-004	3.0000e-005	1.3000e-004	0.0000	1.6136	1.6136	2.0000e-005	0.0000	1.6141
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.7000e-004	3.4600e-003	1.0000e-005	9.2000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7585	0.7585	3.0000e-005	0.0000	0.7592
Total	**5.8000e-004**	**6.0300e-003**	**4.6200e-003**	**3.0000e-005**	**1.2900e-003**	**4.0000e-005**	**1.3200e-003**	**3.4000e-004**	**4.0000e-005**	**3.8000e-004**	**0.0000**	**2.3722**	**2.3722**	**5.0000e-005**	**0.0000**	**2.3733**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.623397	0.028959	0.171958	0.109598	0.026189	0.005295	0.008094	0.015285	0.001696	0.001924	0.005627	0.001125	0.000852

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.2300e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	7.2300e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.5300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.7000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**7.2300e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.5300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.7000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**7.2300e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Project Marine Vessels Greenhouse Gas Emissions

Narrows 2 Debris Removal Project

Marine Vessel	Pollutant	Emission Rate (Tons/Day)	Total Pounds Daily	Total Metric Tons Annually[1]
CHC - AE Others (Rescue)	**CO2e**	0.0053	**10.70**	**0.15**

[1] Anuual GHG Emissions are based on 30 work days per year.
All emission factors sourced from OFFROAD 2017.

APPENDIX D

Preliminary Soil Screening Analysis

November 16, 2020

Mr. Jacob Vander Meulen
Environmental Compliance Officer
Yuba Water Agency
Colgate Power House
12700 Lake Francis Road
Dobbins, CA 95935-0176

SUBJECT: ***Laboratory Analytical Results for Sediment Samples Collected at the Narrows 2 Powerhouse Intake on October 27, 2020.***

Dear Mr. Vander Meulen,

The purpose of this letter report is to document the results of the laboratory analytical results for sediment samples collected from Lake Englebright immediately upstream of the Narrows 2 Powerhouse Intake on October 27, 2020. These results are intended to provide background information for environmental permitting for the Yuba Water Agency's (YWA) planned activities to clear debris that has deposited in front of the Narrows 2 Powerhouse intake, located immediately upstream of the U.S. Army Corps of Engineer's (USACE) Englebright Dam in September 2021.

METHODS

Collection of Sediment and Water Samples

On October 27, 2020, ECORP biologist Daniel Wong collected sediment and water samples from the benthos at two (2) sampling locations in front of the Narrows 2 Powerhouse intake. Sediment samples were retrieved from the benthos using a remote operated vehicle (ROV) operated by ASI Marine. At each sampling location, the ROV scooped sediment samples from the upper 12 inches of the benthos and brought them to the surface, where Mr. Wong placed the sediment samples into one (1) 8-oz glass jar provided by California Laboratory Services (CLS, Rancho Cordova, CA), the analytical laboratory used for sediment analyses. In addition, water from the sediment samples was funneled into a clean 1-L polyurethane bottle containing a small amount of hydrochloric acid (HCl) provided by CLS for methylmercury (MeHg) analyses. These sample bottles were immediately placed in a cooler with bagged ice for transport and delivery. Samples were delivered to CLS under chain-of-custody on October 27, 2020 (i.e., the same day as sample collection). All samples were collected using fresh nitrile gloves and all standard procedures were implemented to avoid cross-contamination of samples.

Analytical Methods

Sediment samples were analyzed by CLS for the following categories of pollutants and methodologies (in parentheses):

- CAM 17 metals (EPA Method 6000/7000);
- Chlorinated herbicides (EPA Method 8151A);

2525 Warren Drive ● Rocklin, CA 95677 ● Tel: (916) 782-9100 ● Fax: (916) 782-9134 ● www.ecorpconsulting.com

- Organochlorine pesticides (OC Pesticides; EPA Method 8081A);
- Semi-volatile Organics (SVOCs; EPA Method 8270C); and
- Volatile Organic Compounds (VOCs; EPA 8260B).

Water samples were sent to Basic Laboratory (Chico, CA) for low-level MeHg analyses using EPA Method 245.1.

Analytical Results

Analytical results and associated reporting limits and quality control measures for all sediment and water quality assessments are provided in Attachment A and summarized below.

CAM 17 Metals: antimony, beryllium, cadmium, mercury (elemental), molybdenum, selenium, silver, and thallium were not detected at concentrations equal to or greater than laboratory reporting limits in either of the samples tested (i.e., all were non-detectable [ND]). The concentrations of metals that were detected in both samples are summarized in Table 1.

Table 1. Concentrations of Metals Detected in Two Sediment Samples Collected from Englebright Lake on October 27, 2020

Analyte	Concentration (mg/kg)	
	Sample 1	Sample 2
Arsenic	5.0	5.4
Barium	36	44
Chromium	15	19
Cobalt	5.1	6.0
Copper	16	20
Lead	3.0	3.7
Nickel	18	22
Vanadium	22	26
Zinc	17	20

Chlorinated Herbicides: no chlorinated herbicides were detected at concentrations equal to or greater than laboratory reporting limits in either of the samples tested (i.e., all were ND).

Organochlorine pesticides: no OC pesticides were detected at concentrations equal to or greater than laboratory reporting limits in either of the samples tested (i.e., all were ND).

Semi-volatile Organics: no SVOCs were detected at concentrations equal to or greater than laboratory reporting limits in either of the samples tested (i.e., all were ND).

Volatile Organic Compounds: no VOCs were detected at concentrations equal to or greater than laboratory reporting limits in either of the samples tested (i.e., all were ND).

Methylmercury: MeHg was detected in sample one at a concentration of 0.951 ng/l and in sample two at a concentration of 1.18 ng/l.

SUMMARY OF FINDINGS

As summarized above, no chlorinated herbicides, OC pesticides, SVOCs, or VOCs were detected in the two samples collected from Englebright Lake in front of the Narrows 2 Powerhouse intake on October 27, 2020. In additional, eight (8) of the CAM 17 metals were not detected. However, a total of nine (9) CAM 17 metals plus MeHg were detected in both samples. The results of these analyses are anticipated be used to inform environmental documentation and permitting.

If you have any questions regarding the content of this letter report, please contact me at (916) 782-9100.

Sincerely,

David Thomas
Senior Fisheries Biologist
ECORP Consulting, Inc.

ATTACHMENT A

CLS and Basic Laboratory Analytical Results for Samples Collected from Englebright Lake on October 27, 2020

CALIFORNIA LABORATORY SERVICES
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November 09, 2020

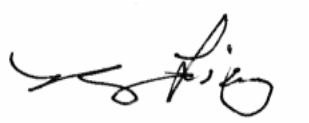
CLS Work Order #: 20J1511
COC #: 211731

Dave Thomas
ECORP Consulting, Inc.
2525 Warren Dr.
Rocklin, CA 95677

Project Name: YWA Narrows

Enclosed are the results of analyses for samples received by the laboratory on 10/27/20 16:22. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that the results are in compliance both technically and for completeness.

Analytical results are attached to this letter. Please call if we can provide additional assistance.



James Liang, Ph.D.
Laboratory Director

CA SWRCB ELAP Accreditation/Registration number 1233

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CHAIN OF CUSTODY

CLS ID No.: 201511 LOG № 211731

HIGHLIGHTED AREAS MUST BE FILLED OUT PRIOR TO ACCEPTANCE

REPORT TO:

NAME AND ADDRESS: ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, CA 95677
PROJECT MANAGER: Dave Thomas PHONE#: 916-782-9100
PROJECT NAME: WA Narrows
SAMPLED BY:
JOB DESCRIPTION:
SITE LOCATION:

CLIENT JOB NUMBER:

DESTINATION LABORATORY:
☐ CLS (916) 638-7301
3249 FITZGERALD RD.
RANCHO CORDOVA, CA.
95742
☐ OTHER

GEOTRACKER:
EDF REPORT ☐ YES ☐ NO
GLOBAL ID:

CDPH WRITE ON EDT TRANSMISSION? ☐ YES ☐ NO
STATE SYSTEM NUMBER
IF "YES" PLEASE ENTER THE SOURCE NUMBER(S).

COMPOSITE:

DATE	TIME	SAMPLE IDENTIFICATION	MATRIX	CONTAINER NO.	CONTAINER TYPE	PRESERVATIVES	EPA 6000/7000 CAM17	EPA 8081	EPA 8151	EPA 8260B	EPA 8270C	EPA 245.1	TURN AROUND TIME 1 DAY	2 DAY	3 DAY	5 DAY	SPECIAL INSTRUCTIONS OR ALT. ID:
10/27	1233	01	S	2	8oz		X	X	X	X	X					X	
10/27	1233	02	W	1		1						X					→ 10 Day
10/27	1245	03	S	2	8oz		X	X	X	X	X					X	
10/27	1245	04	W	1		1						X					→ 10 Day

INVOICE TO:
P.O. #
QUOTE #

Email/Address: DThomas@ecorpconsulting.com

PRESERVATIVES: (1) HCL (2) HNO_3 (3) = COLD (4) = NaOH (5) = H_2SO_4 (6) = $Na_2S_2O_3$ (7) =

RELINQUISHED BY (SIGN)	PRINT NAME / COMPANY	DATE / TIME	RECEIVED BY (SIGN)	PRINT NAME / COMPANY
Daniel Wang	Daniel Wang / ECORP	10/27 1622		

RECD AT LAB BY: Les DATE / TIME: 10/27/2020 1622 CONDITIONS / COMMENTS: 1.4

SHIPPED BY: ☐ FED X ☐ UPS ☐ OTHER AIR BILL #

White-Lab/Terms and conditions Yellow- Lab file copy/Terms and Conditions Pink- Origin/Terms and Conditions Gold-Project Mgr./Field Sampler/Terms and conditions

20J1511

Matt Yost

From: Dave Thomas <dthomas@ecorpconsulting.com>
Sent: Friday, October 23, 2020 10:28 AM
To: Matt Yost
Cc: Daniel Wong; Emily Mecke
Subject: RE: CLS - Sediment Analysis

Thanks Matt! If we need to collect the water samples for methyl mercury, that should be fine. Just let us know.

Thanks,

Dave

David A. Thomas, M.S. ♦ Senior Aquatic Biologist/Project Manager ♦ ECORP Consulting, Inc.
dthomas@ecorpconsulting.com ♦ Ph: 916.782.9100 ♦ www.ecorpconsulting.com
Rocklin ♦ Redlands ♦ Santa Ana ♦ San Diego ♦ Chico ♦ Santa Fe, NM
Federal Small Business (SB) ♦ California Small Business for Public Works (SB-PW)

From: Matt Yost <matty@californialab.com>
Sent: Friday, October 23, 2020 9:35 AM
To: Dave Thomas <dthomas@ecorpconsulting.com>
Cc: Daniel Wong <dwong@ecorpconsulting.com>; Emily Mecke <emecke@ecorpconsulting.com>
Subject: RE: CLS - Sediment Analysis

Good morning,

Thank you for reaching back out to us. We'll have your containers, COCs, labels and a cooler ready for you to pick up Monday morning. Two 8oz jars per sample site will cover all your requested analyses and any potential additional analyses that may be required (STLC/TCLP inorganics.)

I recall digging around for some information regarding Methyl Mercury for soil as that is not a common request and I'm uncertain we have a relationship with a subcontract lab that offers that service. Our normal subcontract lab does not have the capability to analyze Methyl Mercury in soil, only water. I'll reach back out and inquire about a lab that may be able to provide insight.

In the meantime, please let me know if you have any additional questions about reporting, logistics or anything else.

Matt Yost
Client Services
California Laboratory Services
3249 Fitzgerald Rd.
Rancho Cordova, 95742
800.638.7301 Ext. 115 (Office)
916.638.4510 (Fax)
matty@californialab.com
www.californialab.com

20J1511

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QUOTE REQUEST

Date: 5/28/2020

Quote: ECORP2020

Name: ECORP Consulting, Inc.
Project Name: Sediment Analysis
Project Manager: Dave Thomas

Location: CA
Effective: 5/28/2020
Expires: 12/31/2020

QC Level: 1

Parameter	Method	Matrix	TAT	QTY	Unit Price	Extended Price
CAM17 Metals*	EPA 6000/7000	S	5	1	$148.00	$148.00
Pesticides	EPA 8081	S	5	1	$86.00	$86.00
Herbicides	EPA 8151	S	5	1	$195.00	$195.00
VOCs	EPA 8260B	S	5	1	$110.00	$110.00
SVOCs	EPA 8270C	S	5	1	$245.00	$245.00
Methyl Mercury	**EPA 245.1**	**W**	**10**	**1**	**$250.00**	**$250.00**
Sample Disposal	CLS Labs	S/W	60	1	$2.00	$2.00
TOTAL						**$1,036.00**

Bold - Subcontracted Analyses
*CAM17 - As, Hg, Sb, Ba, Be, Cd, Cr, Co, Cu, Pb, Mo, Ni, Se, Ag, Tl, V, Zn

Warmest regards,

Matt Yost

Matt Yost
Client Services

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Client Services: matty@californialab.com

ECORP Consulting, Inc.
2525 Warren Dr.
Rocklin, CA 95677

Project: YWA Narrows
Project Number: [none]
Project Manager: Dave Thomas

CLS Work Order #: 20J1511
COC #: 211731

CAM 17 Metals

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
01 (20J1511-01) Soil Sampled: 10/27/20 12:33 Received: 10/27/20 16:22									
Antimony	ND	5.0	mg/kg	10	2008811	10/28/20	10/28/20	EPA 6020	
Arsenic	**5.0**	2.0	"	"	"	"	"	"	
Barium	**36**	1.0	"	1	"	"	10/28/20	EPA 6010B	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	1.0	"	10	"	"	10/28/20	EPA 6020	
Chromium	**15**	1.0	"	1	"	"	10/28/20	EPA 6010B	
Cobalt	**5.1**	1.0	"	"	"	"	"	"	
Copper	**16**	2.0	"	10	"	"	10/28/20	EPA 6020	
Lead	**3.0**	2.5	"	1	"	"	10/28/20	EPA 6010B	
Mercury	ND	0.10	"	"	2008813	10/28/20	10/28/20	EPA 7471A	
Molybdenum	ND	1.0	"	"	2008811	10/28/20	10/28/20	EPA 6010B	
Nickel	**18**	1.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	10	"	"	10/28/20	EPA 6020	
Silver	ND	1.0	"	1	"	"	10/28/20	EPA 6010B	
Thallium	ND	2.0	"	10	"	"	10/28/20	EPA 6020	
Vanadium	**22**	1.0	"	1	"	"	10/28/20	EPA 6010B	
Zinc	**17**	1.0	"	"	"	"	"	"	
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
Antimony	ND	5.0	mg/kg	10	2008811	10/28/20	10/28/20	EPA 6020	
Arsenic	**5.4**	2.0	"	"	"	"	"	"	
Barium	**44**	1.0	"	1	"	"	10/28/20	EPA 6010B	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	1.0	"	10	"	"	10/28/20	EPA 6020	
Chromium	**19**	1.0	"	1	"	"	10/28/20	EPA 6010B	
Cobalt	**6.0**	1.0	"	"	"	"	"	"	
Copper	**20**	2.0	"	10	"	"	10/28/20	EPA 6020	
Lead	**3.7**	2.5	"	1	"	"	10/28/20	EPA 6010B	
Mercury	ND	0.10	"	"	2008813	10/28/20	10/28/20	EPA 7471A	
Molybdenum	ND	1.0	"	"	2008811	10/28/20	10/28/20	EPA 6010B	
Nickel	**22**	1.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	10	"	"	10/28/20	EPA 6020	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

CAM 17 Metals

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
Silver	ND	1.0	mg/kg	1	2008811	"	10/28/20	EPA 6010B	
Thallium	ND	2.0	"	10	"	"	10/28/20	EPA 6020	
Vanadium	**26**	1.0	"	1	"	"	10/28/20	EPA 6010B	
Zinc	**20**	1.0	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Chlorinated Herbicides by EPA Method 8151A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
01 (20J1511-01) Soil Sampled: 10/27/20 12:33 Received: 10/27/20 16:22									
2,4,5-T	ND	0.010	mg/kg	1	2008894	10/30/20	11/02/20	EPA 8151A	
2,4,5-TP (Silvex)	ND	0.010	"	"	"	"	"	"	
2,4-D (2,4-Dichlorophenoxyacetic acid)	ND	0.050	"	"	"	"	"	"	
2,4-DB	ND	0.10	"	"	"	"	"	"	
Dalapon	ND	1.0	"	"	"	"	"	"	
Dicamba	ND	0.010	"	"	"	"	"	"	
Dichloroprop	ND	0.10	"	"	"	"	"	"	
Dinoseb	ND	0.010	"	"	"	"	"	"	
MCPA	ND	2.0	"	"	"	"	"	"	
MCPP	ND	2.0	"	"	"	"	"	"	
Pentachlorophenol	ND	0.010	"	"	"	"	"	"	
Surrogate: 2,4-DCAA		*202 %*		*50-150*		"	"	"	*QS-4*
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
2,4,5-T	ND	0.010	mg/kg	1	2008894	10/30/20	11/02/20	EPA 8151A	
2,4,5-TP (Silvex)	ND	0.010	"	"	"	"	"	"	
2,4-D (2,4-Dichlorophenoxyacetic acid)	ND	0.050	"	"	"	"	"	"	
2,4-DB	ND	0.10	"	"	"	"	"	"	
Dalapon	ND	1.0	"	"	"	"	"	"	
Dicamba	ND	0.010	"	"	"	"	"	"	
Dichloroprop	ND	0.10	"	"	"	"	"	"	
Dinoseb	ND	0.010	"	"	"	"	"	"	
MCPA	ND	2.0	"	"	"	"	"	"	
MCPP	ND	2.0	"	"	"	"	"	"	
Pentachlorophenol	ND	0.010	"	"	"	"	"	"	
Surrogate: 2,4-DCAA		*140 %*		*50-150*		"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
01 (20J1511-01) Soil Sampled: 10/27/20 12:33 Received: 10/27/20 16:22									
4,4´-DDD	ND	3.3	µg/kg	1	2008784	10/28/20	10/28/20	EPA 8081A	
4,4´-DDE	ND	3.3	"	"	"	"	"	"	
4,4´-DDT	ND	3.3	"	"	"	"	"	"	
Aldrin	ND	1.0	"	"	"	"	"	"	
alpha-BHC	ND	1.7	"	"	"	"	"	"	
beta-BHC	ND	1.7	"	"	"	"	"	"	
Chlordane-technical	ND	3.3	"	"	"	"	"	"	
delta-BHC	ND	1.7	"	"	"	"	"	"	
Dieldrin	ND	1.0	"	"	"	"	"	"	
Endosulfan I	ND	1.7	"	"	"	"	"	"	
Endosulfan II	ND	3.3	"	"	"	"	"	"	
Endosulfan sulfate	ND	3.3	"	"	"	"	"	"	
Endrin	ND	3.3	"	"	"	"	"	"	
Endrin aldehyde	ND	3.3	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	1.7	"	"	"	"	"	"	
Heptachlor	ND	1.7	"	"	"	"	"	"	
Heptachlor epoxide	ND	1.7	"	"	"	"	"	"	
Methoxychlor	ND	17	"	"	"	"	"	"	
Mirex	ND	3.3	"	"	"	"	"	"	
Toxaphene	ND	20	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*108 %*	*52-141*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*67 %*	*46-139*		"	"	"	"	
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
4,4´-DDD	ND	3.3	µg/kg	1	2008784	10/28/20	10/28/20	EPA 8081A	
4,4´-DDE	ND	3.3	"	"	"	"	"	"	
4,4´-DDT	ND	3.3	"	"	"	"	"	"	
Aldrin	ND	1.0	"	"	"	"	"	"	
alpha-BHC	ND	1.7	"	"	"	"	"	"	
beta-BHC	ND	1.7	"	"	"	"	"	"	
Chlordane-technical	ND	3.3	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
delta-BHC	ND	1.7	µg/kg	1	2008784	"	10/28/20	EPA 8081A	
Dieldrin	ND	1.0	"	"	"	"	"	"	
Endosulfan I	ND	1.7	"	"	"	"	"	"	
Endosulfan II	ND	3.3	"	"	"	"	"	"	
Endosulfan sulfate	ND	3.3	"	"	"	"	"	"	
Endrin	ND	3.3	"	"	"	"	"	"	
Endrin aldehyde	ND	3.3	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	1.7	"	"	"	"	"	"	
Heptachlor	ND	1.7	"	"	"	"	"	"	
Heptachlor epoxide	ND	1.7	"	"	"	"	"	"	
Methoxychlor	ND	17	"	"	"	"	"	"	
Mirex	ND	3.3	"	"	"	"	"	"	
Toxaphene	ND	20	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*100 %*	*52-141*		"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*64 %*	*46-139*		"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
01 (20J1511-01) Soil Sampled: 10/27/20 12:33 Received: 10/27/20 16:22									
1,2,4-Trichlorobenzene	ND	330	µg/kg	1	2008804	10/28/20	10/28/20	EPA 8270C	
1,2-Dichlorobenzene	ND	330	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	330	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	330	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	330	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	330	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	330	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	330	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	830	"	"	"	"	"	"	
2,4-Dinitrotoluene (2,4-DNT)	ND	330	"	"	"	"	"	"	
2,6-Dinitrotoluene (2,6-DNT)	ND	330	"	"	"	"	"	"	
2-Chloronaphthalene	ND	330	"	"	"	"	"	"	
2-Chlorophenol	ND	330	"	"	"	"	"	"	
2-Methylnaphthalene	ND	330	"	"	"	"	"	"	
2-Methylphenol	ND	330	"	"	"	"	"	"	
2-Nitroaniline	ND	830	"	"	"	"	"	"	
2-Nitrophenol	ND	330	"	"	"	"	"	"	
3 & 4-Methylphenol	ND	330	"	"	"	"	"	"	
3,3´-Dichlorobenzidine	ND	670	"	"	"	"	"	"	
3-Nitroaniline	ND	830	"	"	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	830	"	"	"	"	"	"	
4-Bromophenyl phenyl ether	ND	330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	330	"	"	"	"	"	"	
4-Chloroaniline	ND	330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	330	"	"	"	"	"	"	
4-Nitroaniline	ND	830	"	"	"	"	"	"	
4-Nitrophenol	ND	830	"	"	"	"	"	"	
Acenaphthene	ND	330	"	"	"	"	"	"	
Acenaphthylene	ND	330	"	"	"	"	"	"	
Anthracene	ND	330	"	"	"	"	"	"	
Benzo (a) anthracene	ND	330	"	"	"	"	"	"	
Benzo (a) pyrene	ND	330	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
01 (20J1511-01) Soil Sampled: 10/27/20 12:33 Received: 10/27/20 16:22									
Benzo (b) fluoranthene	ND	330	µg/kg	1	2008804	"	10/28/20	EPA 8270C	
Benzo (g,h,i) perylene	ND	330	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	330	"	"	"	"	"	"	
Benzoic acid	ND	830	"	"	"	"	"	"	
Benzyl alcohol	ND	330	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	330	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	330	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	330	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	330	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	330	"	"	"	"	"	"	
Chrysene	ND	330	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	330	"	"	"	"	"	"	
Dibenzofuran	ND	330	"	"	"	"	"	"	
Diethyl phthalate	ND	330	"	"	"	"	"	"	
Dimethyl phthalate	ND	330	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	330	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	330	"	"	"	"	"	"	
Fluoranthene	ND	330	"	"	"	"	"	"	
Fluorene	ND	330	"	"	"	"	"	"	
Hexachlorobenzene	ND	330	"	"	"	"	"	"	
Hexachlorobutadiene	ND	330	"	"	"	"	"	"	
Hexachlorocyclopentadiene	ND	330	"	"	"	"	"	"	
Hexachloroethane	ND	330	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	330	"	"	"	"	"	"	
Isophorone	ND	330	"	"	"	"	"	"	
Naphthalene	ND	330	"	"	"	"	"	"	
Nitrobenzene (NB)	ND	330	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	330	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	330	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	330	"	"	"	"	"	"	
Pentachlorophenol	ND	830	"	"	"	"	"	"	
Phenanthrene	ND	330	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
01 (20J1511-01) Soil Sampled: 10/27/20 12:33 Received: 10/27/20 16:22									
Phenol	ND	330	µg/kg	1	2008804	"	10/28/20	EPA 8270C	
Pyrene	ND	330	"	"	"	"	"	"	
Pyridine	ND	670	"	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*56 %*	*19-122*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*50 %*	*30-115*		"	"	"	"	
Surrogate: 2-Fluorophenol		*52 %*	*25-121*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*48 %*	*23-120*		"	"	"	"	
Surrogate: Phenol-d6		*52 %*	*10-110*		"	"	"	"	
Surrogate: Terphenyl-dl4		*55 %*	*18-137*		"	"	"	"	
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
1,2,4-Trichlorobenzene	ND	330	µg/kg	1	2008804	10/28/20	10/28/20	EPA 8270C	
1,2-Dichlorobenzene	ND	330	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	330	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	330	"	"	"	"	"	"	
2,4,5-Trichlorophenol	ND	330	"	"	"	"	"	"	
2,4,6-Trichlorophenol	ND	330	"	"	"	"	"	"	
2,4-Dichlorophenol	ND	330	"	"	"	"	"	"	
2,4-Dimethylphenol	ND	330	"	"	"	"	"	"	
2,4-Dinitrophenol	ND	830	"	"	"	"	"	"	
2,4-Dinitrotoluene (2,4-DNT)	ND	330	"	"	"	"	"	"	
2,6-Dinitrotoluene (2,6-DNT)	ND	330	"	"	"	"	"	"	
2-Chloronaphthalene	ND	330	"	"	"	"	"	"	
2-Chlorophenol	ND	330	"	"	"	"	"	"	
2-Methylnaphthalene	ND	330	"	"	"	"	"	"	
2-Methylphenol	ND	330	"	"	"	"	"	"	
2-Nitroaniline	ND	830	"	"	"	"	"	"	
2-Nitrophenol	ND	330	"	"	"	"	"	"	
3 & 4-Methylphenol	ND	330	"	"	"	"	"	"	
3,3´-Dichlorobenzidine	ND	670	"	"	"	"	"	"	
3-Nitroaniline	ND	830	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
4,6-Dinitro-2-methylphenol	ND	830	µg/kg	1	2008804	"	10/28/20	EPA 8270C	
4-Bromophenyl phenyl ether	ND	330	"	"	"	"	"	"	
4-Chloro-3-methylphenol	ND	330	"	"	"	"	"	"	
4-Chloroaniline	ND	330	"	"	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	330	"	"	"	"	"	"	
4-Nitroaniline	ND	830	"	"	"	"	"	"	
4-Nitrophenol	ND	830	"	"	"	"	"	"	
Acenaphthene	ND	330	"	"	"	"	"	"	
Acenaphthylene	ND	330	"	"	"	"	"	"	
Anthracene	ND	330	"	"	"	"	"	"	
Benzo (a) anthracene	ND	330	"	"	"	"	"	"	
Benzo (a) pyrene	ND	330	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	330	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	330	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	330	"	"	"	"	"	"	
Benzoic acid	ND	830	"	"	"	"	"	"	
Benzyl alcohol	ND	330	"	"	"	"	"	"	
Bis(2-chloroethoxy)methane	ND	330	"	"	"	"	"	"	
Bis(2-chloroethyl)ether	ND	330	"	"	"	"	"	"	
Bis(2-chloroisopropyl)ether	ND	330	"	"	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	330	"	"	"	"	"	"	
Butyl benzyl phthalate	ND	330	"	"	"	"	"	"	
Chrysene	ND	330	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	330	"	"	"	"	"	"	
Dibenzofuran	ND	330	"	"	"	"	"	"	
Diethyl phthalate	ND	330	"	"	"	"	"	"	
Dimethyl phthalate	ND	330	"	"	"	"	"	"	
Di-n-butyl phthalate	ND	330	"	"	"	"	"	"	
Di-n-octyl phthalate	ND	330	"	"	"	"	"	"	
Fluoranthene	ND	330	"	"	"	"	"	"	
Fluorene	ND	330	"	"	"	"	"	"	
Hexachlorobenzene	ND	330	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
Hexachlorobutadiene	ND	330	µg/kg	1	2008804	"	10/28/20	EPA 8270C	
Hexachlorocyclopentadiene	ND	330	"	"	"	"	"	"	
Hexachloroethane	ND	330	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	330	"	"	"	"	"	"	
Isophorone	ND	330	"	"	"	"	"	"	
Naphthalene	ND	330	"	"	"	"	"	"	
Nitrobenzene (NB)	ND	330	"	"	"	"	"	"	
N-Nitrosodimethylamine	ND	330	"	"	"	"	"	"	
N-Nitrosodi-n-propylamine	ND	330	"	"	"	"	"	"	
N-Nitrosodiphenylamine	ND	330	"	"	"	"	"	"	
Pentachlorophenol	ND	830	"	"	"	"	"	"	
Phenanthrene	ND	330	"	"	"	"	"	"	
Phenol	ND	330	"	"	"	"	"	"	
Pyrene	ND	330	"	"	"	"	"	"	
Pyridine	ND	670	"	"	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol		*78 %*	*19-122*		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		*73 %*	*30-115*		"	"	"	"	
Surrogate: 2-Fluorophenol		*73 %*	*25-121*		"	"	"	"	
Surrogate: Nitrobenzene-d5		*72 %*	*23-120*		"	"	"	"	
Surrogate: Phenol-d6		*72 %*	*10-110*		"	"	"	"	
Surrogate: Terphenyl-dl4		*73 %*	*18-137*		"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
01 (20J1511-01) Soil Sampled: 10/27/20 12:33 Received: 10/27/20 16:22									
1,1,1,2-Tetrachloroethane	ND	5.0	µg/kg	1	2008827	10/28/20	10/28/20	EPA 8260B	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	100	"	"	"	"	"	"	
2-Hexanone	ND	50	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	50	"	"	"	"	"	"	
Acetone	ND	100	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Bromobenzene	ND	5.0	"	"	"	"	"	"	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
01 (20J1511-01) Soil Sampled: 10/27/20 12:33 Received: 10/27/20 16:22									
Bromomethane	ND	10	µg/kg	1	2008827	"	10/28/20	EPA 8260B	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	10	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane (Freon 12)	ND	10	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	20	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
o-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
p-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	5.0	"	"	"	"	"	"	
tert-Butyl alcohol	ND	50	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
01 (20J1511-01) Soil Sampled: 10/27/20 12:33 Received: 10/27/20 16:22									
trans-1,3-Dichloropropene	ND	5.0	µg/kg	1	2008827	"	10/28/20	EPA 8260B	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*114 %*		*50-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*		*50-128*	"	"	"	"	
Surrogate: Toluene-d8		*100 %*		*62-125*	"	"	"	"	
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
1,1,1,2-Tetrachloroethane	ND	5.0	µg/kg	1	2008827	10/28/20	10/28/20	EPA 8260B	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
1,4-Dichlorobenzene	ND	5.0	µg/kg	1	2008827	"	10/28/20	EPA 8260B	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2-Butanone	ND	100	"	"	"	"	"	"	
2-Hexanone	ND	50	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	50	"	"	"	"	"	"	
Acetone	ND	100	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Bromobenzene	ND	5.0	"	"	"	"	"	"	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	10	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	10	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane (Freon 12)	ND	10	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	20	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
03 (20J1511-03) Soil Sampled: 10/27/20 12:45 Received: 10/27/20 16:22									
o-Chlorotoluene	ND	5.0	µg/kg	1	2008827	"	10/28/20	EPA 8260B	
p-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	5.0	"	"	"	"	"	"	
tert-Butyl alcohol	ND	50	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*108 %*		*50-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*		*50-128*	"	"	"	"	
Surrogate: Toluene-d8		*100 %*		*62-125*	"	"	"	"	

ECORP Consulting, Inc.	Project:	YWA Narrows
2525 Warren Dr.	Project Number:	[none]
Rocklin, CA 95677	Project Manager:	Dave Thomas

CLS Work Order #: 20J1511
COC #: 211731

CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008811 - EPA 3020A										
Blank (2008811-BLK1)				Prepared & Analyzed: 10/28/20						
Barium	ND	1.0	mg/kg							
Beryllium	ND	1.0	"							
Cobalt	ND	1.0	"							
Copper	ND	2.0	"							
Chromium	ND	1.0	"							
Arsenic	ND	2.0	"							
Selenium	ND	5.0	"							
Lead	ND	2.5	"							
Molybdenum	ND	1.0	"							
Nickel	ND	1.0	"							
Cadmium	ND	1.0	"							
Silver	ND	1.0	"							
Antimony	ND	5.0	"							
Vanadium	ND	1.0	"							
Thallium	ND	2.0	"							
Zinc	ND	1.0	"							
LCS (2008811-BS1)				Prepared & Analyzed: 10/28/20						
Barium	101	1.0	mg/kg	100		101	75-125			
Beryllium	101	1.0	"	100		101	75-125			
Cobalt	109	1.0	"	100		109	75-125			
Copper	125	2.0	"	100		125	75-125			
Chromium	111	1.0	"	100		111	75-125			
Arsenic	124	2.0	"	100		124	75-125			
Lead	108	2.5	"	100		108	75-125			
Selenium	122	5.0	"	100		122	75-125			
Molybdenum	109	1.0	"	100		109	75-125			
Nickel	110	1.0	"	100		110	75-125			
Cadmium	122	1.0	"	100		122	75-125			
Silver	54.7	1.0	"	50.0		109	75-125			
Antimony	118	5.0	"	100		118	75-125			
Vanadium	104	1.0	"	100		104	75-125			
Thallium	118	2.0	"	100		118	75-125			

ECORP Consulting, Inc.
2525 Warren Dr.
Rocklin, CA 95677

Project: YWA Narrows
Project Number: [none]
Project Manager: Dave Thomas

CLS Work Order #: 20J1511
COC #: 211731

CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008811 - EPA 3020A										
LCS (2008811-BS1)				Prepared & Analyzed: 10/28/20						
Zinc	103	1.0	mg/kg	100		103	75-125			
Matrix Spike (2008811-MS1)	**Source: 20J1522-01**			Prepared & Analyzed: 10/28/20						
Barium	119	1.0	mg/kg	100	27.1	92	75-125			
Beryllium	97.9	1.0	"	100	0.165	98	75-125			
Copper	153	2.0	"	100	71.3	82	75-125			
Cobalt	99.9	1.0	"	100	2.46	97	75-125			
Chromium	132	1.0	"	100	29.4	103	75-125			
Arsenic	106	2.0	"	100	4.24	102	75-125			
Lead	95.4	2.5	"	100	3.66	92	75-125			
Selenium	103	5.0	"	100	ND	103	75-125			
Molybdenum	101	1.0	"	100	2.63	98	75-125			
Nickel	110	1.0	"	100	15.4	95	75-125			
Cadmium	105	1.0	"	100	ND	105	75-125			
Silver	51.1	1.0	"	50.0	ND	102	75-125			
Antimony	86.6	5.0	"	100	0.688	86	75-125			
Vanadium	122	1.0	"	100	13.5	108	75-125			
Thallium	98.4	2.0	"	100	0.844	98	75-125			
Zinc	116	1.0	"	100	31.2	85	75-125			
Matrix Spike Dup (2008811-MSD1)	**Source: 20J1522-01**			Prepared & Analyzed: 10/28/20						
Barium	117	1.0	mg/kg	100	27.1	90	75-125	2	30	
Beryllium	95.9	1.0	"	100	0.165	96	75-125	2	30	
Cobalt	99.5	1.0	"	100	2.46	97	75-125	0.3	30	
Copper	196	2.0	"	100	71.3	125	75-125	25	30	
Chromium	126	1.0	"	100	29.4	96	75-125	5	30	
Arsenic	119	2.0	"	100	4.24	114	75-125	11	30	
Selenium	119	5.0	"	100	ND	119	75-125	15	30	
Lead	95.9	2.5	"	100	3.66	92	75-125	0.5	30	
Molybdenum	100	1.0	"	100	2.63	98	75-125	0.4	30	
Nickel	111	1.0	"	100	15.4	95	75-125	0.1	30	
Cadmium	120	1.0	"	100	ND	120	75-125	13	30	
Silver	50.5	1.0	"	50.0	ND	101	75-125	1	30	

ECORP Consulting, Inc.	Project:	YWA Narrows
2525 Warren Dr.	Project Number:	[none]
Rocklin, CA 95677	Project Manager:	Dave Thomas

CLS Work Order #: 20J1511
COC #: 211731

CAM 17 Metals - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008811 - EPA 3020A										
Matrix Spike Dup (2008811-MSD1)	**Source: 20J1522-01**			Prepared & Analyzed: 10/28/20						
Antimony	98.7	5.0	mg/kg	100	0.688	98	75-125	13	30	
Vanadium	105	1.0	"	100	13.5	92	75-125	14	30	
Thallium	115	2.0	"	100	0.844	114	75-125	15	30	
Zinc	118	1.0	"	100	31.2	87	75-125	1	30	
Batch 2008813 - EPA 7471A										
Blank (2008813-BLK1)				Prepared & Analyzed: 10/28/20						
Mercury	ND	0.10	mg/kg							
LCS (2008813-BS1)				Prepared & Analyzed: 10/28/20						
Mercury	0.167	0.10	mg/kg	0.208		80	75-125			
Matrix Spike (2008813-MS1)	**Source: 20J1522-01**			Prepared & Analyzed: 10/28/20						
Mercury	0.693	0.50	mg/kg	0.208	0.609	40	75-125			QM-5
Matrix Spike Dup (2008813-MSD1)	**Source: 20J1522-01**			Prepared & Analyzed: 10/28/20						
Mercury	0.641	0.50	mg/kg	0.208	0.609	15	75-125	8	25	QM-5

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008894 - EPA 8151A										
Blank (2008894-BLK1)				Prepared: 10/30/20 Analyzed: 11/02/20						
2,4-D (2,4-Dichlorophenoxyacetic acid)	ND	0.050	mg/kg							
Dalapon	ND	1.0	"							
2,4-DB	ND	0.10	"							
Dicamba	ND	0.010	"							
Dichloroprop	ND	0.10	"							
Dinoseb	ND	0.010	"							
MCPA	ND	2.0	"							
MCPP	ND	2.0	"							
Pentachlorophenol	ND	0.010	"							
2,4,5-T	ND	0.010	"							
2,4,5-TP (Silvex)	ND	0.010	"							
Surrogate: 2,4-DCAA	*0.0471*		*"*	*0.0500*		*94*	*50-150*			
LCS (2008894-BS1)				Prepared: 10/30/20 Analyzed: 11/02/20						
Dicamba	0.0223	0.010	mg/kg	0.0250		89	50-150			
Dichloroprop	0.0233	0.10	"	0.0250		93	50-150			
Surrogate: 2,4-DCAA	*0.0424*		*"*	*0.0500*		*85*	*50-150*			
LCS Dup (2008894-BSD1)				Prepared: 10/30/20 Analyzed: 11/02/20						
Dicamba	0.0229	0.010	mg/kg	0.0250		92	50-150	3	30	
Dichloroprop	0.0245	0.10	"	0.0250		98	50-150	5	30	
Surrogate: 2,4-DCAA	*0.0454*		*"*	*0.0500*		*91*	*50-150*			
Matrix Spike (2008894-MS1)	**Source: 20J1511-01**			Prepared: 10/30/20 Analyzed: 11/02/20						
Dicamba	0.0248	0.010	mg/kg	0.0250	ND	99	50-150			
Dichloroprop	0.0442	0.10	"	0.0250	ND	177	50-150			QM-7
Surrogate: 2,4-DCAA	*0.0513*		*"*	*0.0500*		*103*	*50-150*			

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008894 - EPA 8151A										
Matrix Spike Dup (2008894-MSD1)	**Source: 20J1511-01**			Prepared: 10/30/20 Analyzed: 11/02/20						
Dicamba	0.0252	0.010	mg/kg	0.0250	ND	101	50-150	2	30	
Dichloroprop	0.0459	0.10	"	0.0250	ND	184	50-150	4	30	QM-7
Surrogate: 2,4-DCAA	*0.0607*		*"*	*0.0500*		*121*	*50-150*			

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Organochlorine Pesticides by EPA Method 8081A - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008784 - EPA 3510B GCNV										
Blank (2008784-BLK1)				Prepared: 10/27/20 Analyzed: 10/28/20						
Aldrin	ND	1.0	µg/kg							
alpha-BHC	ND	1.7	"							
beta-BHC	ND	1.7	"							
gamma-BHC (Lindane)	ND	1.7	"							
delta-BHC	ND	1.7	"							
Chlordane-technical	ND	3.3	"							
4,4´-DDD	ND	3.3	"							
4,4´-DDE	ND	3.3	"							
4,4´-DDT	ND	3.3	"							
Dieldrin	ND	1.0	"							
Endosulfan I	ND	1.7	"							
Endosulfan II	ND	3.3	"							
Endosulfan sulfate	ND	3.3	"							
Endrin	ND	3.3	"							
Endrin aldehyde	ND	3.3	"							
Heptachlor	ND	1.7	"							
Heptachlor epoxide	ND	1.7	"							
Methoxychlor	ND	17	"							
Mirex	ND	3.3	"							
Toxaphene	ND	20	"							
Surrogate: Tetrachloro-meta-xylene	*4.02*		*"*	*8.33*		*48*	*46-139*			
Surrogate: Decachlorobiphenyl	*8.60*		*"*	*8.33*		*103*	*52-141*			
LCS (2008784-BS1)				Prepared: 10/27/20 Analyzed: 10/28/20						
Aldrin	10.5	1.0	µg/kg	16.7		63	47-132			
gamma-BHC (Lindane)	10.7	1.7	"	16.7		64	56-133			
4,4´-DDT	20.6	3.3	"	16.7		124	46-137			
Dieldrin	15.6	1.0	"	16.7		94	44-143			
Endrin	17.1	3.3	"	16.7		103	30-147			
Heptachlor	10.5	1.7	"	16.7		63	33-148			
Surrogate: Tetrachloro-meta-xylene	*4.36*		*"*	*8.33*		*52*	*46-139*			
Surrogate: Decachlorobiphenyl	*9.44*		*"*	*8.33*		*113*	*52-141*			

ECORP Consulting, Inc.	Project:	YWA Narrows
2525 Warren Dr.	Project Number:	[none]
Rocklin, CA 95677	Project Manager:	Dave Thomas

CLS Work Order #: 20J1511
COC #: 211731

Organochlorine Pesticides by EPA Method 8081A - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008784 - EPA 3510B GCNV										
LCS Dup (2008784-BSD1)				Prepared: 10/27/20 Analyzed: 10/28/20						
Aldrin	9.68	1.0	µg/kg	16.7		58	47-132	9	30	
gamma-BHC (Lindane)	9.95	1.7	"	16.7		60	56-133	7	30	
4,4´-DDT	19.4	3.3	"	16.7		117	46-137	6	30	
Dieldrin	14.1	1.0	"	16.7		85	44-143	10	30	
Endrin	15.8	3.3	"	16.7		95	30-147	8	30	
Heptachlor	9.89	1.7	"	16.7		59	33-148	6	30	
Surrogate: Tetrachloro-meta-xylene	*4.23*		*"*	*8.33*		*51*	*46-139*			
Surrogate: Decachlorobiphenyl	*7.17*		*"*	*8.33*		*86*	*52-141*			
Matrix Spike (2008784-MS1)	**Source: 20J1436-03**			Prepared: 10/27/20 Analyzed: 10/28/20						
Aldrin	14.6	1.0	µg/kg	16.7	ND	88	47-138			
gamma-BHC (Lindane)	16.2	1.7	"	16.7	ND	97	38-144			
4,4´-DDT	23.2	3.3	"	16.7	2.46	124	41-157			
Dieldrin	16.0	1.0	"	16.7	ND	96	46-155			
Endrin	18.1	3.3	"	16.7	ND	109	34-149			
Heptachlor	18.9	1.7	"	16.7	ND	114	36-155			
Surrogate: Tetrachloro-meta-xylene	*15.3*		*"*	*20.8*		*73*	*46-139*			
Surrogate: Decachlorobiphenyl	*20.6*		*"*	*20.8*		*99*	*52-141*			
Matrix Spike Dup (2008784-MSD1)	**Source: 20J1436-03**			Prepared: 10/27/20 Analyzed: 10/28/20						
Aldrin	12.4	1.0	µg/kg	16.7	ND	75	47-138	16	35	
gamma-BHC (Lindane)	13.6	1.7	"	16.7	ND	82	38-144	18	35	
4,4´-DDT	20.1	3.3	"	16.7	2.46	106	41-157	14	35	
Dieldrin	13.7	1.0	"	16.7	ND	82	46-155	16	35	
Endrin	15.1	3.3	"	16.7	ND	90	34-149	18	35	
Heptachlor	15.8	1.7	"	16.7	ND	95	36-155	18	35	
Surrogate: Tetrachloro-meta-xylene	*13.3*		*"*	*20.8*		*64*	*46-139*			
Surrogate: Decachlorobiphenyl	*20.3*		*"*	*20.8*		*97*	*52-141*			

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008804 - LUFT-DHS GCMS										
Blank (2008804-BLK1)				Prepared & Analyzed: 10/28/20						
Acenaphthene	ND	330	µg/kg							
Acenaphthylene	ND	330	"							
Anthracene	ND	330	"							
Benzo (a) anthracene	ND	330	"							
Benzo (b) fluoranthene	ND	330	"							
Benzo (k) fluoranthene	ND	330	"							
Benzo (g,h,i) perylene	ND	330	"							
Benzo (a) pyrene	ND	330	"							
Benzyl alcohol	ND	330	"							
Bis(2-chloroethoxy)methane	ND	330	"							
Bis(2-chloroethyl)ether	ND	330	"							
Bis(2-chloroisopropyl)ether	ND	330	"							
Bis(2-ethylhexyl)phthalate	ND	330	"							
4-Bromophenyl phenyl ether	ND	330	"							
Butyl benzyl phthalate	ND	330	"							
4-Chloroaniline	ND	330	"							
2-Chloronaphthalene	ND	330	"							
4-Chlorophenyl phenyl ether	ND	330	"							
Chrysene	ND	330	"							
Dibenz (a,h) anthracene	ND	330	"							
Dibenzofuran	ND	330	"							
Di-n-butyl phthalate	ND	330	"							
1,2-Dichlorobenzene	ND	330	"							
1,3-Dichlorobenzene	ND	330	"							
1,4-Dichlorobenzene	ND	330	"							
3,3´-Dichlorobenzidine	ND	670	"							
Diethyl phthalate	ND	330	"							
Dimethyl phthalate	ND	330	"							
2,4-Dinitrotoluene (2,4-DNT)	ND	330	"							
2,6-Dinitrotoluene (2,6-DNT)	ND	330	"							
Di-n-octyl phthalate	ND	330	"							
Fluoranthene	ND	330	"							

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008804 - LUFT-DHS GCMS										
Blank (2008804-BLK1)				Prepared & Analyzed: 10/28/20						
Pyridine	ND	670	µg/kg							
Fluorene	ND	330	"							
Hexachlorobenzene	ND	330	"							
Hexachlorobutadiene	ND	330	"							
Hexachlorocyclopentadiene	ND	330	"							
Hexachloroethane	ND	330	"							
Indeno (1,2,3-cd) pyrene	ND	330	"							
Isophorone	ND	330	"							
2-Methylnaphthalene	ND	330	"							
Naphthalene	ND	330	"							
2-Nitroaniline	ND	830	"							
3-Nitroaniline	ND	830	"							
4-Nitroaniline	ND	830	"							
Nitrobenzene (NB)	ND	330	"							
N-Nitrosodimethylamine	ND	330	"							
N-Nitrosodiphenylamine	ND	330	"							
N-Nitrosodi-n-propylamine	ND	330	"							
Phenanthrene	ND	330	"							
Pyrene	ND	330	"							
1,2,4-Trichlorobenzene	ND	330	"							
Benzoic acid	ND	830	"							
4-Chloro-3-methylphenol	ND	330	"							
2-Chlorophenol	ND	330	"							
2,4-Dichlorophenol	ND	330	"							
2,4-Dimethylphenol	ND	330	"							
4,6-Dinitro-2-methylphenol	ND	830	"							
2,4-Dinitrophenol	ND	830	"							
2-Methylphenol	ND	330	"							
3 & 4-Methylphenol	ND	330	"							
2-Nitrophenol	ND	330	"							
4-Nitrophenol	ND	830	"							
Pentachlorophenol	ND	830	"							

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008804 - LUFT-DHS GCMS										
Blank (2008804-BLK1)				Prepared & Analyzed: 10/28/20						
Phenol	ND	330	µg/kg							
2,4,5-Trichlorophenol	ND	330	"							
2,4,6-Trichlorophenol	ND	330	"							
Surrogate: 2-Fluorophenol	*1430*		"	*1330*		*107*	*25-121*			
Surrogate: Phenol-d6	*1410*		"	*1330*		*106*	*10-110*			
Surrogate: Nitrobenzene-d5	*1470*		"	*1330*		*110*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1420*		"	*1330*		*107*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1230*		"	*1330*		*92*	*19-122*			
Surrogate: Terphenyl-dl4	*1290*		"	*1330*		*97*	*18-137*			
LCS (2008804-BS1)				Prepared & Analyzed: 10/28/20						
Acenaphthene	1340	330	µg/kg	1330		101	31-137			
1,4-Dichlorobenzene	1340	330	"	1330		100	19-116			
2,4-Dinitrotoluene (2,4-DNT)	1390	330	"	1330		104	28-109			
N-Nitrosodi-n-propylamine	1500	330	"	1330		112	41-126			
Pyrene	1130	330	"	1330		85	35-142			
1,2,4-Trichlorobenzene	1440	330	"	1330		108	38-117			
4-Chloro-3-methylphenol	1310	330	"	1330		98	26-122			
2-Chlorophenol	1460	330	"	1330		110	25-132			
4-Nitrophenol	1130	830	"	1330		84	11-124			
Pentachlorophenol	1320	830	"	1330		99	17-119			
Phenol	1300	330	"	1330		97	6-125			
Surrogate: 2-Fluorophenol	*1490*		"	*1330*		*112*	*25-121*			
Surrogate: Phenol-d6	*1360*		"	*1330*		*102*	*10-110*			
Surrogate: Nitrobenzene-d5	*1550*		"	*1330*		*116*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1460*		"	*1330*		*109*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1400*		"	*1330*		*105*	*19-122*			
Surrogate: Terphenyl-dl4	*1320*		"	*1330*		*99*	*18-137*			

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008804 - LUFT-DHS GCMS										
LCS Dup (2008804-BSD1)				Prepared & Analyzed: 10/28/20						
Acenaphthene	1330	330	µg/kg	1330		100	31-137	1	20	
1,4-Dichlorobenzene	1330	330	"	1330		100	19-116	0.5	27	
2,4-Dinitrotoluene (2,4-DNT)	1410	330	"	1330		106	28-109	1	45	
N-Nitrosodi-n-propylamine	1500	330	"	1330		112	41-126	0.07	38	
Pyrene	1150	330	"	1330		86	35-142	2	36	
1,2,4-Trichlorobenzene	1430	330	"	1330		108	38-117	0.3	23	
4-Chloro-3-methylphenol	1300	330	"	1330		97	26-122	0.7	33	
2-Chlorophenol	1460	330	"	1330		109	25-132	0.3	45	
4-Nitrophenol	1240	830	"	1330		93	11-124	10	45	
Pentachlorophenol	1120	830	"	1330		84	17-119	17	47	
Phenol	1280	330	"	1330		96	6-125	1	35	
Surrogate: 2-Fluorophenol	*1410*		*"*	*1330*		*105*	*25-121*			
Surrogate: Phenol-d6	*1410*		*"*	*1330*		*105*	*10-110*			
Surrogate: Nitrobenzene-d5	*1490*		*"*	*1330*		*111*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1400*		*"*	*1330*		*105*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1350*		*"*	*1330*		*102*	*19-122*			
Surrogate: Terphenyl-dl4	*1300*		*"*	*1330*		*98*	*18-137*			
Matrix Spike (2008804-MS1)	**Source: 20J1511-03**			Prepared & Analyzed: 10/28/20						
Acenaphthene	1030	330	µg/kg	1330	ND	77	31-137			
1,4-Dichlorobenzene	1030	330	"	1330	ND	77	28-104			
2,4-Dinitrotoluene (2,4-DNT)	1100	330	"	1330	ND	83	28-105			
N-Nitrosodi-n-propylamine	1120	330	"	1330	ND	84	41-126			
Pyrene	901	330	"	1330	ND	68	35-142			
1,2,4-Trichlorobenzene	1070	330	"	1330	ND	80	38-107			
4-Chloro-3-methylphenol	1290	330	"	1330	ND	96	26-103			
2-Chlorophenol	1100	330	"	1330	ND	82	25-102			
4-Nitrophenol	1380	830	"	1330	ND	104	11-114			
Pentachlorophenol	1330	830	"	1330	ND	100	17-109			
Phenol	1000	330	"	1330	ND	75	6-125			
Surrogate: 2-Fluorophenol	*1050*		*"*	*1330*		*79*	*25-121*			
Surrogate: Phenol-d6	*1030*		*"*	*1330*		*78*	*10-110*			

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008804 - LUFT-DHS GCMS										
Matrix Spike (2008804-MS1)	**Source: 20J1511-03**			Prepared & Analyzed: 10/28/20						
Surrogate: Nitrobenzene-d5	*1060*		*µg/kg*	*1330*		*80*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1020*		*"*	*1330*		*77*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1060*		*"*	*1330*		*80*	*19-122*			
Surrogate: Terphenyl-dl4	*952*		*"*	*1330*		*71*	*18-137*			
Matrix Spike Dup (2008804-MSD1)	**Source: 20J1511-03**			Prepared & Analyzed: 10/28/20						
Acenaphthene	905	330	µg/kg	1330	ND	68	31-137	13	20	
1,4-Dichlorobenzene	893	330	"	1330	ND	67	28-104	14	27	
2,4-Dinitrotoluene (2,4-DNT)	960	330	"	1330	ND	72	28-105	14	45	
N-Nitrosodi-n-propylamine	949	330	"	1330	ND	71	41-126	17	38	
Pyrene	783	330	"	1330	ND	59	35-142	14	36	
1,2,4-Trichlorobenzene	919	330	"	1330	ND	69	38-107	15	23	
4-Chloro-3-methylphenol	1100	330	"	1330	ND	83	26-103	15	33	
2-Chlorophenol	944	330	"	1330	ND	71	25-102	15	45	
4-Nitrophenol	1270	830	"	1330	ND	95	11-114	9	45	
Pentachlorophenol	1160	830	"	1330	ND	87	17-109	13	47	
Phenol	862	330	"	1330	ND	65	6-125	15	35	
Surrogate: 2-Fluorophenol	*1080*		*"*	*1330*		*81*	*25-121*			
Surrogate: Phenol-d6	*1060*		*"*	*1330*		*79*	*10-110*			
Surrogate: Nitrobenzene-d5	*1080*		*"*	*1330*		*81*	*23-120*			
Surrogate: 2-Fluorobiphenyl	*1060*		*"*	*1330*		*80*	*30-115*			
Surrogate: 2,4,6-Tribromophenol	*1130*		*"*	*1330*		*84*	*19-122*			
Surrogate: Terphenyl-dl4	*1000*		*"*	*1330*		*75*	*18-137*			

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008827 - EPA 5030 Soil MS										
Blank (2008827-BLK1)				Prepared & Analyzed: 10/28/20						
Acetone	ND	100	µg/kg							
Benzene	ND	5.0	"							
Bromobenzene	ND	5.0	"							
Bromochloromethane	ND	5.0	"							
Bromodichloromethane	ND	5.0	"							
Bromoform	ND	5.0	"							
Bromomethane	ND	10	"							
2-Butanone	ND	100	"							
n-Butylbenzene	ND	5.0	"							
sec-Butylbenzene	ND	5.0	"							
tert-Butylbenzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Chloroethane	ND	5.0	"							
Chloroform	ND	5.0	"							
Chloromethane	ND	10	"							
o-Chlorotoluene	ND	5.0	"							
p-Chlorotoluene	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
1,2-Dibromo-3-chloropropane	ND	10	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Dibromomethane	ND	5.0	"							
1,2-Dichlorobenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	5.0	"							
1,4-Dichlorobenzene	ND	5.0	"							
Dichlorodifluoromethane (Freon 12)	ND	10	"							
1,1-Dichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
1,1-Dichloroethene	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008827 - EPA 5030 Soil MS										
Blank (2008827-BLK1)				Prepared & Analyzed: 10/28/20						
1,3-Dichloropropane	ND	5.0	µg/kg							
2,2-Dichloropropane	ND	5.0	"							
1,1-Dichloropropene	ND	5.0	"							
cis-1,3-Dichloropropene	ND	5.0	"							
trans-1,3-Dichloropropene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"							
Hexachlorobutadiene	ND	5.0	"							
2-Hexanone	ND	50	"							
Isopropylbenzene	ND	5.0	"							
p-Isopropyltoluene	ND	5.0	"							
Methylene chloride	ND	20	"							
4-Methyl-2-pentanone	ND	50	"							
Methyl tert-butyl ether	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
Toluene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	10	"							
Xylenes (total)	ND	10	"							

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008827 - EPA 5030 Soil MS										
Blank (2008827-BLK1)				Prepared & Analyzed: 10/28/20						
Di-isopropyl ether	ND	5.0	µg/kg							
Ethyl tert-butyl ether	ND	5.0	"							
tert-Amyl methyl ether	ND	5.0	"							
tert-Butyl alcohol	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	*28.8*		"	*30.0*		*96*	*50-125*			
Surrogate: Toluene-d8	*27.9*		"	*30.0*		*93*	*62-125*			
Surrogate: 4-Bromofluorobenzene	*27.9*		"	*30.0*		*93*	*50-128*			
LCS (2008827-BS1)				Prepared & Analyzed: 10/28/20						
Benzene	21.5	5.0	µg/kg	20.0		108	64-135			
Chlorobenzene	22.4	5.0	"	20.0		112	67-133			
1,1-Dichloroethene	22.3	5.0	"	20.0		111	53-137			
Toluene	22.6	5.0	"	20.0		113	61-138			
Trichloroethene	23.3	5.0	"	20.0		117	64-130			
Surrogate: 1,2-Dichloroethane-d4	*28.4*		"	*30.0*		*95*	*50-125*			
Surrogate: Toluene-d8	*31.6*		"	*30.0*		*105*	*62-125*			
Surrogate: 4-Bromofluorobenzene	*27.9*		"	*30.0*		*93*	*50-128*			
LCS Dup (2008827-BSD1)				Prepared & Analyzed: 10/28/20						
Benzene	21.7	5.0	µg/kg	20.0		108	64-135	0.6	30	
Chlorobenzene	22.2	5.0	"	20.0		111	67-133	0.9	30	
1,1-Dichloroethene	22.1	5.0	"	20.0		110	53-137	0.9	30	
Toluene	19.3	5.0	"	20.0		97	61-138	16	30	
Trichloroethene	23.0	5.0	"	20.0		115	64-130	1	30	
Surrogate: 1,2-Dichloroethane-d4	*29.5*		"	*30.0*		*98*	*50-125*			
Surrogate: Toluene-d8	*26.7*		"	*30.0*		*89*	*62-125*			
Surrogate: 4-Bromofluorobenzene	*25.6*		"	*30.0*		*85*	*50-128*			

ECORP Consulting, Inc.
2525 Warren Dr.
Rocklin, CA 95677

Project: YWA Narrows
Project Number: [none]
Project Manager: Dave Thomas

CLS Work Order #: 20J1511
COC #: 211731

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2008827 - EPA 5030 Soil MS										
Matrix Spike (2008827-MS1)	**Source: 20J1467-05**			Prepared: 10/28/20	Analyzed: 10/29/20					
Benzene	17.9	5.0	µg/kg	20.0	ND	89	58-139			
Chlorobenzene	19.5	5.0	"	20.0	ND	97	62-134			
1,1-Dichloroethene	18.7	5.0	"	20.0	ND	94	53-152			
Toluene	16.4	5.0	"	20.0	ND	82	58-139			
Trichloroethene	21.3	5.0	"	20.0	ND	107	55-138			
Surrogate: 1,2-Dichloroethane-d4	*34.5*		*"*	*30.0*		*115*	*50-125*			
Surrogate: Toluene-d8	*31.7*		*"*	*30.0*		*106*	*62-125*			
Surrogate: 4-Bromofluorobenzene	*25.6*		*"*	*30.0*		*85*	*50-128*			
Matrix Spike Dup (2008827-MSD1)	**Source: 20J1467-05**			Prepared: 10/28/20	Analyzed: 10/29/20					
Benzene	18.5	5.0	µg/kg	20.0	ND	93	58-139	4	30	
Chlorobenzene	16.8	5.0	"	20.0	ND	84	62-134	15	30	
1,1-Dichloroethene	19.4	5.0	"	20.0	ND	97	53-152	3	30	
Toluene	17.2	5.0	"	20.0	ND	86	58-139	5	30	
Trichloroethene	19.9	5.0	"	20.0	ND	100	55-138	7	30	
Surrogate: 1,2-Dichloroethane-d4	*33.6*		*"*	*30.0*		*112*	*50-125*			
Surrogate: Toluene-d8	*31.5*		*"*	*30.0*		*105*	*62-125*			
Surrogate: 4-Bromofluorobenzene	*27.2*		*"*	*30.0*		*91*	*50-128*			

ECORP Consulting, Inc.	Project:	YWA Narrows	
2525 Warren Dr.	Project Number:	[none]	**CLS Work Order #: 20J1511**
Rocklin, CA 95677	Project Manager:	Dave Thomas	COC #: 211731

Notes and Definitions

QS-4	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-7	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS and/or LCSD recovery.
QM-5	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit (or method detection limit when specified)
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

basic laboratory

2218 Railroad Avenue
Redding, California 96001
voice 530.243.7234
fax 530.243.7494

3860 Morrow Lane, Suite F
Chico, California 95928
voice 530.894.8966
fax 530.894.5143

Analytical Report

Report To:	CALIFORNIA LABORATORY SERVICES (CLS)	**Lab No:**	20J1178
	3249 FITZGERALD ROAD	**Reported:**	11/06/20
	RANCHO CORDOVA, CA 95742	**Phone:**	916-638-7301
Attention:	DATA ROOM		
Project:	LOW LEVEL METALS/HG 20J1511		

Included in this report are laboratory results for work order 20J1178, received on 10/29/20. All analyses were performed in strict adherence to our established Quality Manual. Any qualifications or abnormalities are listed in the Notes and Definitions and/or the Case Narrative section of this report. The project Chain of Custody and laboratory sample receipt record are included as attachments to this report.

Sample Results

Description:	20J1511-02 02			**Sampled:**	10/27/20 12:33
Matrix / Type:	Water (Grab)	**Lab ID:**	20J1178-01	**Received:**	10/29/20 11:05

Metals - Total

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch / Analyst
Methyl Mercury as Mercury	ng/l	0.951	R-08	0.085	0.250	EPA 1630	10/30/20	10/29/20	B0J0734 / EDM

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fax 530.894.5143

Analytical Report

Description: 20J1511-04 04
Matrix / Type: Water (Grab)
Lab ID: 20J1178-02
Sampled: 10/27/20 12:45
Received: 10/29/20 11:05

Metals - Total

Analyte	Units	Results	Qualifier	MDL	RL	Method	Analyzed	Prepared	Batch / Analyst
Methyl Mercury as Mercury	ng/l	1.18	R-08	0.085	0.250	EPA 1630	10/30/20	10/29/20	B0J0734 / EDM

Quality Control Data

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Metals - Total Batch B0J0734 - EPA 1630 Distillation (Modified)										
Blank										
Methyl Mercury as Mercury	ND	0.050	ng/l							
Blank										
Methyl Mercury as Mercury	ND	0.050	ng/l							
Blank										
Methyl Mercury as Mercury	ND	0.050	ng/l							
LCS										
Methyl Mercury as Mercury	1.61	0.050	ng/l	2.00		80.6	67-133			
Matrix Spike	Source: 20J0991-01									
Methyl Mercury as Mercury	0.993	0.050	ng/l	1.00	ND	99.3	65-135			
Matrix Spike Dup	Source: 20J0991-01									
Methyl Mercury as Mercury	1.01	0.050	ng/l	1.00	ND	101	65-135	1.50	35	

Notes and Definitions

R-08	The sample was diluted due to sample matrix resulting in elevated reporting limits.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). The J flag is equivalent to the DNQ Estimated Concentration flag.
ND	Analyte NOT DETECTED at or above the detection limit
RPD	Relative Percent Difference
MDL	Method Detection Limit
RL	Reporting Limit
*	California ELAP does not accredit this method according to their listed FOTs .
Note 1	Received Temperature - according to EPA guidelines, samples for most chemistry methods should be held at ≤6 degrees C after collection, including during transportation, unless samples are received on ice and collected on the same day as delivery. Regulating agencies may invalidate results if temperature requirements are not met.
Note 2	According to 40 CFR Part 136 Table II, the following tests should be analyzed in the field within 15 minutes of sampling: pH, chlorine, dissolved oxygen, and sulfite.

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fax 530.894.5143

Analytical Report

Approved By

I certify that these results meet the requirements of the applicable accreditation standard, and were performed in compliance with the stated analytical methods unless otherwise noted in the qualifications or Case Narrative section of this report.

Approved By:
Josh Kirkpatrick, Quality Manager
Basic Laboratory Inc
California ELAP Cert #1677 & 2718

SUBCONTRACT ORDER 20J1178

20J1511 20J1178 11lbs

1

SENDING LABORATORY:

CLS Labs
3249 Fitzgerald Rd.
Rancho Cordova, CA 95742
Phone: 916-638-7301
Fax: 916-638-4510
Project Manager: Mark Smith
[redacted]

RECEIVING LABORATORY:

Basic Laboratory
2218 Railroad Ave.
Redding, CA 96001
Phone :(530) 243-7234
Fax: (530) 243-7494

Analysis	TAT	Due	Expires	Laboratory ID	Sample Date	Received	Matrix
Mercury, Methyl SUB	10	11/19/20 12:00	11/24/20 12:33	20J1511-02	10/27/20 12:33	10/27/20 16:22	Water

Client sample ID: 02 [redacted]
Laboratory sample ID: 20J1511-02 -1
Please use client sample ID on all reports

Containers Supplied:
500 ml Glass - ~~Unpreserve~~ HCL

Analysis	TAT	Due	Expires	Laboratory ID	Sample Date	Received	Matrix
Mercury, Methyl SUB	10	11/19/20 12:00	11/24/20 12:45	20J1511-04	10/27/20 12:45	10/27/20 16:22	Water

Client sample ID: 04 [redacted]
Laboratory sample ID: 20J1511-04
Please use client sample ID on all reports -2

Containers Supplied:
500 ml Glass - ~~Unpreserve~~ HCL

Relinquished By	Date: 10/28/20	Received By: P.O.	Date: 10·29·20 11:05
Relinquished By	Date	Received By: P.O.	Date: 10·29·20 11:29
Shipped By: UPS	Airbill Number: 1397598491		

SAMPLE RECEIPT CHECKLIST

basic laboratory

WO NUMBER 20J1178

SHIPPING INFORMATION

			Yes	No
Walk-In	☐			
Courier	☐			
FedEx	☐			
UPS	☒	Cooler Present?	☒	☐
Other	☐			

Samples Received By: JJO Date: 10.29.20

	Yes	No
Samples received on ice?	☒	☐
Samples received the same day collected?	☐	☒

Ice type? ☒ Wet ☐ Blue ☐ Other _____

SAMPLE TEMPERATURES AT RECEIPT Therm. ID (Circle one): Therm-36 (Therm-37) Other: _____

Sample ID	Meas Temp (°C)	Corr Factor	Corr Temp (°C)	Sample ID	Meas Temp (°C)	Corr Factor	Corr Temp (°C)
-01	5.1	+0.1	5.2	-06			
-02	4.5	↓	4.6	-07			
-03				-08			
-04				-09			
-05				-10			

SAMPLE CONDITION

	Yes	No	NA	
Custody seals present?	☐	☐	☒	
Samples in proper containers?	☒	☐		
Sample containers damaged?	☐	☒		
Sufficient sample volume for indicated tests?	☒	☐		Limited
Samples received within holding times?	☒	☐		
Are VOA vials free of headspace?	☐	☐	☒	

SAMPLE PRESERVATION

	Yes	No	NA
Preserved in the field?	☒	☐	☐
Preserved in the lab?	☐	☒	☐

Lab Preservation Date & Time _____

☐ H2SO4 (ID_____) ☐ HNO3 (ID_____) ☐ NaOH (ID_____)

☐ Other (ID_____) ☐ Other (ID_____) ☐ Other (ID_____)

	Yes	No	NA
H2SO4 preserved samples confirmed to pH <2 (i.e., E350.1, SM5220, SM5310)?	☐	☐	☒
HNO3 preserved samples confirmed to pH <2 (i.e., E200.7, E200.8, 6010)?	☐	☐	☐
NaOH preserved samples confirmed to pH >10 (cyanide) or >9 (sulfide)?	☐	☐	☐
Hexavalent Chromium (DW) preserved samples confirmed to pH >8 & Chlorine <0.1 mg/l?	☐	☐	☐
Hexavalent Chromium (W) preserved samples confirmed to pH 9.3 - 9.7?	☐	☐	☐
Dechlorinating agent labels present (i.e., colilert, TTHMs)?	☐	☐	☒
Are proper preservation lables present?	☒	☐	☐

Preservation checked at Lab? Date & Time _____ Test Strip (ID_____)

Preservation and Preservation Checks performed by: _____

COMMENTS, DISCREPANCEIS, ANOMALIES

_____

_____

_____

PROCESSED BY JJO DATE & TIME 10.29.20 11:09

Table D-1. Sediment and Water Sampling Results and Comparison with Hazardous Waste Thresholds

YCWA Narrows 2 Intake Debris Removal Project – Draft Initial Study

Constituent	Result[1] (ng/L)	Result[1] (mg/kg)	Reporting Limit[2] (mg/kg)	CCR Title 22 Hazardous Waste Criteria[3]					
				Threshold (TTLC) (mg/kg)	STLC (mg/L)	STLC Threshold (10XSTLC)	TCLP (mg/L)	TCLP Threshold (20XTCLP)	Exceeds Threshold?
Metals (Methods 6010B & 7471 [Mercury])[4]									
Antimony		ND	5.0	500	15	150	--	--	No
Arsenic		5.4	2.0	500	5	50	5	100	No
Barium		44	1.0	10,000	100	1,000	100	2,000	No
Beryllium		ND	1.0	75	0.75	7.5	--	--	No
Cadmium		ND	1.0	100	1	10	1	20	No
Chromium		19	1.0	2,500	560	50	5	100	No
Cobalt		6	1.0	8,000	80	800	--	--	No
Copper		20	2.0	2,500	25	250	--	--	No
Lead		3.7	2.5	1,000	5	50	5	100	No
Molybdenum		ND	1.0	3,500	350	3,500	--	--	No
Nickel		22	1.0	2,000	20	200	--	--	No
Selenium		ND	5.0	100	1	10	1	20	No
Silver		ND	1.0	500	5	50	5	100	No
Thallium		ND	2.0	700	7	70	--	--	No
Vanadium		26	1.0	2,400	24	240	--	--	No
Zinc		20	1.0	5,000	250	2,500	--	--	No
Mercury		ND	0.1	20	0.2	2	0.2	4	No
MethylMercury as Mercury (EPA Method 1630) for Water Samples	1.18		0.25	20	0.2	2	0.2	4	No

Notes:

[1]Results are highest of 2 separate sediment or water grab samples collected within the top 12 inches of lakebed. Results are expressed in wet weight.

[2]Reporting Limit may vary depending upon analytical results.

Constituent	Result[1] (ng/L)	Result[1] (mg/kg)	Reporting Limit[2] (mg/kg)	CCR Title 22 Hazardous Waste Criteria[3]					
				Threshold (TTLC) (mg/kg)	STLC (mg/L)	STLC Threshold (10XSTLC)	TCLP (mg/L)	TCLP Threshold (20XTCLP)	Exceeds Threshold?

[3]For metals, if total concentrations exceed 10 times the Soluble Threshold Limit Concentration (STLC), a WET test (Waste Extraction Test) is required. If WET results equal or exceed the STLC values, the waste is considered hazardous. If TCLP results equal or exceed the TCLP, the waste is considered hazardous. If total concentrations equal or exceed the TTLC, the waste is considered hazardous.
[4]Metals concentrations in sediment samples were measured as total concentrations rather than dissolved, or soluble concentrations.
CCR California Code of Regulations
mg/kg milligrams per kilogram (or parts per million [ppm])
ng/L nanograms per liter = 1mg/L x 10E-6
ND Not detected
NA Not analyzed
STLC Soluble Threshold Limit Concentration
TCLP Toxicity Characteristic Leaching Procedure
TTLC Total Threshold Limit Concentration

Table D-2. Sediment Sampling Results and Comparison with Sediment Quality Guidelines

YCWA Narrows 2 Intake Debris Removal Project – Draft Initial Study

Constituent	Result[1] (mg/kg)	Reporting Limit[2] (mg/kg)	Sediment Quality Guidelines for Protection of Human Health				Sediment Quality Guidelines for Protection of Environment				
			Environmental Screening Level (ESL)[3] (mg/kg)	Regional Screening Level for Soil – Residential (RSL)[4] (mg/kg)	Regional Screening Level for Protection of GW (RSL)[5] (mg/kg)	Exceeds Threshold?	ERL[6] (mg/kg)	ERM[6] (mg/kg)	TEC[7] (mg/kg)	PEC[7] (mg/kg)	Exceeds Threshold?
Metals (Methods 6010B & 7471 [Mercury])[8]											
Antimony	ND	5.0	11	31	0.35	No*	2	25	--	--	No*
Arsenic	**5.4**	2.0	0.067	0.68	0.0015	**Yes***	33	85	9.79	33	No
Barium	44	1.0	390	15,000	160	No	--	--	--	--	--
Beryllium	ND	1.0	5	160	19	No	--	--	--	--	--
Cadmium	ND	1.0	1.9	71	0.69	No	5	9	0.99	4.98	No*
Chromium	19	1.0	160	12,000	40,000,000	No	80	145	43.4	111	No
Cobalt	6	1.0	23	23	0.27	No	--	--	--	--	--
Copper	20	2.0	180	3,100	28	No	70	390	31.6	149	No
Lead	3.7	2.5	32	400	--	No	35	110	35.8	128	No
Molybdenum	ND	1.0	6.9	390	2	No	--	--	--	--	--
Nickel	22	1.0	86	1,500	26	No	30	50	22.7	48.6	No
Selenium	ND	5.0	2.4	390	0.52	No*	--	--	--	--	--
Silver	ND	1.0	25	390	0.8	No*	1	2.2	--	--	No*
Thallium	ND	2.0	0.78	0.78	0.014	No*	--	--	--	--	--
Vanadium	**26**	1.0	18	390	86	**Yes**	--	--	--	--	--
Zinc	20	1.0	340	23,000	370	No	120	270	121	459	No
Mercury	ND	0.1	13	11	0.033	No	0.15	1.3	0.18	1.06	No

Notes:

*****Threshold is below the reporting limit

†Results are 31, 37, and 41 mg/kg

[1]Results are from surface sediment grab samples collected within the top 12 inches. Results are expressed in wet weight.

[2]Reporting Limit may vary depending upon analytical results.

[3]San Francisco Regional Water Quality Control Board (SFRWQCB) (January 2019)

[4]U.S. Environmental Protection Agency (EPA) Regional Screening Levels for soil for residential land uses (May 2020)

[5]U.S. Environmental Protection Agency (EPA) Regional Screening Levels for soil for protection of groundwater, (May 2020)

Constituent	Result[1] (mg/kg)	Reporting Limit[2] (mg/kg)	Sediment Quality Guidelines for Protection of Human Health				Sediment Quality Guidelines for Protection of Environment				
			Environmental Screening Level (ESL)[3] (mg/kg)	Regional Screening Level for Soil – Residential (RSL)[4] (mg/kg)	Regional Screening Level for Protection of GW (RSL)[5] (mg/kg)	Exceeds Threshold?	ERL[6] (mg/kg)	ERM[6] (mg/kg)	TEC[7] (mg/kg)	PEC[7] (mg/kg)	Exceeds Threshold?

[6]Effects Range – Low (ERL) and Effects Range - Median (ERM) from Long and Morgan 1991. Thresholds are expressed as dry weight. Metals concentrations are expressed as totals rather than dissolved, or soluble, concentrations.
[7]Threshold Effect Concentration (TEC) and Probable Effects Concentration (PEC) from MacDonald *et al*. 2000. Thresholds are expressed as dry weight. Metals concentrations are expressed as totals rather than dissolved, or soluble, concentrations.
[8]Metals concentrations were measured as total concentrations rather than dissolved, or soluble concentrations.
CCR California Code of Regulations
ERL Effects Range – Low
ERM Effects Range – Medium
ESL Environmental Screening Level
mg/kg milligrams per kilogram (or parts per million [ppm])
ND Not detected
NA Not analyzed
PEC Probable Effect Concentration
RSL Regional Screening Level
TEC Threshold Effect Concentration

As reported in Long and Morgan (1991), the National Oceanic and Atmospheric Administration (NOAA) collected and analyzed sediment samples from freshwater, estuarine, and coastal marine sites throughout the United States on an annual basis through their National Status & Trends (NST) program. At some of these sites, measures of biological effects have been performed. The lower 10 percentile of concentrations resulting in biological effects were identified as Effects Range – Low (ER-L) concentrations, and the median concentrations resulting in biological effects were identified as Effects Range – Median (ER-M) concentrations. Data derived from freshwater, estuarine, and marine samples were merged together, therefore, differences in toxicity associated with these different types of sediment were not evaluated. The majority of the data were collected from estuarine and marine samples.

Using data collected by Long and Morgan (1991), and past data from other studies, MacDonald et al. (200), developed Threshold Effect Concentrations (TECs) and Probably Effect Concentrations (PEC) for freshwater sediment toxicity to aquatic life. TECs represent concentrations below harmful effects are not likely to be observed; PECs represent concentrations above which harmful effects on likely to be observed.

References

Long, E.R. and L.G. Morgan

1991 *The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program*. NOAA Technical Memorandum NOS OMA 72. August.

MacDonald, D.D., C.G. Ingersoll, and T.A. Berger

2000 Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. *Archives of Environmental Contamination and Toxicology*, 39, 20-31.

San Francisco Regional Water Quality Control Board (SFRWQCB)

2019 *Environmental Screening Levels (ESLs), Tier 1 (2019), Revision 2*. January 24. Obtained from https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html on August 20, 2020.

U.S. Environmental Protection Agency (EPA)

2020 *Regional Screening Level (RSL) Summary Table (Form (Target Cancer Risk [TR]=1E-06, non-cancer Target Hazard Quotient [THQ]=1) May 2020 (Corrected). Generic Table*. Accessed at https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables on August 20, 2020.

APPENDIX E

Noise Construction Model Outputs

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/11/2021
Case Description: Debris Removal

Description	**Affected Land Use**
Debris Removal	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Crane	No	16		80.6	886
Tractor/Loader/Backhoe	No	40	84		886
Off-Highway Truck	No	40		74.3	886

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Crane	55.6	47.6
Tractor/Loader/Backhoe	59	55.1
Off-Highway Truck	49.3	45.3
Total	**59**	**56.1**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/11/2021
Case Description: Debris Burning Phase

Description	**Affected Land Use**
Debris Burning	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Off-Highway Truck	No	40		74.3	886

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Off-Highway Truck	49.3	45.3
Total	**49.3**	**45.3**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 3/11/2021
Case Description: Debris Hauling Offsite Phase

Description	**Affected Land Use**
Debris Hauling Offsite Phase	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Off-Highway Truck	No	40		74.3	886
Off-Highway Truck	No	40		74.3	886

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Off-Highway Truck	49.3	45.3
Off-Highway Truck	49.3	45.3
Total	**49.3**	**48.3**

*Calculated Lmax is the Loudest value.