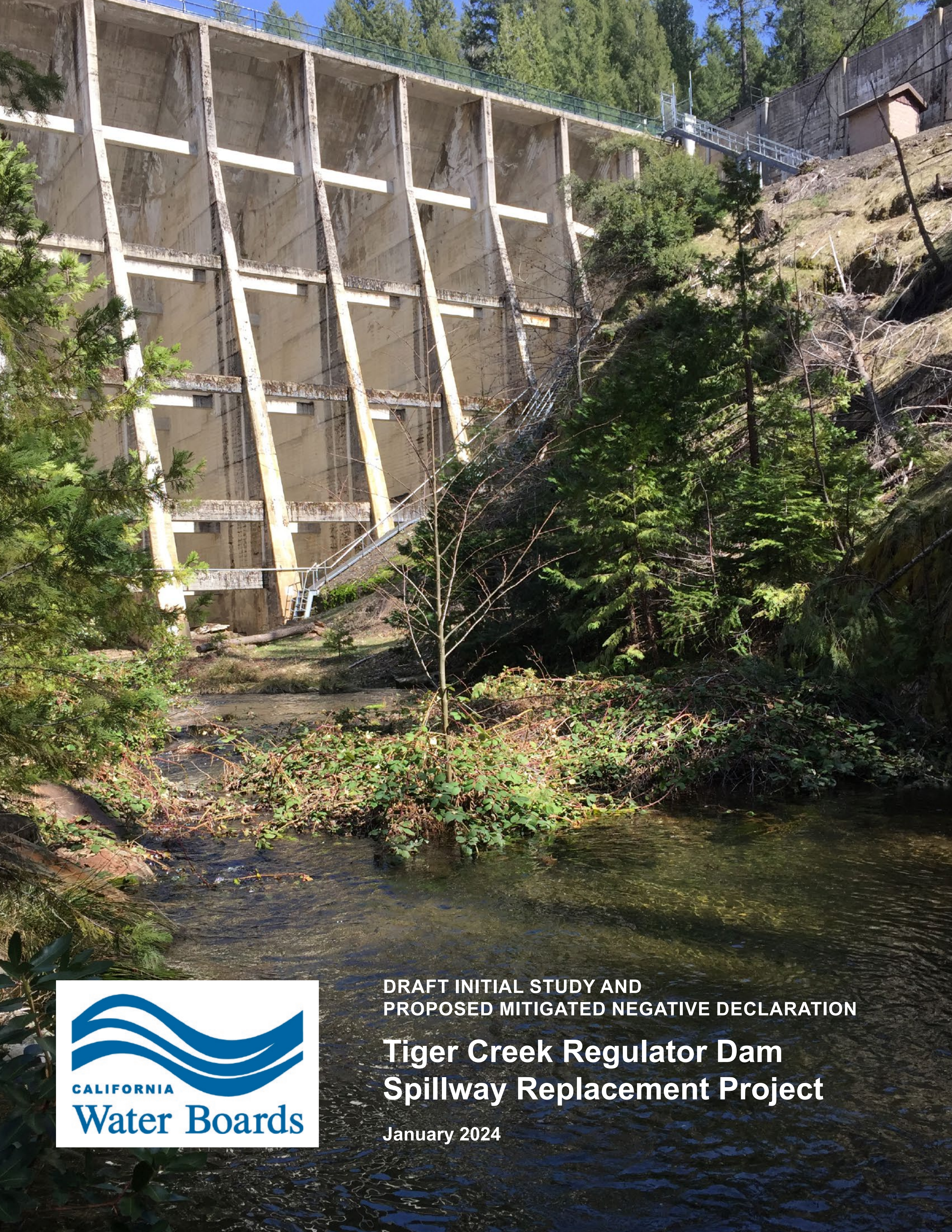

CALIFORNIA Water Boards

DRAFT INITIAL STUDY AND
PROPOSED MITIGATED NEGATIVE DECLARATION

Tiger Creek Regulator Dam Spillway Replacement Project

January 2024

DRAFT

TIGER CREEK REGULATOR DAM SPILLWAY REPLACEMENT PROJECT

INITIAL STUDY AND PROPOSED MITIGATED NEGATIVE DECLARATION

PREPARED FOR:

State Water Resources Control Board
Division of Water Rights
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January 2024

Proposed Mitigated Negative Declaration Tiger Creek Regulator Dam Spillway Replacement Project

The California State Water Resources Control Board (State Water Board), acting as the California Environmental Quality Act lead agency, has reviewed the Tiger Creek Regulator Dam Spillway Replacement Project (Proposed Project) described in this draft Initial Study and Proposed Mitigated Negative Declaration (IS/MND) to determine whether substantial evidence supports a finding that project implementation could have a significant effect on the environment. (Cal. Code Regs., tit. 14, § 15063.) "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land use, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

Name of Proposed Project: Tiger Creek Regulator Dam Spillway Replacement Project (Proposed Project)

Project Location: The Proposed Project is located at the Tiger Creek Regulator Reservoir (Reservoir) on Tiger Creek, approximately 24 miles northeast of Jackson in Amador County, California. The Proposed Project also proposes using a developed area located on a ridge approximately one mile south of the Reservoir for a staging and spoils disposal site and a developed lot along State Route 88 in the community of Pioneer, approximately 8.5 miles west-southwest of the Reservoir, for a staging area.

Project Description: The Pacific Gas and Electric Company (PG&E) is proposing to construct the Proposed Project at the Tiger Creek Regulator Reservoir in Amador County. Prompted by the spillway failure at Lake Oroville Dam (a non-PG&E site) in February 2017, the Federal Energy Regulatory Commission (FERC) and the California Department of Water Resources Division of Safety of Dams (DSOD) requested that PG&E perform assessments of the spillways at several PG&E-owned dams (Federal Energy Regulatory Commission 2017 and California Department of Water Resources 2017). PG&E completed the spillway assessment for the Tiger Creek Regulator Dam (Dam) in December 2017 and identified several structural and hydraulic deficiencies of the existing spillway and determined that it does not have the capacity to meet FERC requirements for passing the probable maximum flood

(PMF) without overtopping. The PMF flow of 5,652 cubic feet per second (cfs) is approximately double that of the existing spillway capacity. The purpose of the Proposed Project is to address these known spillway deficiencies through construction of a new spillway and decommissioning of the old spillway infrastructure, allowing the Dam to safely pass a flood event of up to 6,000 cfs (approximately 350 cfs greater than the PMF). The new spillway would be constructed near the Dam's right abutment and would include a spillway intake (crest structure), a notch through the existing Dam, a concrete chute, flip bucket splitter blocks, and plunge pool. Other associated features include a permanent access road, new log boom, new and replacement lighting, and abandonment of the existing spillway. The Project Area consists of three staging areas, the log boom anchor points, and the construction area that is bounded roughly by the Dam to the east, the Spur 10 road to the north, and the intersection of Salt Springs Road (Spur 1) and Tiger Creek Road to the south.

Findings: The draft Initial Study identifies one or more potentially significant effects on the environment in the resource areas listed in Table 1. After consideration of the analysis contained in the draft Initial Study, the State Water Board finds that the Proposed Project would not have a significant effect on the environment incorporating mitigation measures described therein and listed in Table 1.

Table 1. Tiger Creek Regulator Dam Spillway Replacement Project Mitigation Measures

Hydrology and Water Quality
Mitigation Measure WQ-MM-1: Implement Sediment Control Measures along Downstream Edge of Existing Plunge Pool prior to Rock Slope Protection Placement
Mitigation Measure WQ-MM-2: Develop and Implement a Water Quality Monitoring and Adaptive Management Plan
Biological Resources
Mitigation Measure BIO-MM-1: Conduct Worker Environmental Awareness Training and Implement General Requirements
Mitigation Measure BIO-MM-2: Protect Suitable Western Pond Turtle Upland Habitat at the Cedar Mill Staging Area
Mitigation Measure BIO-MM-3: Evaluate Trees for Removal and Implement Protective Measures to Avoid or Minimize Injury or Mortality of Special-status Roosting Bats

Mitigation Measure BIO-MM-4: Minimize the Introduction and Spread of Invasive Plants

Mitigation Measure BIO-MM-5: Avoid and Minimize Disturbance of Waters of the United States/Waters of the State

Mitigation Measure BIO-MM-6: Compensate for the Temporary and Permanent Losses of Waters of the United States/Waters of the State

Mitigation Measure BIO-MM-7: Implement Flow Pumping System and Water Drafting Requirements

Mitigation Measure BIO-MM-8: Rescue and Relocate Fish from Affected Habitat

Mitigation Measure BIO-MM-9: Conduct a Preconstruction Survey for Nesting Birds and Implement Protective Buffers around Active Nests

Geology and Soils

Mitigation Measure GEO-MM-1: Educate Construction Personnel in Recognizing Fossil Material

Mitigation Measure GEO-MM-2: Stop Work if Substantial Fossil Remains are Encountered during Construction

Greenhouse Gas Emissions

Mitigation Measure GHG-MM-1: Implement Best Management Practices to Mitigate Tree Loss and Reduce Construction Generated Greenhouse Gas Emissions

Cultural Resources

Mitigation Measure CUL-MM-1: Conduct Mandatory Cultural Resources Awareness Training for All Project Personnel

Mitigation Measure CUL-MM-2: Stop Work if Previously Unidentified Archaeological Resources are Encountered until a Qualified Archaeologist Assesses the Find and Native American Consultation Has Been Conducted

Mitigation Measure CUL-MM-3: Stop Work in Case of Accidental Discovery of Buried Human Remains until Procedures in Public Resources Code Section 5097 have been Completed

Public Review Period and Lead Agency Contact: The public review period for this draft IS/MND will begin on January 22, 2024, and end at 5:00 p.m. on February 23, 2024. Members of the public and agencies are encouraged to submit written comments regarding this draft IS/MND. Comments may do so by submitting written comments to the State Water Board prior to the end of the review period. The draft IS/MND is available for review online on the Mokelumne River Hydroelectric

Project's Water Quality Certification Program webpage[1] and at the following locations:

- State Water Board office: 1001 I Street, 2nd Floor Records Room, Sacramento, CA 95814 and
- Pioneer Branch Library: 25070 Buckhorn Ridge Road, Pioneer, CA 95666.

Written comments may be submitted to the State Water Board, Division of Water Rights, P.O. Box 2000, Sacramento, CA 95812-2000 or via email at Wr401program@waterboards.ca.gov.

[1] The Mokelumne River Hydroelectric Project webpage can be found at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/mokelumne-river-ferc137.html. Accessed on January 10, 2024.

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Acronyms and Abbreviations

Acronym	Definition
2017 Scoping Plan	California’s 2017 Climate Change Scoping Plan
2022 Scoping Plan	2022 Scoping Plan for Achieving Carbon Neutrality
AAD	Amador Air District
AAQA	ambient air quality analysis
AB	Assembly Bill
ACAPCD	Amador County Air Pollution Control District
ACHP	Advisory Council on Historic Preservation
ACTC	Amador County Transportation Commission
ANAB	ANSI National Accreditation Board
Basin Plan	Water Quality Control Plan for the Sacramento River and San Joaquin River Basins
BMPs	best management practices
BO	biological opinion
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife’s
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations

cfs	cubic feet per second
CH_4	methane
CMP	congestion management process
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS's	California Native Plant Society's
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CWA	Clean Water Act
CY	cubic yards
dB	decibel
dBA	A-Weighted Decibel
dBC	C-Weighted Decibel
dbh	diameter at 4.5 feet above the ground surface
DPM	diesel particulate matter
DSOD	California Department of Water Resources Division of Safety of Dams
DWR	Department of Water Resources
EID	El Dorado Irrigation District
EPA	U.S. Environmental Protection Agency
ERC	Ecological Resource Committee
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FHSZ	fire hazard severity zones
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program

Forest Practice Act	California (or Z'berg-Nejedly) Forest Practice Act of 1973
FPRs	Forest Practice Rules
FR	Federal Register
GBVAB	Great Basin Valleys Air Basin
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbons
HPMP	historic properties management plan
Hz	Hertz
IEPR	Integrated Energy Policy Report
IPCC	Intergovernmental Panel on Climate Change
IS/MND	initial study/mitigated negative declaration
kWh	kilowatt hours
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
LLO	low-level outlet
L_{min} and L_{max}	minimum and maximum sound levels
LRA	Local Responsibility Areas
LT	long-term
LUST	leaking underground storage tank
L_{xx}	Percentile-Exceeded Sound Level
MCAB	Mountain Counties Air Basin
MLD	most likely descendant
MPO	metropolitan planning organization
MRHPOS	Mokelumne River Hydroelectric Project operating system
MSL	mean sea level
MTIP	metropolitan transportation improvement program

MTP/SCS	metropolitan transportation plan/sustainable communities strategy
NAAQS	national ambient air quality standards
NEPA	National Environmental Policy Act
NGOs	non-governmental organizations
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OHWM	ordinary high water mark
OPR	Governor’s Office of Planning and Research
PA	Programmatic Agreement
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PMF	probable maximum flood
PPV	peak particle velocity
PRC	Public Resources Code
Proposed Project	Tiger Creek Regulator Dam Spillway Replacement Project
RCNM	roadway construction noise model
Reservoir	Tiger Creek Regulator Reservoir
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RTP	regional transportation plan
RWQCBs	Regional Water Quality Control Boards
SACOG	Sacramento Area Council of Governments
SB	Senate Bill

SCS	sustainable communities strategy
SEL	Sound Exposure Level
SEM	stream evolution model
SHPO	State Historic Preservation Officer
SIL	significant impact level
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SPI	Sierra Pacific Industries
SR	State Route
SRA	State Responsibility Areas
SR/SJR Basin Plan	*Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*
ST	short-term
Standards	Secretary of the Interior's Standards for the Treatment of Historic Properties
State Water Board	State Water Resources Control Board
SVAB	Sacramento Valley Air Basin
SWPPP	stormwater pollution prevention program
TAC	toxic air contaminants
TCEAP	Temporary Construction Emergency Action Plan
TCP	timberland conversion permit
TCRD or dam	Tiger Creek Regulator Dam
Technical Advisory	Technical Advisory on Evaluating Transportation Impacts in CEQA
THP	timber harvest plan
TPZ	timberland production zone
UBC	Uniform Building Code

USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMT	vehicle miles traveled
WUI	wildland urban interface

Chapter 1
Introduction

1.1 Proposed Project Purpose

Pacific Gas and Electric Company (PG&E) is proposing to construct the Tiger Creek Regulator Dam Spillway Replacement Project (Proposed Project) at the Tiger Creek Regulator Reservoir (Reservoir) in Amador County (Figure 1-1, *Project Location*). Prompted by the spillway failure at Lake Oroville Dam (a non-PG&E site) in February 2017, the Federal Energy Regulatory Commission (FERC) and the California Department of Water Resources Division of Safety of Dams (DSOD requested that PG&E perform assessments of the spillways at several PG&E-owned dams (Federal Energy Regulatory Commission 2017 and California Department of Water Resources 2017). PG&E completed the spillway assessment for the Tiger Creek Regulator Dam (Dam) in December 2017 and identified several structural and hydraulic deficiencies of the existing spillway, and determined that it does not have the capacity to meet FERC requirements for passing the probable maximum flood (PMF) without overtopping the Dam. The PMF flow of 5,652 cubic feet per second (cfs) is approximately double that of the existing spillway capacity. The purpose of the Proposed Project is to address these known spillway deficiencies through construction of a new spillway and decommissioning of the old spillway infrastructure, allowing the Dam to safely pass a flood event of up to 6,000 cfs.

1.2 Document Purpose and Use

This draft IS/MND was prepared in accordance with Article 5, section 15060 et seq. of the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3). This draft IS/MND describes the existing environmental resources in the Project Area, evaluates the environmental impacts of the Proposed Project on these resources, and identifies mitigation measures to avoid or reduce any potentially significant impacts to a less-than-significant level. The CEQA *Environmental Checklist Form* for the Proposed Project is provided in Appendix A, *Environmental Checklist*.

The California State Water Resources Control Board (State Water Board) is the CEQA lead agency and is considering discretionary action under section 401 of the federal Clean Water Act (CWA).

1.3 Proposed Project Setting

The Dam is located on Tiger Creek, a tributary to the North Fork of the Mokelumne River, approximately 24 miles northeast of Jackson in Amador County, California. The elevation of the Dam is approximately 3,500 feet above mean sea level. The Dam and Reservoir are situated in a narrow valley in the foothills of the Sierra Nevada range, and the valley slopes rise steeply to approximately 300 feet above the water surface of the Reservoir. The dominant vegetation type is Sierra Nevada mixed conifer forest. The lands surrounding the Reservoir are zoned as “Timberland Preserve (Timber Production Zone)” and have been logged in the past with periodic entries for commercial timber harvesting.

The Reservoir is accessible from State Route (SR) 88 by traveling east on Tiger Creek Road for three miles, then keeping left at the split in the road to continue on Tiger Creek Road for another 3.6 miles, and turning left after the bridge over Tiger Creek to stay on Tiger Creek Road for 0.2 mile, where the road ends at the Dam. The Dam and Reservoir are within the Devils Nose United States Geological Survey (USGS) 7.5-minute quadrangle in Township 7 North, Range 14 East, Section 8 (latitude 38.4778, longitude -120.4522).

The Dam is on land owned by PG&E and under a conservation easement held by the Mother Lode Land Trust. The conservation easement restricts development of the land to protect and preserve beneficial public values but includes an express reservation of PG&E’s right for continued operation, maintenance, and improvements of existing and future hydroelectric facilities and associated water delivery facilities located on, above, or under the property. PG&E also owns or has use agreements for the nearby proposed staging and laydown areas. Surrounding lands are owned by the California Department of Forestry and Fire Protection (CAL FIRE). Elements of the Proposed Project would be constructed on CAL FIRE land; however, this property was donated to CAL FIRE by PG&E and includes utility easements that allow PG&E to operate and maintain existing and future hydroelectric facilities and to construct improvements necessary to meet water delivery requirements for power generation. Some of the access roads to and around the Dam area pass through lands owned by Sierra Pacific Industries (SPI). PG&E has access rights and road use agreements with SPI for use of these roads and would ensure that these agreements are current prior to construction of the Proposed Project.

Access to the Dam and Reservoir area is controlled by locked gates on Tiger Creek Road and Salt Springs Road. PG&E has no license requirement to provide public access or recreational opportunities along these roads or at the Reservoir. The public is allowed to fish from the Dam and Reservoir shoreline when public safety is

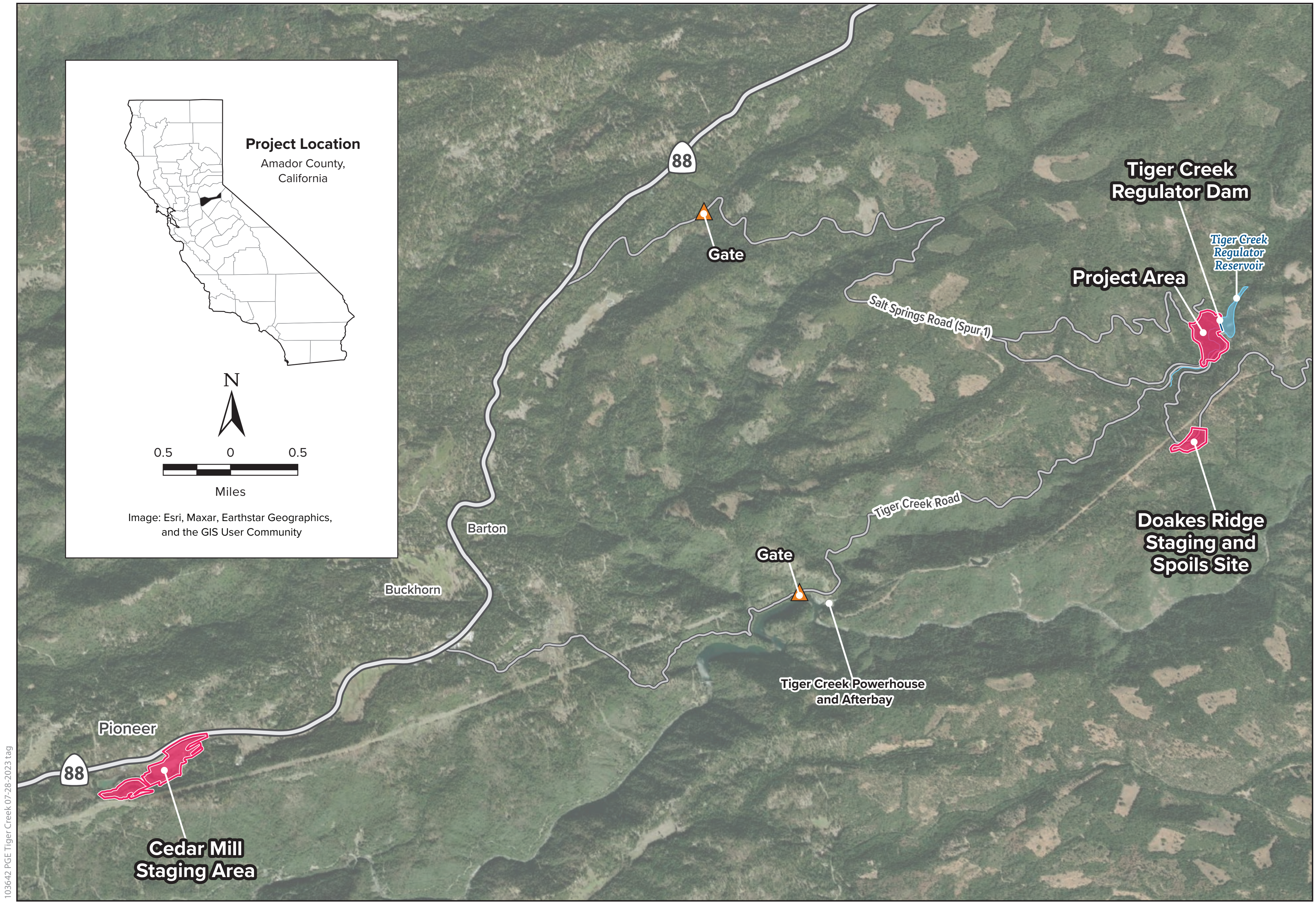

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Figure 1-1
Project Location

not compromised due to weather, wildfire precautions, or operational necessities. There are no formal recreation facilities and no swimming, boating, or float tubes are allowed in the Reservoir. Camping and fires are also prohibited. PG&E has the authority to lock the gates to the public when needed (e.g., for public safety, during road repair/maintenance activities, or during construction within the watershed). When PG&E locks the gates, notification is provided to the United States Forest Service (USFS) and the Mokelumne Ecological Resource Committee, which is composed of local stakeholders and non-governmental organizations.

1.4 Proposed Project Background

1.4.1 Description of Dam and Spillway

PG&E operates the Dam as part of the Mokelumne River Project (FERC Project No. 137; State Dam No. 97-104), which is licensed by FERC. The Dam, which impounds Tiger Creek, is a 110-foot-high, 486-foot-long concrete slab-and-buttress structure with a crest width of five feet. The upstream slab has a 45-degree slope. There are 23 buttresses with a typical center-to-center spacing of 18 feet and a maximum upstream/downstream foundation base width of 125 feet. The buttresses are founded on phyllite with some sandstone. The Dam has an existing spillway structure at its left abutment that includes the following reinforced concrete features, listed upstream to downstream and shown on Figure 1-2, *Existing Spillway Details*:

- 150-foot-long outlet approach channel;
- Bathtub inlet;
- Three self-priming siphons;
- Gate house with 8-foot-wide by 10.5-foot-tall canal intake wheel gate;
- Side channel spillway for the Lower Tiger Creek Conduit (also referred to as the Tiger Creek Canal); and
- Rectangular chute with flip bucket discharging into a plunge pool in Tiger Creek.

Construction of the Dam was completed in 1931 and no major modifications to the structure have been made since construction. The Dam is operated per requirements of the Mokelumne River Project. The FERC license for the Mokelumne River Project expires on October 11, 2031.

1.4.2 Reservoir Operations

In addition to inflow from the Tiger Creek watershed, the Reservoir is fed by diversion from the Mokelumne River at the Salt Springs Powerhouse tailrace via the Upper Tiger Creek Conduit, which discharges into the Reservoir approximately 500 feet upstream of the Dam along the left shoreline (facing downstream).

PG&E releases water from the Reservoir into Tiger Creek through a low-level outlet (LLO) at the base of the Dam, which consists of a 30-inch-diameter pipe with a manually operated slide gate at the upstream end of the pipe and a manually-operated gate valve at the downstream end of the pipe. The LLO pipe has a 16-inch-diameter bypass line for instream flow releases that is controlled by a remotely operated knife-gate valve. The instream flow release valve is adjusted automatically based on flows measured at the M-76 weir that is approximately 140 feet downstream of the Dam. Tiger Creek joins the Mokelumne River approximately four miles downstream of the Dam near the Tiger Creek Powerhouse where it flows into the Tiger Creek Afterbay. PG&E also releases water from the Reservoir into the Lower Tiger Creek Conduit, which feeds into the Tiger Creek Forebay approximately three miles downstream of the Dam and provides water for power generation at the Tiger Creek Powerhouse.

The Reservoir has a design storage capacity of approximately 360 acre-feet at current normal maximum reservoir level. PG&E typically operates the Reservoir within the upper 10 feet of storage capacity, and controls inflow and outflow for power generation downstream at the Tiger Creek Powerhouse. The Dam is classified as a “High Hazard Potential” dam under FERC and DSOD guidelines based on the potential for adverse downstream consequences in the event of dam failure.

1.4.3 Spillway Assessment

The spillway assessment conducted in 2017 identified three key deficiencies of the existing spillway that could lead to damage and overtopping of the Dam during large storm events up to the PMF:

1. Deterioration in the concrete spillway chute;
2. Potential for siphon spillways not to activate at the expected water surface elevation; and
3. Potential for inadequate hydraulic capacity and structural stability of the spillway chute.

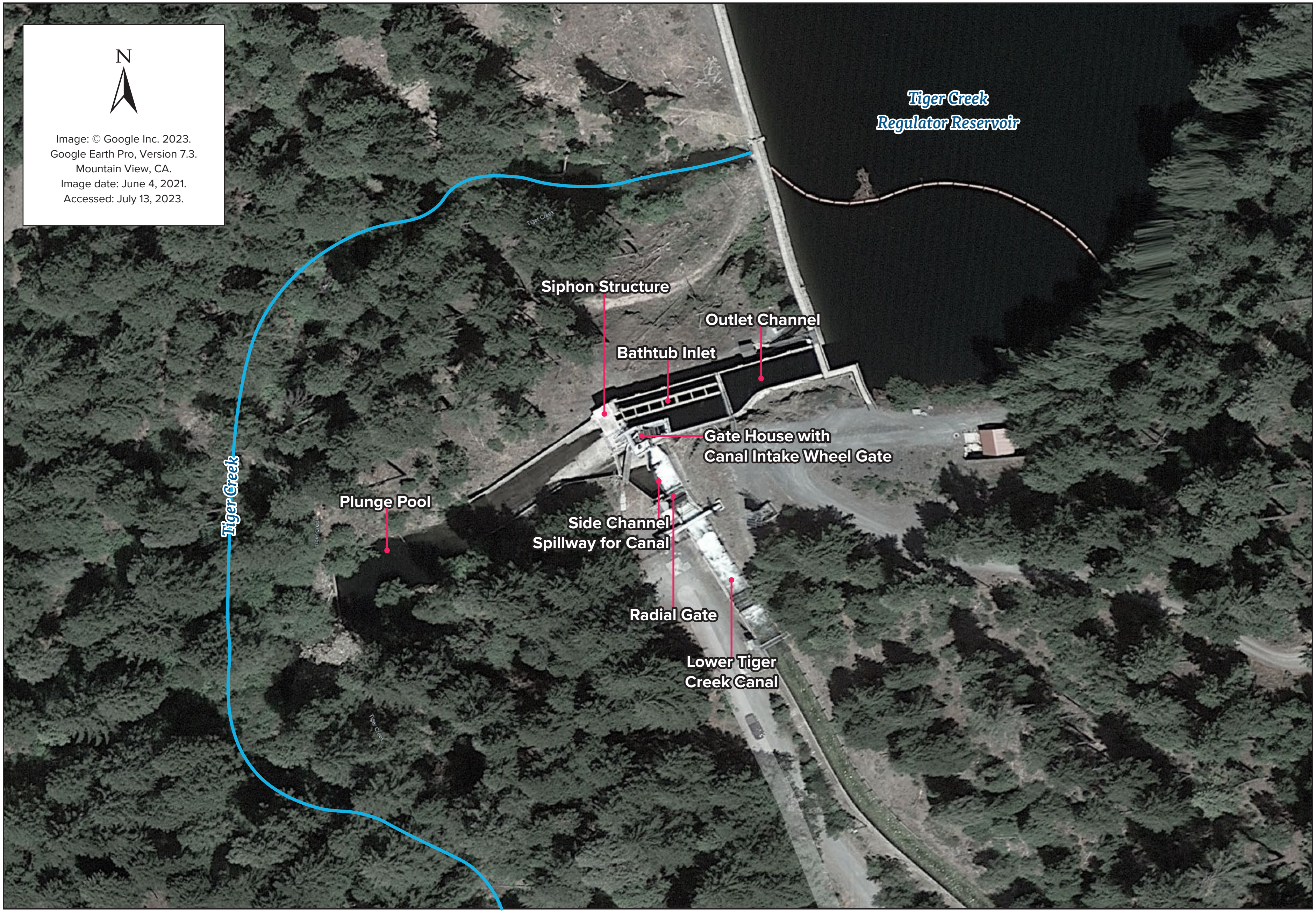

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Figure 1-2
Existing Spillway Details

In 2019, physical modeling was performed and showed that the existing spillway has a hydraulic capacity of 2,750 cfs. The PMF flow is 5,652 cfs, approximately double that of the spillway's existing capacity. Flood flows above the capacity of the existing spillway would overtop the Dam, endangering the Dam structure and safety.

1.5 Regulatory Compliance

In addition to compliance with section 401 of the CWA, PG&E will seek all necessary permissions, authorizations, concurrences, and permits to comply with the following regulations for implementation of the Proposed Project.

1.5.1 Federal Power Act

As described above, the Proposed Project is part of the Mokelumne River Project, which is licensed under the Federal Power Act by FERC. The existing Dam and spillway are on PG&E property and within the FERC license boundary. A portion of the proposed new spillway chute would extend beyond the FERC license boundary, and adjusting the FERC license boundary to include the entire spillway, as well as a new permanent access road, requires a FERC non-capacity amendment to the license. The PG&E License Coordinator submitted a license amendment application and appropriate exhibits to FERC's Division of Hydropower Administration and Compliance for review and approval on November 14, 2023.

1.5.2 Federal Endangered Species Act

As the licensor of the Mokelumne River Project, FERC is required to consult with the United States Fish and Wildlife Service (USFWS) to ensure that the Proposed Project is not likely to jeopardize the continued existence of federally listed species or result in the destruction or adverse modification of designated critical habitat pursuant to section 7(a)(2) of the federal Endangered Species Act (ESA). However, FERC is not required to consult with USFWS if FERC determines that the Proposed Project will not affect federally listed species or designated critical habitat.

1.5.3 Clean Water Act, Section 404

Section 404 of the CWA (33 USC 1344) requires that a permit be obtained from the United States Army Corps of Engineers (USACE) for the discharge of dredged or fill material into waters of the United States.

1.5.4 National Historic Preservation Act, Section 106

PG&E's application to USACE for a CWA section 404 permit for the Proposed Project prompts compliance with section 106 of the National Historic Preservation Act (NHPA), which requires federal agencies to evaluate the effects of their undertakings on historic properties. Other federal regulations applicable to the Proposed Project could also require compliance with section 106 of the NHPA, including CWA 401 permits and FERC license amendments. FERC has designated PG&E as their non-federal representative for informal consultation with the California State Historic Preservation Officer (SHPO) to ensure compliance with section 106 of the NHPA.

1.5.5 California Water Code

The California Water Code entrusts dam safety regulatory power to DSOD. DSOD provides oversight to the design, construction, and maintenance of over 1,200 dams in California including the Dam (State Dam No. 97-104). The Proposed Project therefore requires review and approval from DSOD.

1.5.6 California Forest Practice Act of 1973

Tree removals required for the construction of the Proposed Project trigger compliance with the California (or Z'berg-Nejedly) Forest Practice Act of 1973 (Forest Practice Act), which requires a timber harvest plan (THP) to be submitted to CAL FIRE for commercial timber harvesting on all nonfederal timberlands. THPs ensure that timber harvesting activities comply with California's Forest Practice Rules (FPRs) and must be approved by CAL FIRE prior to the start of those activities. The Forest Practice Act also requires that a timberland conversion permit (TCP) be sought from CAL FIRE for any property that would be taken out of timber production or that would be converted from timberland (defined as non-federal 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) to non-timber growing use.

1.6 Document Organization

This IS/MND is organized as follows:

- Chapter 1, *Introduction*, describes the purpose of the Proposed Project, Project Area and setting, project background, and regulatory compliance requirements;

- Chapter 2, *Project Description*, describes construction of the Proposed Project, as well as best management practices (BMPs) that PG&E will implement as part of the Proposed Project;
- Chapter 3, *Environmental Setting and Impacts*, describes the environmental resources present in the Project Area, and analyzes the Proposed Project's potential to affect such resources;
- Chapter 4, *Cumulative Impacts*, discusses the potential for the Proposed Project's incremental effect to be cumulatively considerable when combined with other projects causing related impacts;
- Chapter 5, *Mandatory Findings of Significance*, discloses whether the Proposed Project would result in any significant effects on the environment and subsequently, whether an environmental impact report needs to be prepared;
- Chapter 6, *References*, provides a list of all printed references and personal communications used to prepare this IS/MND;
- Appendix A, *Environmental Checklist*, contains the Environmental Checklist Form from CEQA Guidelines Appendix G;
- Appendix B, *Species Lists*, contains the results of database searches for special-status plant and wildlife species that occur in the project vicinity and the USFWS species list for the Project Area;
- Appendix C, *Plants and Animals Observed in the Tiger Creek Regulator Dam Spillway Replacement Project Area of Analysis*, lists the species of plants and animals observed during surveys;
- Appendix D, *Air Quality Calculations and Assumptions*, contains air quality modeling assumptions and outputs; and
- Appendix E, *Noise Measurement Data and Modeling Files,* contains the complete dataset of noise measurement data from the field survey and contains noise modeling files.

Chapter 2
Proposed Project Description

2.1 Introduction and Project Area

The Proposed Project comprises construction of a new spillway near the Dam's right abutment, which includes a spillway intake (crest structure), a notch through the existing Dam, a concrete chute, flip bucket splitter blocks, and plunge pool. Other associated features include a permanent access road, cofferdam, new log boom, lighting, and abandonment of the existing spillway. The Project Area consists of three staging areas, the log boom anchor points, and the construction area that is bounded roughly by the Dam to the east, Spur 10 to the north, and the Spur 1 staging area to the south. The Project Area and primary project features are shown in Figure 2-1, *Project Area.*

2.2 Proposed Project Features, Construction Methods, and Activities

2.2.1 Spillway

The primary feature of the Proposed Project is the new spillway structure. The spillway structure would consist of a crest structure, spillway chute and flip bucket, and plunge pool. These spillway elements and their construction methods are described below. This section also includes descriptions of the cofferdam that would be erected to keep the crest structure area dry during construction and the notch that would need to be cut through the existing Dam to accommodate the new spillway. The proposed spillway layout is shown in Figure 2-2, *Proposed Spillway Details*.

2.2.1.1 Crest Structure

The crest structure is the upper part of the proposed spillway that would extend into the Reservoir and allow flow into the spillway chute under high-water conditions. The crest structure would consist of a 145-foot-long concrete ogee weir with a crest elevation of 3,587.05 feet[1], upstream and downstream training walls, an invert slab, and a sloped right wall that would be cast against the excavated rock slope at the right abutment. The crest structure would be constructed using rock anchors and

[1] All vertical elevations are per North American Vertical Datum of 1988.

reinforced concrete, as well as a cutoff trench on the Reservoir side of the structure. The entire crest structure would require the placement of approximately 1,200 cubic yards (CY) of concrete. Excavation for the crest structure foundation would generate approximately 3,000 CY of spoils, which would be permanently disposed of at the Doakes Ridge staging and spoils site.

2.2.1.2 Spillway Chute and Flip Bucket

Flows from the crest structure would be directed into the 40-foot-wide, 240-foot-long spillway chute, which would be constructed using reinforced concrete. The chute would control flow from the crest structure down 25 percent and 60 percent slopes to a horizontal section (flip bucket). The chute slab would be anchored into the bedrock using steel rock dowels and the right wall of the chute would be backfilled to support the uphill slope. Transverse joints with shear keys and drains would be spaced at regular intervals along the length of the chute. The transverse drains would connect to longitudinal drains that travel along the chute wall and daylight to the interior of the chute.

The chute would terminate at a flip bucket area containing splitter blocks that would aerate the flow and dissipate the energy of water entering the plunge pool. The flip bucket would be constructed similarly to the chute but with a flat slope and the addition of four splitter blocks. The splitter blocks would be independent reinforced concrete ramps secured with additional rock anchors.

Excavation for the spillway chute and flip bucket would generate approximately 12,000 CY of soil and rock spoils, which would be permanently disposed of at the Doakes laydown area. Approximately 2,000 CY of backfill would be placed behind the right chute wall and at the base of the left chute wall. Combined, the chute and flip bucket structure would require the placement of approximately 2,500 CY of concrete.

2.2.1.3 Plunge Pool

Spillway flows exiting the flip bucket would terminate in a plunge pool where the spillway meets Tiger Creek. The pool would be excavated into the rock of the streambed to allow standing water to cushion the impact of spillway flows and to prevent rock scour in the streambed. The plunge pool would be 50 feet wide and would extend 185 feet downstream of the flip bucket, including a 60-foot-long sloped transition from the flip bucket to the plunge pool bottom elevation (3,470 feet above mean sea level). Approximately 250 CY of concrete would be required for construction of the concrete-lined transition in the streambed of Tiger Creek. A large existing fill pad dating from the Dam’s original construction would need to be removed in order to construct the plunge pool. Plunge pool excavation would

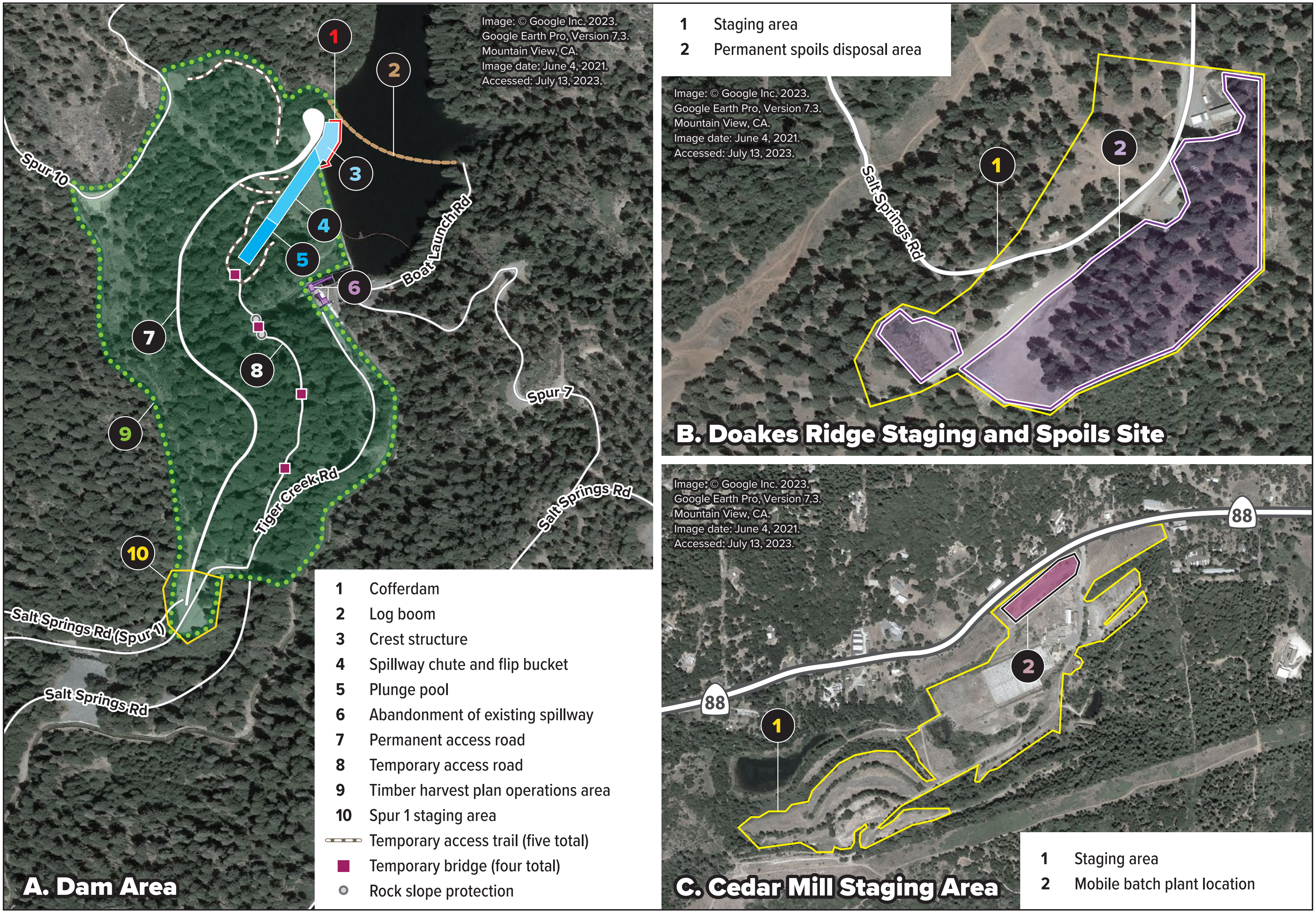

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Figure 2-1
Project Area

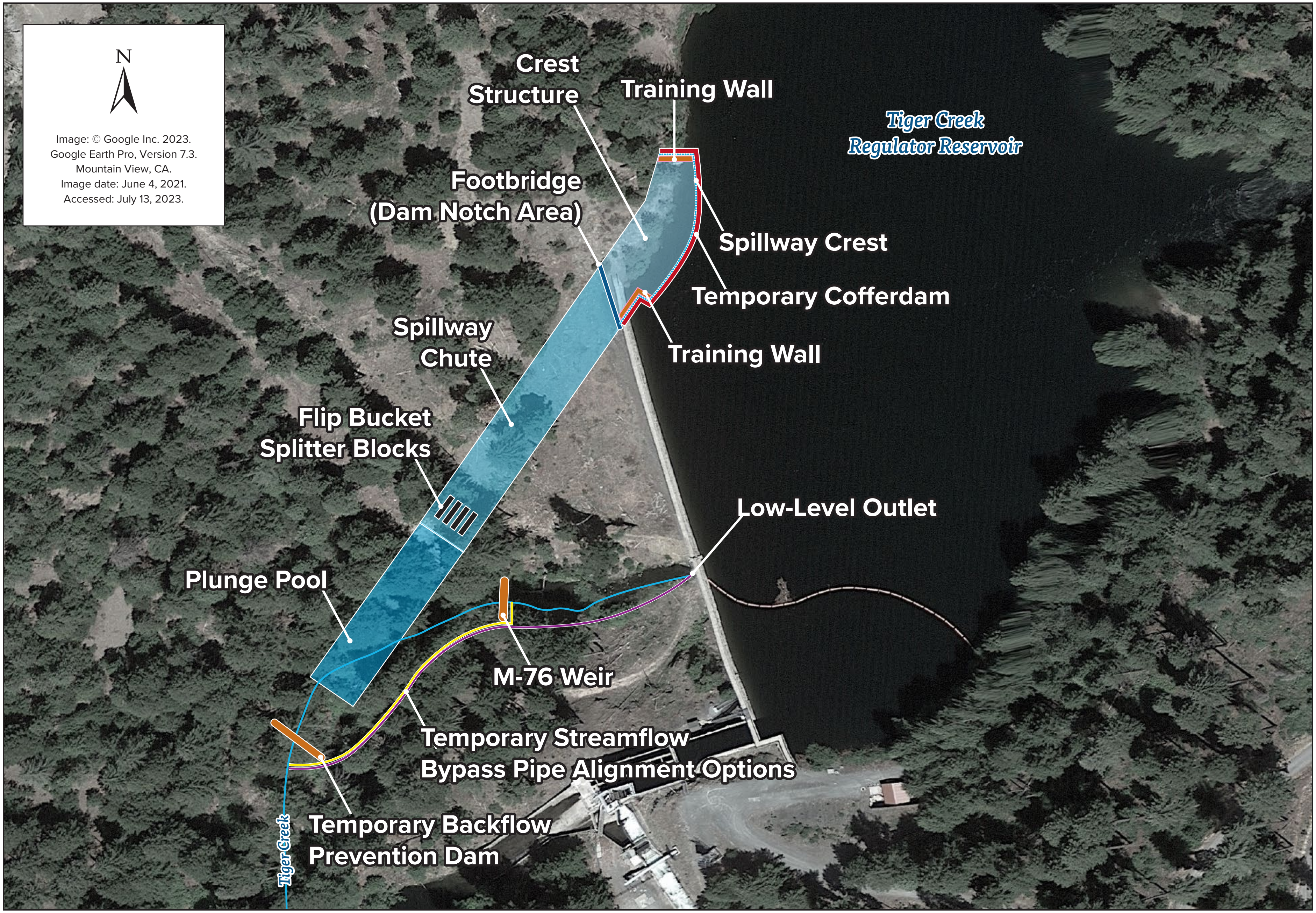

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Figure 2-2
Proposed Spillway Details

generate approximately 9,000 CY of soil and rock spoils, which would be permanently disposed of at the Doakes staging and spoils site.

To excavate the portion of the plunge pool located in Tiger Creek, stream flows would need to be diverted around the work area. PG&E would select one of two options for bypassing stream flows. Option one would use the existing M-76 stream gage weir upstream of the plunge pool to dam the stream. The M-76 weir is conveniently located at a higher elevation than the work site and could be dammed up using a simple plywood or steel sheet to cover the small opening in the weir. Streamflows would be routed via pump or gravity flow from the weir through a bypass pipe to a discharge location in Tiger Creek downstream of the plunge pool work area. The bypass pipe would be approximately 16 inches in diameter and 250 feet long, with a total volume of 350 cubic feet. Under option two, PG&E would connect a 16-inch, 400-foot-long bypass pipe directly to the LLO pipe so that flows could be controlled by the LLO valve. Under both options, the bypass pipes would run parallel to Tiger Creek to the discharge location downstream of the plunge pool. Temporary sandbags or bladder dams would be needed downstream of the plunge pool work area to prevent the bypassed water from backflowing into the work area. Additional dewatering pumps may be required within the excavation area to keep the site dry.

PG&E would maintain all Tiger Creek instream flow requirements downstream of the Dam throughout construction. Information about the instream flow requirements can be found in Section 3.3 *Hydrology and Water Quality.*

2.2.1.4 Dam Notch

In order to accommodate the new 40-foot-wide spillway chute, a notch must be cut into the existing Dam at its right abutment. Within the notch area (see Figure 2-3, *Dam Notch Location*), the Dam and right abutment would be demolished down to approximately 20 feet below the existing Dam crest by using concrete saws and excavators with hydraulic hammers. No blasting would be permitted on the Dam structure. Approximately 100 CY of demolished concrete from the Dam notch would be hauled to an off-site concrete recycling facility. A permanent pedestrian footbridge would be installed over the notch area to provide access between the Dam and the right abutment. A crane would be required to set the footbridge in place.

2.2.1.5 Cofferdam

To avoid disruptions to Reservoir operations during construction of the new spillway, a cofferdam would be installed just upstream of the proposed spillway crest structure prior to commencement of crest structure construction. This would allow spillway construction activities to occur in the dry while the Reservoir is operated at normal water levels. The cofferdam would be approximately 240 feet long and consist of approximately 35 vertical steel piles connected by waterproof sheets of steel (known as a king pile wall) that would be grouted into a cutoff trench along the upstream boundary of the proposed crest structure. The approximate location of the cofferdam is shown on Figure 2-2, *Proposed Spillway Details*. The concrete backfilled trench would also serve as the cutoff trench for the new crest structure. Cofferdam construction would occur in the dry while the Reservoir water level is lowered during planned outage in 2025.

PG&E plans outages at all power generation facilities to perform routine maintenance and capital improvement projects. An outage is when PG&E stops generating power by shutting down the flow of water to stop spinning the generator. This allows maintenance and construction teams to safely work on the generators while they are de-energized. At Tiger Creek Powerhouse, PG&E typically carries out a four-week outage every spring. During those outages there is no flow down the Lower Tiger Creek Conduit to the powerhouse. For the 2025 outage, PG&E would stop controlled inflow to the Reservoir via the Upper Tiger Creek Conduit and would lower the water surface elevation of the Reservoir through the Lower Tiger Creek Conduit to just below the invert of the existing spillway intake channel. The Reservoir would be maintained at this elevation during cofferdam construction by balancing the difference between natural inflow and instream flow releases through the LLO with controlled inflow through the Upper Tiger Creek Conduit.

The king pile wall would be constructed by excavating a trench along the cofferdam alignment, placing vertical piles and sheets inside the trench, then backfilling the trench with reinforced concrete to create a waterproof wall. Approximately 1,500 CY of soil and rock would be excavated from the Reservoir to create the cutoff trench, and those spoils would be permanently disposed of at the Doakes Ridge staging and spoils site. The king pile wall would extend vertically from the trench to match the elevation of the top of the Dam and the downstream side of the wall would be used to form the new concrete spillway crest structure. At the cofferdam's interface with the Dam, a short section of waterproofed steel sheets, supported by steel bracing, would run along the upstream Dam face to close the cofferdam.

Prior to installing the cofferdam, the bay on the downstream side of the Dam between the two Dam buttresses where the cofferdam would abut the Dam would be filled with approximately 25 CY of mass concrete to allow for cofferdam anchorage and support without affecting the existing Dam buttresses or slab. The concrete-backfilled trench and embedded portions of the king pile wall would be permanent and would amount to approximately 600 CY of concrete and steel.

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Figure 2-3
Dam Notch Location

Once construction of the spillway is complete, the top of the cofferdam would be cut below the new spillway crest to allow use of the new spillway. During the planned outage in 2026, the Reservoir water surface would be lowered to an elevation that would allow access to remove the remaining portions of the cofferdam. The cofferdam would be removed by using hand tools to cut the piles and sheets to just above the top of the concrete-backfilled trench. The pieces would be removed using a crane and hauled offsite for recycling. After the cofferdam is removed, approximately 350 CY of backfill soil would be placed above the grouted trench to transition back to natural grade.

2.2.1.6 Common Construction Methods

Excavation

All concrete structures for the Proposed Project would be founded on bedrock, which would require excavation to achieve the designed alignment of the foundation structures. Excavation equipment, blasting, or a combination of both would be utilized (unless otherwise previously noted) to achieve the target foundation depths. Hydraulic hammer attachments may also be used on excavators to dig through rock material. Large excavators and dump trucks would be used to collect the excavated material and off-haul it to the Doakes Ridge staging and spoils site. All excavation would occur in the dry and no discharge of excavated material into the Reservoir, Tiger Creek, or any other waterbody or wetland would occur.

Concrete Work

The Proposed Project design requires a total of approximately 4,000 CY of structural concrete to construct the spillway. Additional leveling, or “dental,” concrete may be required to create a flat working surface following excavation of foundations. Concrete work would require use of timber forms, steel reinforcement, expansion joint material, and drains. Cranes may be used to move materials. Mixer trucks would deliver concrete to the site and into pump trucks that would be used to place concrete in the forms. Rock anchors would be installed with drilling equipment that can create holes in the exposed rock to fit grouted anchors.

Concrete would come from a mobile batch plant that would be sited at the Cedar Mill staging area (described in further detail in Section 2.3.1.1 *Cedar Mill Staging Area*). Some concrete for the abandonment of the existing spillway (described in Section 2.2.4 *Abandonment of Existing Spillway*) and non-structural features such as the dental concrete, up to 500 CY, may come from a commercial batch plant in the Sacramento area.

2.2.2 Associated Features

2.2.2.1 Permanent Access Road

A new permanent access road would be constructed to connect Tiger Creek Road to the right abutment of the Dam just above the new spillway crest structure. The road would be 15 feet wide and would include a combination of cut slopes and retaining walls throughout most of the alignment. The road surface would consist of 6 inches of aggregate base rock. Turnouts and grade breaks would provide areas for cross traffic to pass. A turnaround and parking area would be constructed at the terminus of the road near the right abutment of the Dam. The locations of the road and turnaround/parking area are shown on Figure 2-1, *Project Area*.

The road would be sloped inboard to collect runoff in a drainage ditch that would discharge downslope through culverts. The outfall of the culverts would be armored to protect against erosion. Road excavation would involve mostly soils and would require typical road construction equipment. Articulating forklifts or excavators would be used to place retaining wall materials. The road design facilitates balancing cut-and-fill quantities; however, it is anticipated that excavation of the access road, including necessary cut and fill, would generate a net of approximately 11,000 CY of soil and rock spoils. These spoils would be permanently disposed of at the Doakes Ridge staging and spoils site.

2.2.2.2 Temporary Access Road, Bridges, and Access Trails

A temporary access road would be required to reach the plunge pool and the lower end of the spillway chute. This proposed road follows a previously used alignment that was abandoned in the early 2000s, though remnants of the road remain. The alignment is shown in Figure 2-1, *Project Area*. This road would be temporarily rehabilitated for use during construction of the Proposed Project, and four temporary bridges would be installed where the alignment crosses Tiger Creek and the existing plunge pool. Some tree removal, grading, and road base installation would be required to make the temporary access road passable. Fill material or a combination of fill and pre-cast concrete blocks would be used at each abutment of the temporary bridges to support the bridges and keep them out of the stream. Excavation equipment would be used to prepare the abutments and lift the bridges into place. The temporary bridges would be designed to pass the expected maximum flow during construction. After the Proposed Project is completed, the crossings would be removed and the road would be abandoned in place in its current state. No spoils are expected to be generated from the temporary access road.

Prior to installing the temporary bridge across the existing plunge pool, approximately 500 CY of rock slope protection would be installed at the downstream end of the plunge pool to repair previous bank erosion. Rock slope protection would be placed and tamped in (pressed down firmly) with an excavator to stabilize the bank slopes. Placement of rock slope protection would occur when the existing spillway is not in operation (e.g., not spilling) and water is not flowing from the spillway through the existing plunge pool into Tiger Creek. The dimensions of the areas of rock slope protection placed on each bank would be approximately 30 feet in length, 20 feet in width, and 10 feet in depth. After completion of the Proposed Project, the rock slope protection would remain in place.

Additional temporary access trails would be required to allow construction equipment to reach different areas along the spillway chute. These would spur off the new permanent access road and the temporary access road. The approximate locations of the temporary access trails are shown in Figure 2-1, *Project Area.*

2.2.2.3 Log Boom

A new single-span log boom would span approximately 450 feet across the Reservoir just upstream of the new crest structure. The log boom would be designed to withstand debris buildup from upstream and prevent debris from entering and blocking the new spillway during flood events. The log boom would include features that would allow PG&E personnel to remove debris in a controlled manner after flood flows have ceased. The log boom location is shown on Figure 2-1, *Project Area.*

Cast-in-place reinforced blocks with rock anchors would be installed on either end of the log boom to hold it in place. The right anchor construction site, located just upstream of the new crest structure, would be accessed by the new permanent access road. The left anchor construction site, located just downstream from the Upper Tiger Creek Conduit, would be accessed along the boat launch road connected to Spur 7. The log boom itself would be connected and attached to the anchor blocks using a small crew boat or service boat.

Casting of the anchor blocks would require approximately 4 CY of concrete. Excavation for the log boom anchors would generate approximately 2 CY of spoils, which would be permanently disposed of at the Doakes Ridge staging and spoils site.

2.2.2.4 Lighting

Lighting at the Dam presently consists of seven outdoor lights around the left abutment. These lights are controlled by photocells; they come on at dusk and stay on until sunrise. As part of the Proposed Project, the existing light fixtures would be replaced and new lighting would be provided along the existing Dam crest, across the new spillway pedestrian footbridge, down to the Dam LLO, and adjacent to the new access road turnaround and parking area to improve safety conditions.

Most of the new and replacement lights would be controlled by a switch and would only be turned on when deemed necessary by an operator. Minimal lights would remain on all night in key areas that provide access to the facility. These lights are needed for safe access and would be controlled by photocells similar to the existing lights. The lights that would remain on all night would be motion-controlled such that they would be dimmed until the motion detectors are activated. Motion sensors would be calibrated to provide enough sensitivity to detect the presence of personnel, but not so sensitive to be activated by small animals under normal conditions.

Area-specific lighting configurations are as follows:

- Existing lighting located at the control building above the Lower Tiger Creek Conduit head gate would be replaced with new lighting but would function the same. These lights would be photocell activated at night.
- Lighting would be added across the crest of the Dam to the new access road turnaround and parking area. These lights would be switch-operated from both ends. Lighting near the switches would be photocell-activated at night in a dimmed condition that would be motion-activated to full strength.
- Additional lighting from the Dam crest to the LLO would be included and would be operated by a switch near the top of the access stairs.

New and replacement lights would have shielding to focus lighting only on the areas that require illumination for safety purposes and would be designed to meet the intent of dark-sky requirements. LED lighting would avoid the use of blue-rich white light lamps and use a correlated color temperature that is no higher than 3,000 Kelvin. The lighting would utilize existing electrical infrastructure and power would be provided from the distribution line feed. In the case of power failure at the site, electricity would be supplied by the existing backup generator.

2.2.3 Vegetation Removal and Timberland Conversion

Most of the proposed improvements, as well as the permanent spoils disposal area, would require the removal of trees, shrubs, and herbaceous vegetation. Trees within 20 to 50 feet of the proposed improvements would be cut down to stumps, while trees and other vegetation within the excavation limits would be completely removed, including roots. A 20- to 30-foot-wide swath of vegetation removal would also be needed along the temporary access road and temporary trails. Additional trees would be removed in the area between the proposed spillway, Dam, and existing spillway. The areas where tree removals would occur are shown on Figure 2-4, *Timber Harvest and Timberland Conversion Areas*.

Tree removal (logging) activities would be conducted in a manner consistent with a THP (described in Section 1.5.6 *California Forest Practice Act of 1973*), which would ensure that logging activities are in compliance with California's FPRs and which must be approved by CAL FIRE. In general, trees may be cut down (or "felled") by hand (using chainsaws) or by machine (feller-bunchers). It is anticipated that for the Proposed Project, trees would be felled by hand. Trees are typically felled away from environmental resources (e.g., waterbodies or other protected biological resources, cultural resources) to comply with the THP and FPRs.

Once the trees are felled, they are typically moved (or "yarded") to landing areas where they are processed by chainsaws or by log processors (a piece of equipment mounted on a piece of equipment, like an excavator) to remove limbs and cut trees into merchantable lengths accepted at commercial log mills. Under the Proposed Project, felled trees would likely be moved by ground-based equipment called yarders and skidders that utilize cables and pullies to move the trees along "skid trails" to the landings. The tree processing for the Proposed Project is anticipated to be done by hand with chainsaws. Once processed, the logs would be loaded onto log trucks using a wheel or tracked log loader and sent offsite to a wood mill. Log trucks would use Salt Springs Road (Spur 1), Tiger Creek Road, and Spur 10, which are described in Section 2.3.2 *Construction Access*, as well as the temporary access road and trails described in Section 2.2.2.2 *Temporary Access Road, Bridges, and Access Trails*.

Trees would only be felled in the tree removal areas shown on Figure 2-4, *Timber Harvest and Timberland Conversion Areas*; however, yarding, skidding, and processing activities could occur anywhere within the THP operations areas, which are also shown on Figure 2-4. Debris associated with the landings or where the trees are felled would be treated as per the THP. The FPRs outline the necessity for treatments based on location and timing. Some common treatments would be piling and burning, lopping, and chipping or grinding. If chipping or grinding occur, the chips may remain onsite and spread or broadcast within the THP operations area, or they may be hauled offsite in chip trucks or vans to a biofuels facility or other permitted waste collection site.

Most of the tree removal areas would be permanently converted to non-timberland use because project features would be constructed in their place, or because trees would not be allowed to regrow around the project features for safety and maintenance purposes. PG&E has a long-term management objective of preventing trees from falling on PG&E infrastructure. These permanent conversion areas, which total approximately 15 acres, are shown in Figure 2-4. As described in Section 2.2.2.2 *Temporary Access Road, Bridges, and Access Trails*, the temporary access road would be abandoned after construction and trees would be allowed to regrow in its footprint; the temporary access road is therefore not included in the permanent conversion areas. A total of 747 trees, primarily Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*), would be removed as part of the Proposed Project (718 in the permanent conversion areas and 29 in the temporary access road alignment).

2.2.4 Abandonment of Existing Spillway

The three parts of the existing spillway (bathtub inlet, siphon structure, and chute) would be permanently abandoned once the new spillway is operational. The bathtub inlet would be capped with a steel plate or reinforced concrete slab. Bulkheads would be installed on the upstream side of the three siphon intakes and vent pipes. The existing spillway chute would be abandoned in place, and the concrete canal wall would be extended across the side channel spillway weir and the radial gate would be removed. Abandonment activities would occur during the planned spring 2026 annual outage to allow full access to the spillway approach channel (outlet channel) and to the Lower Tiger Creek Conduit.

2.2.5 Site Cleanup and Demobilization

Following completion of construction activities, the temporarily affected portions of the Project Area would be returned, as much as is reasonably practicable, to its original condition. The temporary access road and trails would be abandoned in place and allowed to recolonize with vegetation, and the entrance to the temporary access road would be gated off as it currently is. The temporary bridges and abutments for the stream crossings on the temporary access road would be removed, although the rock slope protection placed on the banks of the existing plunge pool would be left in place. All equipment and surplus materials would be removed from the Project Area and associated laydown areas. All construction debris and environmentally deleterious material would be removed from the construction area (including staging/parking areas) and disposed of at a permitted waste collection site. Development at the staging areas would remain for future use by PG&E.

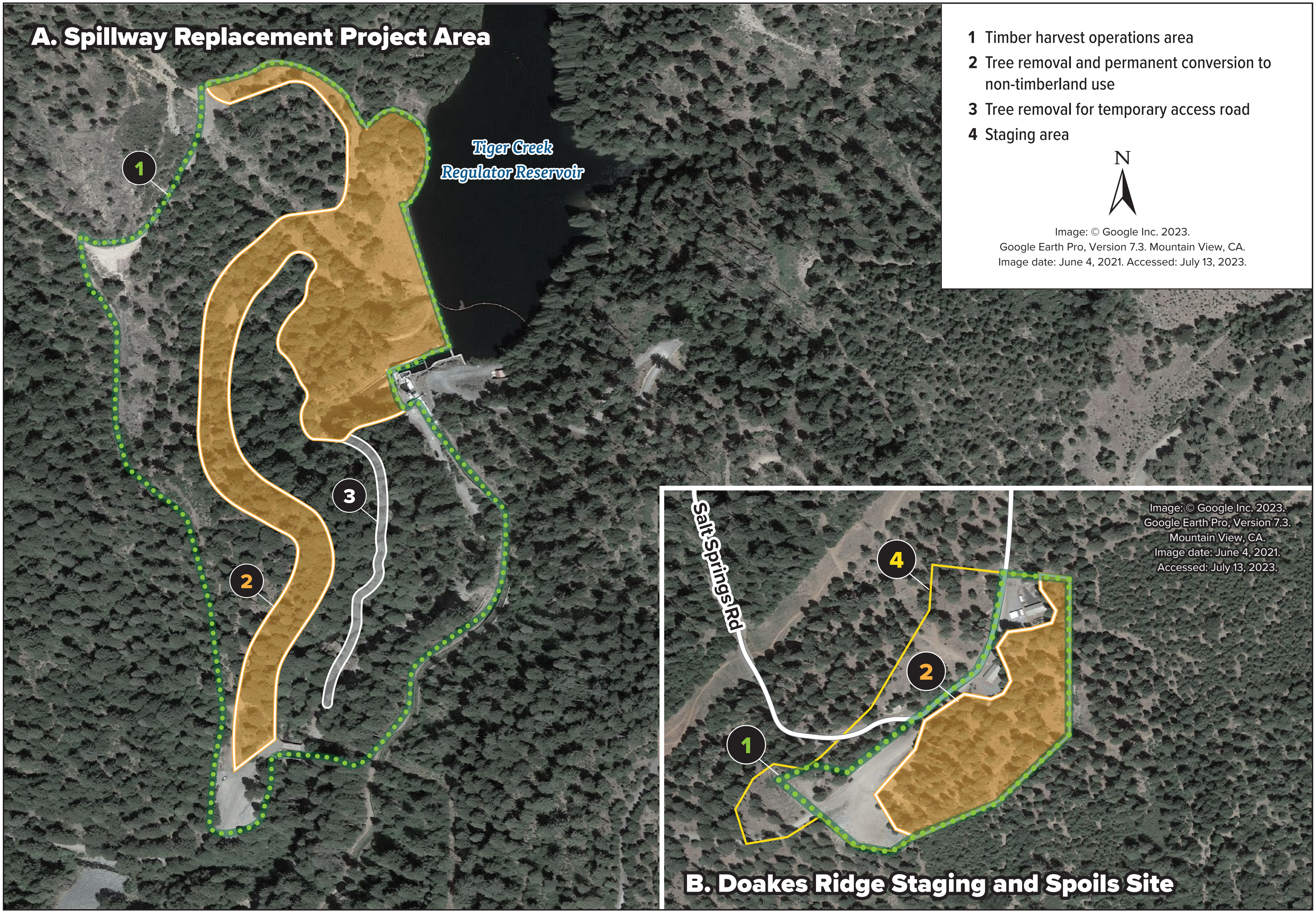

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Figure 2-4
Timber Harvest and Timberland Conversion Areas

2.2.6 Operations and Maintenance

Once the Proposed Project is complete, PG&E would continue to operate the Reservoir as was done prior to construction of the Proposed Project. Some minor differences would include:

- Maintenance access for the Dam, spillway, and log boom could occur from either the existing access roads at the south side of the Dam, or the new permanent access road at the north side of the Dam;
- The use of the canal side channel spillway and radial gate would no longer be available; and
- The spill crest elevation would be two feet lower than the old spill crest, which would slightly reduce the operating range of the Reservoir.

No other changes to operations or maintenance are anticipated.

2.3 Staging Areas, Spoils Disposal, and Construction Access

2.3.1 Staging, Laydown, and Spoils Sites

Three areas have been identified for laydown, staging, and/or spoils disposal: Cedar Mill, Doakes Ridge, and Spur 1. These areas would allow for field office staging, crew parking, craft vehicle staging, equipment and material staging, and excavated spoils disposal. Each site is described in more detail in the following sections.

2.3.1.1 Cedar Mill Staging Area

The Cedar Mill property is 8.5 miles from the Dam site and is a privately owned parcel immediately adjacent to SR 88. PG&E is in the process of purchasing this property or leasing it for use for the Proposed Project. The site contains approximately 40 acres of previously developed space, most of which is flat. The Cedar Mill property has distribution power, cover structures, and multiple concrete pads from previous enterprises. The property is mostly fenced and includes a lockable gate at the highway entrance and a substantial amount of pavement in the driveway and building areas. No additional development would be required to use this site for project staging activities with the exception of some possible minor vegetation management. The Cedar Mill property would be used as the location for a mobile batch plant (described below) and could also be used for additional laydown and staging activities including material staging, crew and craft vehicle parking, temporary construction facilities such as field offices and storage containers, and equipment parts drop-off and maintenance. It is estimated that only approximately 10 acres of the entire 40-acre site would be used to support the Proposed Project.

Batch Plant

A mobile batch plant would be located at the Cedar Mill staging area to mix concrete for spillway construction activities. Raw materials (cement, aggregate, admixtures, and water) would be imported and stored at the site. Hoppers, conveyors, and mixers would proportion these materials into batches of concrete that would be dumped into mixer trucks and delivered to the spillway construction site. A laboratory for testing the materials and batched concrete would also be established on site.

The mobile batch plant would require approximately 2 acres of the Cedar Mill staging area for material stockpiles up to 20 feet high. The setup would likely be located in the flat area near the entrance from SR 88 (see Figure 2-1, *Project Area*). The batch plant is expected to operate approximately three days per week for up to six hours per day from November 2024 to February 2026. During this period, there may be some standby days or weeks when the batch plant does not operate due to weather restrictions or when no concrete placement is occurring at the spillway construction site. Batch plant operations would typically begin at 8:00 a.m. but could start as early as 7:00 a.m. Peak production would result in approximately 200 CY of concrete per day. Concrete mixer trucks would travel from the batch plant to the construction site as needed.

2.3.1.2 Doakes Ridge Staging and Spoils Site

The Doakes Ridge staging and spoils site is located one mile past the Dam site on Salt Springs Road. Existing PG&E buildings and laydown areas for local maintenance crews are located at this site. The total area of the Doakes Ridge staging and spoils site is approximately 10 acres, and the site is gently sloping and heavily vegetated except in select areas. Distribution power is available at the site from a pole transformer near one of the buildings. The buildings have open and lockable shelter, and one building is surrounded by high-security fencing and a lockable gate. This area would be used for staging, laydown, and spoils disposal.

The area south of Salt Springs Road (approximately 6 acres) would be the designated location for the permanent disposal of approximately 35,000 CY of spoils generated by construction of the Proposed Project. The extent of the spoils disposal area is shown on Figure 2-1, *Project Area*. Trees would be removed in this area as part of vegetation removal activities, and the ground surface would be graded to receive spoils. The spoils would be transported to Doakes Ridge from the construction areas for the spillway and associated features in off-road and/or highway dump trucks. The spoils would be spread out, compacted, and graded in a manner that would allow the area to be useable in the future. Erosion control best management practices (BMPs) would be implemented in accordance with the Proposed Project’s stormwater pollution prevention plan (SWPPP), which is described in Section 2.6 *Best Management Practices*.

2.3.1.3 Spur 1 Staging Area

The Spur 1 staging area is located at the intersection of Tiger Creek Road and Salt Springs Road (also called Spur 1), and at the south end of the proposed permanent access road (see Figure 2-1, *Project Area*). This staging area is also close to the entrance to the temporary access road. The Spur 1 staging area is small, relatively flat, and previously developed but some grading may be required to fully use the area.

2.3.2 Construction Access

The two main access roads lead to the construction and staging areas near the Reservoir are Tiger Creek Road and Salt Springs Road (also called Spur 1). One or both roads would be used for primary access to the spillway construction site, though the condition of Spur 1 makes it a more preferable access route for haul trucks. Some additional local roads would be used to access different areas around the Dam site, including Spur 7, Spur 10, and the boat launch road. These access roads are shown in Figure 2-5, *Access Roads.* No road improvements are proposed for any of the existing access roads; however, minor grading and brushing (trimming of encroaching vegetation) within the existing road limits of Spur 10 may be required.

Both on- and off-road vehicles would be used during construction to import and export materials. Due to terrain conditions in the Project Area and the winding and narrow access roads, off-road vehicles may be used for moving materials around the site and to/from the Doakes Ridge staging and spoils site and Spur 1 staging area. Highway vehicles would be required to import materials from suppliers and would be delivered to the staging areas for stockpiling. Highway vehicles would also be required for transporting materials from the Cedar Mill staging area to the construction site or other staging areas. The Spur 1 staging area may be used to transfer material from highway vehicles to off-road vehicles, and vice-versa.

2.4 Construction Schedule

It is anticipated that construction work would begin in July 2024, and the proposed construction schedule is presented in Table 2-1. The dates shown in Table 2-1 are approximate and may change due to permit approvals, weather, or other circumstances. Due to the amount of work and remoteness of the site, it is anticipated that construction activities would take place six days per week (Monday through Saturday) from 7:00 a.m. to 5:30 p.m. During winter months (from approximately December 1 through March 31), it is anticipated that work would slow to a five-day-per-week schedule.

Table 2-1. Tiger Creek Regulator Dam Spillway Replacement Project Estimated Construction Schedule

Project Element/Phase	Approximate Start Date	Approximate End Date
Mobilization and Access Development	**7/8/2024**	**11/16/2024**
Vegetation Removal	7/8/2024	8/17/2024
Mobilization	8/5/2024	8/21/2024
Laydown Area Development	8/22/2024	8/28/2024
Permanent and Temporary Access Road Construction, Temporary Bridge Installation, and Temporary Trail Construction	8/22/2024	11/16/2024
Spillway Chute and Flip Bucket	**9/7/2024**	**5/19/2025**
Excavation, Subgrade Preparation, and Rock Anchor Installation	9/7/2024	11/9/2024
Form and Pour Concrete	11/16/2024	4/25/2025
Drains, Cleanouts, and Backfill	4/28/2025	5/19/2025
Cofferdam	**11/16/2024**	**4/18/2025**
Mass Concrete Placement	11/16/2024	12/20/2024
Excavate Cofferdam	3/18/2025	3/26/2025
Place Piles, Sheets, and Concrete	3/27/2025	4/18/2025
Place Trench Cutoff Concrete 1	3/31/2025	3/31/2025
Place Trench Cutoff Concrete 2	4/7/2025	4/7/2025
Place Trench Cutoff Concrete 3	4/14/2025	4/14/2025
Crest Structure	**4/21/2025**	**10/24/2025**
Excavation, Subgrade Preparation, and Rock Anchor Installation	4/21/2025	5/29/2025
Form and Pour Concrete	5/30/2025	10/24/2025

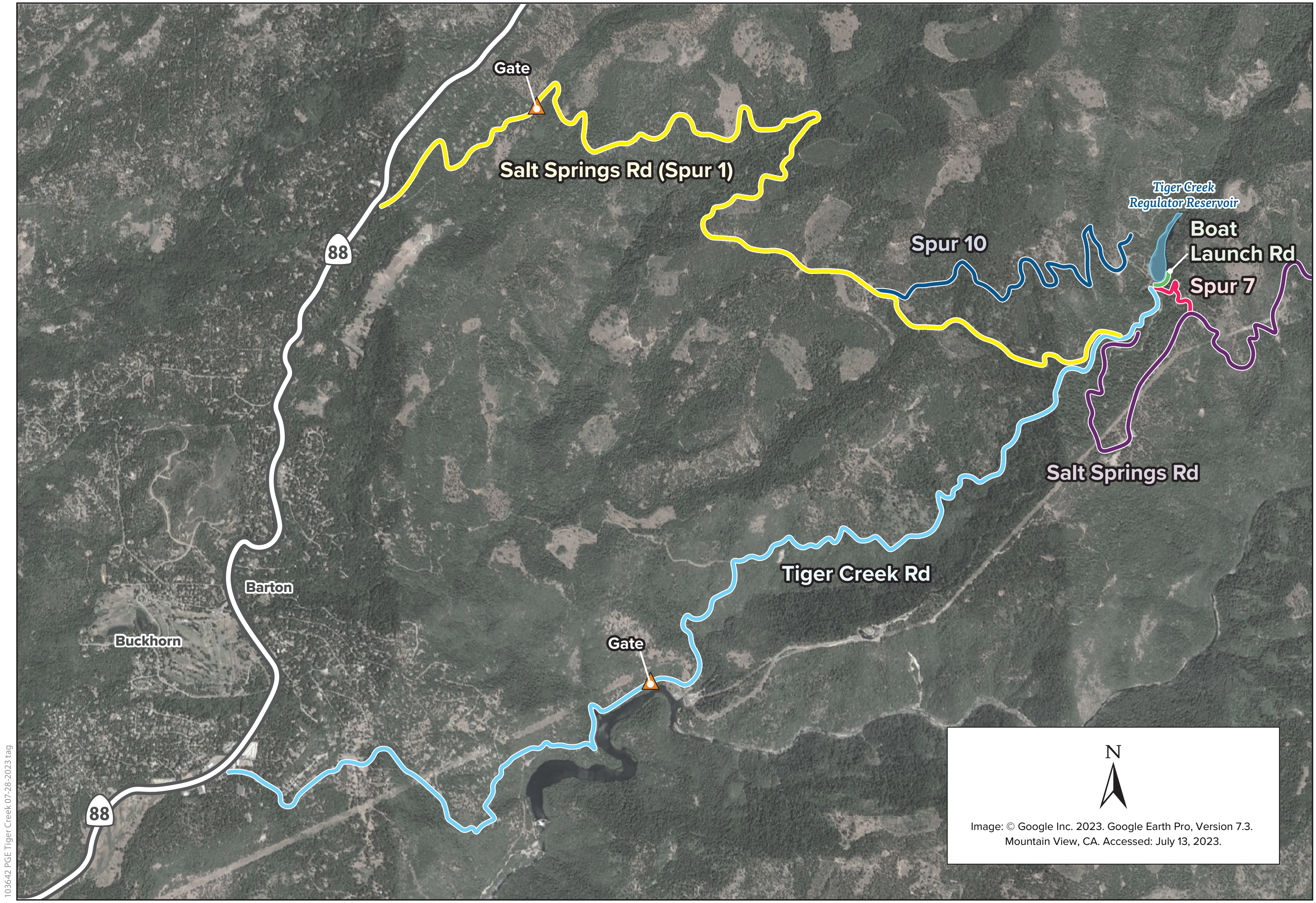

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Figure 2-5
Access Roads

Project Element/Phase	Approximate Start Date	Approximate End Date
Dam Notch and Tie-In Chute	**10/25/2025**	**1/19/2026**
Demolition	10/25/2025	11/5/2025
Excavation, Subgrade Preparation, and Rock Anchor Installation	11/6/2025	11/20/2025
Form and pour concrete	11/21/2025	12/29/2025
Install footbridge	12/30/2025	1/19/2026
Plunge Pool	**8/5/2025**	**9/15/2025**
Flow Bypass	8/5/2025	8/11/2025
Excavation	8/12/2025	9/9/2025
Slope Protection	9/10/2025	9/15/2025
Remaining Work Scope	**12/29/2025**	**2/24/2026**
Cofferdam Removal (trimmed down to crest elevation)	1/9/2026	1/16/2026
Lighting (electrical)	1/19/2026	2/10/2026
Log Boom Installation	12/29/2025	1/9/2026
Site Restoration	1/16/2026	2/3/2026
Demobilization	2/11/2026	2/24/2026
Spillway Abandonment and Cofferdam Removal	**4/9/2026**	**5/6/2026**
Remove cofferdam	4/9/2026	4/20/2026
Canal side channel	4/9/2026	4/22/2026
Cover bathtub inlet and siphons	4/23/2026	5/6/2026

2.5 Construction Equipment and Vehicle Use

2.5.1 Construction Equipment

Table 2-2 lists the type and estimated quantities of equipment expected to be used onsite during construction of the Proposed Project.

Table 2-2. Construction Phases and Onsite Equipment Use

Project Phase	Equipment Type	Fuel Type	Quantity per Day	Hours/ Day	Onsite Miles/Day
Mobilization and Access Development					
Tree Removal	CAT 325DFM Tracked Log Loader	Diesel	1	8	-

Project Phase	Equipment Type	Fuel Type	Quantity per Day	Hours/ Day	Onsite Miles/Day
	CAT 950H Rubber Tire Loader	Diesel	1	6	-
	CAT 545C Rubber Tire Skid w/ Winch	Diesel	1	8	-
	Timbco 425 Feller-Buncher	Diesel	1	8	-
	John Deere 2654G Log Processor	Diesel	1	8	-
	CAT 527 Tracked Skidder	Diesel	1	6	-
	Peterson Pacific 4310B Chipper	Diesel	1	6	-
	Chainsaw	Gas	3	8	-
	4000 Gallon Water Truck	Diesel	1	6	30
	Ford F-250	Gas	3	1.5	22.5
Laydown Area Development	CAT D6 Dozer	Diesel	1	8	-
	CAT TL 1255 Telehandler	Diesel	1	6	-
	CAT 950 Loader	Diesel	1	6	-
	4000 Gallon Water Truck	Diesel	1	8	40
	Ford F250	Gas	1	1.5	7.5
Access Road Construction	CAT D6 Dozer	Diesel	1	8	-
	CAT 735 Off-Highway Truck	Diesel	4	9	-
	CAT 349 Excavator	Diesel	1	9	-
	CAT CP86 Roller Compactor	Diesel	1	10	-
	4,000 Gallon Water Truck	Diesel	1	10	50
	Ford F250	Gas	1	2	10
Spillway Chute and Flip Bucket					
Excavation, Subgrade Preparation,	CAT D6 Dozer	Diesel	1	8	-
	CAT 735 Off-Highway Truck	Diesel	4	9	-

Project Phase	Equipment Type	Fuel Type	Quantity per Day	Hours/ Day	Onsite Miles/Day
and Rock Anchor Installation	CAT 349 Excavator	Diesel	1	9	-
	CAT 297/299 Skid Steer	Diesel	1	5	-
	Sandvick Ranger 600R Drill	Diesel	1	5	-
	4,000 Gallon Water Truck	Diesel	1	10	50
	Ford F250	Gas	1	2	10
Form and Pour Concrete	Concrete Pump	Diesel	1	5	-
	Model 375 Portable Air Compressor	Diesel	1	5	-
	Crane Crawler 150 Ton	Diesel	1	6	-
	Generator 45-55 kW (for light tower)	Diesel	1	10	-
	CAT 297/299 Skid Steer	Diesel	1	5	-
	Ford F250	Gas	1	2	10
	Ford F450 Flat Bed	Diesel	1	8	40
Cofferdam					
Mass Concrete Placement, Excavate Cofferdam, Place Piles and Sheets	CAT TL 1255 Telehandler	Diesel	1	6	-
	CAT 336 Excavator	Diesel	1	5	-
	Crane Crawler 150 Ton	Diesel	1	6	-
	Ford F250	Gas	1	2	10
	Ford F550	Diesel	1	2	10
Trench Cutoff Concrete Placement (Limited to 3 Days)	Concrete Pump	Diesel	1	8	-
	CAT 297/299 Skid Steer	Diesel	1	5	-
	Generator 45-55 kW	Diesel	1	10	-
	CAT TL 1255 Telehandler	Diesel	1	6	-
	Ford F250	Gas	1	2	10
Crest Structure					
Excavation, Subgrade Preparation,	CAT D6 Dozer	Diesel	1	8	-
	CAT 735 Off-Highway Truck	Diesel	4	9	-

Project Phase	Equipment Type	Fuel Type	Quantity per Day	Hours/ Day	Onsite Miles/Day
and Rock Anchor Installation	CAT 349 Excavator	Diesel	1	9	-
	Sandvick Ranger 600R Drill	Diesel	1	5	-
	4,000 Gallon Water Truck	Diesel	1	10	50
	Ford F250	Gas	1	2	10
Form and Pour Concrete	Concrete Pump	Diesel	1	5	-
	Model 375 Portable Air Compressor	Diesel	1	5	-
	Crane Crawler 150 Ton	Diesel	1	6	-
	Generator 45-55 kW (for light tower)	Diesel	1	10	-
	CAT 297/299 Skid Steer	Diesel	1	5	-
	Ford F250	Gas	1	2	10
	Ford F450 Flat Bed	Diesel	1	2	10
Dam Notch and Tie-In Chute					
Demolition, Excavation, Subgrade Prep., and Rock Anchors	CAT 336 Excavator	Diesel	1	10	-
	CAT 349 Excavator	Diesel	1	10	-
	Hydraulic Breaker for Excavator	N/A	1	10	-
	Concrete Saw	Gas	2	8	-
	CAT 735 Off-Highway Truck	Diesel	1	3	-
	Ford F250	Gas	1	2	10
Form and Pour Concrete; Footbridge Installation	Concrete Pump	Diesel	1	2	-
	Model 375 Portable Air Compressor	Diesel	1	5	-
	Crane Crawler 150 Ton	Diesel	1	6	-
	Generator 45-55 kW (for light tower)	Diesel	1	10	-
	CAT 297/299 Skid Steer	Diesel	1	5	-
	Ford F250	Gas	1	2	10
	Ford F450 Flat Bed	Diesel	1	2	10

Project Phase	Equipment Type	Fuel Type	Quantity per Day	Hours/ Day	Onsite Miles/Day
Plunge Pool					
Flow Bypass	Generator 45-55 kW	Diesel	1	24	-
Excavation	55KW generator (for bypass pumps)	Diesel	1	10	-
	CAT D6 Dozer	Diesel	1	8	-
	CAT 735 Off-Highway Truck	Diesel	2	9	-
	CAT 349 Excavator	Diesel	1	9	-
	4,000 Gallon Water Truck	Diesel	1	10	50
Slope Protection	Sandvick Ranger 600R Drill	Diesel	1	5	-
	Putzmeister TK 20 Shotcrete Pump	Diesel	1	5	-
	Ford F250	Gas	1	2	10
Remaining Work Scope					
Cofferdam Removal (to crest elevation)	CAT TL 1255 Telehandler	Diesel	1	6	-
	Crane Crawler 150 Ton	Diesel	1	6	-
Lighting	CAT TL 1255 Telehandler	Diesel	1	6	-
	Ford F250	Gas	1	2.5	12.5
Log Boom	CAT 336 Excavator	Diesel	1	8	-
	Crew Boat	Gas	1	8	-
Site Restoration and Demobilization	CAT 297/299 Skid Steer	Diesel	1	10	-
	CAT 336 Excavator	Diesel	1	5	-
	CAT TL 1255 Telehandler	Diesel	1	6	-
	Ford F250	Gas	1	2.5	12.5
	4,000 Gallon Water Truck	Diesel	1	10	50
	Ford F450 Flat Bed	Diesel	1	2	10

Project Phase	Equipment Type	Fuel Type	Quantity per Day	Hours/ Day	Onsite Miles/Day
Spillway Abandonment and Cofferdam Removal					
Remove Cofferdam	CAT TL 1255 Telehandler	Diesel	1	6	-
	Crane Crawler 150 Ton	Diesel	1	6	-
	Ford F250	Gas	1	2	10
Canal Side Channel, Cover Bathtub Inlet and Siphons	Crane RT Hydraulic 90	Diesel	1	8	-
	CAT TL 1255 Telehandler	Diesel	1	6	-
	Concrete Pump	Diesel	1	5	-
	Ford F250	Gas	1	2	10

2.5.2 On-Road Vehicle Use

For the purposes of this IS/MND, it is assumed that all haul truck trips would originate in the greater Sacramento area, traveling east on SR 88. Trucks would enter and exit the Cedar Mill staging area directly from SR 88. Trucks would access the Spur 1 staging area from SR 88 using either Spur 1 or Tiger Creek Road. Worker and vendor trips are assumed to originate from within Amador County. Table 2-3 lists the maximum number of anticipated one-way worker, vendor, and haul truck trips for each phase of the Proposed Project.

Table 2-3. Construction Phases and On-Road Vehicle Use

	Maximum Daily Vehicle Trips		
Project Phase	One-Way Worker Trips	One-Way Vendor Trips (Light/Med. Trucks)	One-Way Haul Trips (Heavy Trucks)
Mobilization and Access Development	20	10	6
Tree Removal	-	-	20
Material Transport to Batch Plant at Cedar Mill[1]	-	-	12
Spillway Chute and Flip Bucket Construction	40	8	4
Cofferdam Construction	12	4	4
Crest Structure Construction	40	8	4

Project Phase	Maximum Daily Vehicle Trips: One-Way Worker Trips	One-Way Vendor Trips (Light/Med. Trucks)	One-Way Haul Trips (Heavy Trucks)
Dam Notch and Tie-In Chute	12	2	4
Plunge Pool Construction	12	8	4
Concrete Transport from Batch Plant to Site[2, 3]	-	-	30
Remaining Work Scope	20	6	4
Spillway Abandonment and Cofferdam Removal	12	4	4

[1] 300 total loads of material.

[2] 450 loads of concrete total, to be hauled during concrete placement activities only.

[3] Concrete haul trips are expected to be sporadic (i.e., haul 10 loads one day, none the next 2 days) and to average approximately 6 loads per day (12 one-way trips).

2.6 Best Management Practices

As part of the Proposed Project, PG&E will implement the following BMPs during construction. The resource analyses in Chapter 3, *Environmental Setting and Impacts*, include descriptions of how these practices help to minimize and avoid specific potential impacts.

2.6.1 BMP-1: Implement Water Quality Protection Measures and Erosion and Sediment Control Plans

PG&E will comply with all applicable construction BMPs specified in PG&E's Activity Specific Erosion and Sediment Control Plans[2], the SWPPP, and any other permit conditions to minimize the introduction of construction-related contaminants and mobilization of sediment into wetlands and other waters in and adjacent to the project area. These BMPs will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-stormwater management, and waste management practices. The BMPs will be based on the best available technology.

[2] The relevant Activity Specific Erosion and Sediment Control Plans are *Good Housekeeping* (Pacific Gas and Electric Company Construction Stormwater Group 2017a), *Laydown/Staging Area Construction* (Pacific Gas and Electric Company Storm

In California, the National Pollution Discharge Elimination System (NPDES) program requires that any construction activity disturbing one or more acres comply with the statewide General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit), as authorized by the State Water Board. The General Permit requires elimination or minimization of non-stormwater discharges from construction sites and development and implementation of a SWPPP for the site. The SWPPP will include the following primary elements:

- Description of site characteristics—including runoff and streamflow characteristics and soil erosion hazard—and construction procedures;
- Guidelines for proper application of erosion and sediment control BMPs;
- Description of measures to prevent and control toxic materials spills; and
- Description of construction site housekeeping practices.

In addition to these primary elements, the SWPPP will specify that the extent of soil and vegetative disturbance will be minimized by exclusionary fencing, erosion control fencing, or other means; and that the extent of soil disturbed at any given time will be minimized. The SWPPP will be retained at the construction site. PG&E will perform routine inspections of the construction area to verify that the BMPs are properly implemented and maintained.

These BMPs will include, but are not limited to the following, as well as those listed in BMP-2: *Implement Hazardous Materials Control Measures*:

- At all laydown sites, barriers will be installed to ensure construction equipment, workers, and runoff do not enter adjacent sensitive resource areas;
- A filter will be installed on the plunge pool excavation dewatering system, as needed, to prevent turbid water from being discharged into Tiger Creek;
- PG&E will monitor turbidity and pH levels at multiple locations within Tiger Creek. These locations will include, but are not limited to: (1) immediately upstream of the plunge pool diversion and (2) up to 300 feet downstream of the plunge pool diversion;
- Concrete, solvents, adhesives, fuels, dirt, and gasoline will not be rinsed or washed into the Reservoir, drainages, or wetlands; and

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Water Program Group 2011), *Dirt and Gravel Access Road Maintenance—Mountainous Regions* (Pacific Gas and Electric Company Water Quality Group 2013), and *Stockpile Management* (Pacific Gas and Electric Company Construction Stormwater Group 2017b).

- Following completion of construction activities, the temporary access road and trails would be covered with a combination of temporary cover (mulch) and the means to establish permanent vegetative stabilization (seed, fertilizer, soil amendments, etc.).

2.6.2 BMP-2: Implement Hazardous Materials Control Measures

Hazardous materials such as fuel (gasoline/diesel), hydraulic oil, motor oil and other lubricants, and cementitious materials would be used during project construction. To ensure the potential effects of hazardous materials or potential spills are minimized, PG&E will implement the following measures:

- Construction personnel will be trained in proper hazardous material management and will be able to access safety data sheets for all substances used on the Project Area by contacting Safetec at 800-704-9215;
- All hazardous materials will be contained in appropriate spill-proof containers and/or secondary containment areas, and stored in a designated area at least 100 feet away from waterbodies;
- Temporary storage of hazardous materials, equipment staging, and servicing and refueling of equipment will be conducted at pre-designated locations away from waterbodies and will only be permitted at designated areas;
- Refueling will only take place in a designated area away from any waterbodies. Drip pans or absorbent pads will be used during equipment fueling. Absorbent spill clean-up materials and spill kits will be available in fueling areas. Fuels will be stored in containment basins;
- Hazardous waste generated onsite will be placed in proper containers, labeled appropriately, and transported from the job site to an authorized hazardous waste consolidation site;
- Bulk fuel storage tanks will be double-walled or will be placed in secondary containment areas. All refueling operations will be attended by trained personnel and be conducted in accordance with applicable PG&E policies;
- Prior to operation, all equipment will be inspected for fluid leaks and for signs of worn or damaged parts that may result in a hazardous material release;
- All power equipment and vehicles will be free of petroleum residue, kept in good working order, and inspected each day for leaks prior to use. Leaks will be repaired immediately in an area at least 100 feet away from waterbodies, or problem vehicles or equipment will be removed from the Project Area;

- Small-engine-powered equipment will be provided with secondary containment areas. Whenever possible, vehicles and equipment with engines supplying motive power will be parked in designated areas located 200 feet or more from waterbodies. Drip pans or other containment measures will be placed under vehicles and equipment when not in use and within 200 feet of waterbodies;
- Equipment will be staged overnight in secondary containment areas or with other suitable barriers to prevent accidental leakage of fuel, oils, or other liquid from soaking into the soil or being carried to waterbodies;
- Appropriate spill containment and clean-up materials will be available onsite at all times. Any spills will be cleaned up immediately and will not be buried or washed with water. Initial containment would be with absorbent material or, if necessary, the construction of berms. Contaminated soil will be excavated, contained, and transported to an approved disposal site; and
- In accordance with PG&E policy, all hazardous substance releases to the environment will be reported internally and to the State Water Board. A spill kit will be maintained onsite to ensure prompt containment in the unlikely event of a release to the environment. All media affected by a spill will be cleaned up and disposed of offsite in accordance with applicable regulations.

Hazardous materials permits will be obtained from Amador County Environmental Health as needed for project support locations that store threshold quantities of hazardous materials for 30 days or more. Hazardous materials business plans and spill prevention control and countermeasure plans will detail hazardous materials inventories, emergency contacts, spill prevention/response, and contingency plans.

2.6.3 BMP-3: Implement Fire Hazard Prevention Measures

During construction, crews will take appropriate measures to eliminate the potential for fire, including the following:

- Construction crews will follow the safe working practices outlined below and will abide by all facility programs to prevent and suppress fires in the Project Area. Initial action will be prompt and will include the use of all personnel and equipment available in the Project Area. All personnel are expected to take all reasonable action to prevent the occurrence of fires;
- Crews will follow PG&E’s latest guidelines described in Utility Standard TC-1464S, *Preventing and Mitigating Fires While Performing PG&E Work* (Pacific Gas and Electric Company 2022);

- For any hot work (welding, cutting, or heating) onsite, fire prevention and suppression tools (e.g., backpack-type water pumps, shovels) will be made available;
- Project vehicles will be equipped with appropriate fire response equipment and fire prevention and suppression tools;
- Construction crews will have the following equipment:
- One shovel, one axe, and one or more UL-rated 4BC extinguishers on each crew truck/vehicle;
- One shovel and one five-gallon, water-filled backpack pump with each welder; and
- One shovel and one fully charged chemical fire extinguisher at a point not more than 25 feet from the work site for each gasoline-powered tool, including rock drills.
- Fire extinguishers will be placed in easily accessible locations near potential ignition sources (e.g., internal combustion engines). Each vehicle and trailer will be equipped with a multi-purpose dry chemical extinguisher in a readily accessible location. All internal combustion engines brought onto the job site will be equipped with a spark arrestor;
- All personnel will perform daily inspections of work areas, laydown areas, and walkways to ensure they are clear of debris and trash and that flammable or combustible materials are not allowed to accumulate. All flammable liquids will be stored appropriately and at a safe distance from ignition sources. All flammable gas containers will be secured in an upright position with their valve caps in place at a safe distance from ignition sources;
- PG&E’s hot work permit process (Pacific Gas and Electric Company 2008) will be followed before any welding or cutting operations are performed. A fire watch will be stationed at the location of the hot work activity until at least 30 minutes after the completion of that activity, and will have either a portable fire extinguisher or water hose with a nozzle immediately available. The fire watch and person that will be performing the hot work will ensure that the area is safe for hot work before work will be allowed to begin. The hot work permit will be posted at the job site until hot work is complete;
- If there is a need to activate fire hazard response measures, project crews will be directed to the temporary construction emergency action plan (TCEAP) for response actions developed to respond to a potential fire near the Project Area.

The TCEAP will be developed prior to construction and will provide instructional evacuation orders and procedures.

2.6.4 BMP-4: Implement Traffic Control Plan

To avoid potential conflicts between members of the public and construction vehicles, a traffic control plan will be implemented that contains the following measures:

- Warning signs of construction activities and road closures will be posted along Tiger Creek Road between SR 88 and the Project Area;
- Flaggers will be used for traffic control along the portions of the construction access roads shared with the public as needed or when heavy construction traffic is expected. Alternatively, PG&E-managed roads such as Tiger Creek Road will be closed to the public as needed;
- The construction contractor will comply with Title 13 of the CCR, which includes idling restrictions on construction vehicles and equipment to no more than 5 minutes;
- Construction equipment and vehicles will be properly tuned and maintained;
- All on-street construction traffic will be required to comply with the local jurisdiction’s standard construction specifications; and
- To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

2.6.5 BMP-5: Implement Measures to Minimize the Spread/Introduction of Noxious Weeds

To minimize the spread and introduction of noxious weeds, PG&E will implement the following measures:

- Prior to mobilization to the Project Area, all equipment will be pressure-washed clean to ensure noxious weeds are not imported into or out of the Project Area. Equipment will be considered clean when there are no visible soils or plant parts on the equipment;
- Any erosion control measures required for the Proposed Project will be rice straw or come from certified weed-free sources, as practicable (e.g., certified weed-free straw wattles, mulch);
- Gravel and spoil piles will be maintained free of noxious weeds; and

- Areas known to be weed-free will be used for staging and laydown areas.

2.6.6 BMP-6: Implement Fugitive Dust Abatement Measures

To limit fugitive dust from project activities, PG&E will implement the following measures:

- Vehicle speeds will be limited to 15 miles per hour when traveling on unpaved roads;
- A water truck will be used full time to control dust on roads and in the laydown areas;
- The water truck will be equipped to provide a focused knockdown spray during excavation activities if excessive dust is created; and
- Other emission controls, such as covering stockpiles, will be used as needed.

Chapter 3
Environmental Setting and Impacts

3.1 Introduction

This chapter provides an overview of the existing physical environment and regulatory requirements for each of the resources that may be affected by the Proposed Project. For each resource, there is a discussion of the environmental setting, followed by an evaluation of the potential environmental impacts on the resource. This chapter is organized by resource topic and corresponds to the Environmental Checklist Form of the CEQA Guidelines. A complete environmental checklist from Appendix G of the CEQA Guidelines is provided in Appendix A, *Environmental Checklist*.

The mitigation measures specified in the impact analysis would either avoid potential adverse impacts completely or reduce the potential impacts to a less-than-significant level. The State Water Board would adopt a mitigation monitoring and reporting program at the time it adopts a mitigated negative declaration. The purpose of the program is to ensure that the mitigation measures adopted as part of the project approval would be implemented when the Proposed Project is constructed. Some potential impacts of the Proposed Project have been avoided or minimized by including certain BMPs in the project description (see Chapter 2, *Project Description*).

The following terminology is used to describe the level of significance of potential impacts:

- A finding of no impact is appropriate if the analysis concludes that the Proposed Project would not potentially affect the particular resource area in any adverse way;
- A potential impact is considered less than significant if the analysis concludes that the Proposed Project would cause no substantial adverse change to the environment and requires no mitigation;
- A potential impact is considered less than significant with mitigation incorporated if the analysis concludes that the Proposed Project would cause no substantial adverse change to the environment with the inclusion of mitigation measures; and
- A potential impact is considered significant and unavoidable if the analysis concludes that the Proposed Project could have a substantial adverse effect on

the environment, and mitigation to a less-than-significant level of impact is not feasible.

If a potential impact is determined to be significant and unavoidable, an environmental impact report would be prepared pursuant to section 15063 of the CEQA Guidelines.

3.2 Resources Upon Which the Proposed Project Would Have No Impact

This section discusses the resources for which there would be no potential impact and presents the supporting information for that finding.

3.2.1 Mineral Resources

Potential impacts of the Proposed Project related to mineral resources are discussed in the context of the CEQA Guidelines Appendix G checklist. Checklist section XII, *Mineral Resources*, asks whether the Proposed Project would result in any of the following conditions.

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. There are several types of mineral resources in Amador County including, but not limited to, clay, limestone, copper, gold, sand, and zinc (Amador County 2016). Refractory sand, clay, lode gold, talc, lignite, and aggregate materials are actively mined in Amador County (Amador County 2016). Although most of these mineral resources are located in the western portion of Amador County and lie to the west and south of the Project Area, there is a mineral resource zone with known or inferred deposits of lode gold and talc that overlaps with the western portion of the Cedar Mill staging area. However, there would be no activities in the Cedar Mill staging area that would interfere with access to any mineral resource or require ground disturbance. Therefore, the Proposed Project would not result in loss of or make unavailable state or locally important mineral resources. There would be no impact.

3.2.2 Population and Housing

Potential impacts of the Proposed Project related to population and housing are discussed in the context of the CEQA Guidelines Appendix G checklist. Checklist section XIV, *Population and Housing*, asks whether the Proposed Project would result in any of the following conditions.

a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

No Impact. The Proposed Project would not involve construction of any new housing or businesses. The only infrastructure or roads that would be constructed would be the spillway structure and affiliated components and a new access road to service the new spillway. The lands surrounding the Reservoir are zoned as "Timberland Preserve", and the Project Area is under a conservation easement that restricts development of the land. Therefore, no substantial unplanned population growth, either directly or indirectly, would result from Proposed Project implementation. There would be no impact.

b. Displace a substantial number of existing people or housing necessitating the construction of replacement housing elsewhere?

No Impact. The Proposed Project would not displace existing housing or residents because there are no homes within the Project Area; therefore, the construction of replacement housing would not be required. There would be no impact.

3.2.3 Public Services

Potential impacts of the Proposed Project related to public services are discussed in the context of the CEQA Guidelines Appendix G checklist. Checklist section XV, *Public Services*, asks whether the Proposed Project would result in the following condition.

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services: fire protection; police protection; schools; parks; or other public facilities?

No Impact. Public services in and around the Project Area consist of law enforcement, fire protection, and emergency medical assistance. The Reservoir is used by the public when the gates are opened (the Dam and Reservoir shoreline for fishing and the roadways for cycling); however, there are no formal recreation facilities or parks near the Project Area, and no swimming or boating is allowed in the Reservoir. Public access to the Project Area would be closed during construction.

The Proposed Project would construct a new spillway and implement other Dam improvements and would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities. Further, the Proposed Project would not result in any increase in the population or an increased demand for public services, including fire or police protection, or public facilities such as schools and parks. The Proposed Project would occur on undeveloped lands and not cause traffic delays that could potentially affect the deployment or an increase in response time of emergency services. BMP-4: *Implement Traffic Control Plan*, as described in Section 2.6, *Best Management Practices*, would ensure that emergency vehicle access would be maintained during construction.

Therefore, the Proposed Project would not affect public services. There would be no impact.

3.2.4 Recreation

Potential impacts of the Proposed Project related to recreation are discussed in the context of the CEQA Guidelines Appendix G checklist. Checklist section XVI, *Recreation*, asks whether the Proposed Project would result in any of the following conditions.

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. The Proposed Project comprises construction of a new spillway near the Dam’s right abutment, a permanent access road, new log boom, lighting, and abandonment of the existing spillway. The Proposed Project would not construct or expand any recreational facilities, and as described in Section 2.2.1.3 *Plunge Pool*, PG&E would maintain all Tiger Creek instream flow requirements downstream of the Dam throughout construction. The Proposed Project would therefore not affect any recreational uses downstream of the Project Area. Information about the instream flow requirements can be found in Section 3.3 *Hydrology and Water Quality*.

The Proposed Project would not increase the use of existing neighborhood or regional parks or other recreational facilities. PG&E has no license requirement to provide public access or recreational opportunities at the Reservoir and Dam, and has the authority to control access to the Project Area with locked gates. While the public is allowed to fish from the Dam and Reservoir shoreline when deemed safe by PG&E, there are no formal recreation facilities in the Project Area. No boating or contact with the water is allowed at the Reservoir. Camping and fires are also prohibited. Because there are no formal facilities, no substantial physical deterioration of any recreational facilities would occur or be accelerated as a result of the Proposed Project. There would be no impact.

3.2.5 Utilities and Service Systems

a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

c. Result in a determination by the wastewater treatment provider that 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. The Proposed Project comprises construction of a new spillway near the Dam's right abutment, a permanent access road, new log boom, lighting, and abandonment of the existing spillway. Neither water nor wastewater treatment would be part of the Proposed Project because it does not involve the development of infrastructure needing water or wastewater treatment. The Proposed Project would require the construction of a drainage ditch along the inboard side of the new permanent access road, and this ditch is analyzed as part of the Proposed Project in this IS/MND. The drainage ditch would not connect to any municipal stormwater drainage networks and no feature of the Proposed Project would require the relocation or expansion of existing stormwater drainage facilities. Although a water supply during construction would be required to implement BMP-6: *Implement Fugitive Dust Abatement Measures*, to control dust on roads, in the laydown areas, and during excavation activities (if excessive dust is created), this water supply requirement would be temporary and sufficient water supplies would be available for this purpose. No natural gas, telecommunications, or electric power facilities would be constructed or relocated as part of implementation of the Proposed Project. Cofferdam construction and removal, as well as the abandonment of the existing spillway, would occur during regularly scheduled power generation outages at the Tiger Creek Powerhouse in 2025 and 2026. The temporary power outages allow maintenance and construction personnel to safely work on the generators at the powerhouse while they are de-energized. These brief disruptions would occur regardless of Proposed Project construction and do not require construction of additional utilities. There would be 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?

e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. Construction of the Proposed Project would generate soil and rock spoils, which would be permanently disposed of at the Doakes Ridge staging and spoils site. All other construction debris would be removed from the Project Area and disposed of at a permitted waste collection site with sufficient capacity to accept the debris and in accordance with federal, state, and local management and reduction statutes and regulations related to solid waste. There would be no impact.

3.3 Hydrology and Water Quality

3.3.1 Introduction

This section analyzes the Proposed Project's potential impacts related to hydrology and water quality. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for hydrology and water quality, and it analyzes the potential for the Proposed Project to affect these resources.

3.3.2 Area of Analysis

The Area of Analysis for hydrology and water quality is the same as the Project Area, with a focus on the Dam, the spillway, and Tiger Creek downstream of the spillway.

3.3.3 Existing Conditions

This section discusses the existing conditions related to hydrology and water quality in the Area of Analysis. The Dam is at the Reservoir on Tiger Creek, approximately 24 miles northeast of the city of Jackson in Amador County, California (Figure 1-1, *Project Location*). The elevation of the Dam is approximately 3,500 feet above mean sea level (MSL).

3.3.3.1 Regional Setting

The Area of Analysis is within the San Joaquin River Hydrologic Region, which encompasses an area of approximately 9.7 million acres (15,200 square miles) and includes all of Calaveras, Tuolumne, Mariposa, Madera, San Joaquin, and Stanislaus Counties; most of Merced and Amador Counties; and parts of Alpine, Fresno, Alameda, Contra Costa, Sacramento, El Dorado, and San Benito Counties (California Department of Water Resources 2003:169). The Area of Analysis is within the Upper Mokelumne Watershed (United States Geological Survey Hydrologic Unit Code No. 18040012) (United States Geological Survey 2020).

3.3.3.2 Surface Water Hydrology

Reservoir Description

The Dam is located on Tiger Creek, a tributary to the North Fork of the Mokelumne River thence the San Joaquin River. There are no hydroelectric facilities directly related to the Dam; rather, it is operated primarily for seasonal storage and regulation of water for power generation farther downstream. The Reservoir has a design storage capacity of approximately 360 acre-feet at current normal maximum reservoir level. PG&E typically operates the Reservoir within the upper 10 feet of storage capacity, and controls inflow and outflow for power generation downstream at the Tiger Creek Powerhouse. Elevations in the Area of Analysis range from approximately 3,500 feet above MSL at the Reservoir to 5,700 feet above MSL (at Armstrong Hill near Ham's Station on SR 88) in the surrounding foothills.

The Dam is a 110-foot-high, 486-foot-long concrete slab-and-buttress structure with a crest width of 5 feet. The upstream slab has a 45-degree slope. There are 23 buttresses with a typical center-to-center spacing of 18 feet and a maximum upstream/downstream foundation base width of 125 feet. The buttresses are founded on phyllite with some sandstone. The Dam has an existing spillway structure at its left abutment that includes the reinforced concrete features shown on Figure 1-2, *Existing Spillway Details*.

Reservoir Operations

In addition to inflow from the Tiger Creek watershed (which has a drainage area of approximately 14 square miles and includes the Sweetwater Creek, upper Tiger Creek, and Little Tiger Creek drainages), the Reservoir is fed by diversion from the Mokelumne River at the Salt Springs Powerhouse tailrace via the Upper Tiger Creek Conduit, which discharges into the Reservoir approximately 500 feet upstream of the Dam along the left shoreline (facing downstream).

PG&E releases water from the Reservoir into Tiger Creek through a LLO at the base of the Dam, which consists of a 30-inch-diameter pipe with a manually operated slide gate at the upstream end of the pipe and a manually operated gate valve at the downstream end of the pipe. The LLO pipe has a 16-inch-diameter bypass line for instream flow releases that is controlled by a remotely operated knife-gate valve. The instream flow release valve is adjusted automatically based on flows measured at the M-76 weir downstream of the Dam. Tiger Creek joins the North Fork Mokelumne River approximately four miles downstream of the Dam near the Tiger Creek Powerhouse where it flows into the Tiger Creek Afterbay. PG&E also releases water from the Reservoir into the Lower Tiger Creek Conduit, which feeds into the Tiger Creek Forebay approximately three miles downstream of the Dam and provides water for power generation at the Tiger Creek Powerhouse.

3.3.3.3 Tiger Creek Channel Characteristics

Approximately 1,850 feet of Tiger Creek downstream of the Dam was visually assessed by a geomorphologist with an expertise in hydrology in April 2023. The purpose of the visual assessment was to classify the channel type(s) (per the methodology of Buffington and Montgomery [2022]) and the degree of channel stability (per the methodology of Cluer and Thorne [2013]) to aid in the analysis of potential impacts.

On the basis of the results of the geomorphic assessment, Tiger Creek downstream of the Dam is considered a “transport segment”, composed of morphologically resilient, supply-limited reaches (e.g., bedrock, cascade, step-pool) that rapidly convey increased sediment and water inputs. The channel in the Area of Analysis is dominated by cascade (predominantly bedrock-composed), step-run (a sequence of runs separated by short riffle steps where substrate is usually cobble- and boulder-dominated) step-pool, and plane-bed (smooth channel bed with limited complexity) morphologies. These findings correlate with the initial observations of this segment of Tiger Creek being classified as a transport segment, per the April 2023 visual assessment.

A stream evolution model (SEM) was applied to Tiger Creek downstream of the Dam to provide a template for understanding geomorphic responses and processes (and overall present-day and predicted future channel stability) within the immediate watershed. According to the SEM, the channel in the Area of Analysis is most likely a Stage 1 sinuous single thread channel, where the channel form and close connectivity to the floodplain and groundwater areas generally equate to a high resilience to disturbance such as flooding and introduction of excess sediment.

Streamflows on Tiger Creek downstream of the Dam are measured and recorded at the stream gaging station (the M-76 weir) located approximately 180 feet downstream of the Dam face. Streamflow varies seasonally with low flows occurring during late fall and winter, and high flows occurring during spring and early summer when releases from the Reservoir are made.

3.3.3.4 Doakes Ridge Staging and Spoils Site and Cedar Mill Staging Area

No mapped (or surveyed) drainages occur on the Doakes Ridge staging and spoils site, which is located on a ridge approximately 0.8 mile south of the Dam. In the Cedar Mill staging area, however, the headwater channel of Sutter Creek (mapped as South Branch Sutter Creek) runs in a westerly direction through the staging area. The creek is considered an intermittent waterbody in this location.

3.3.3.5 Federal Energy Regulatory Commission and United States Forest Service Operating Conditions

On October 11, 2001, FERC issued a new license for the Mokelumne Project No. 137-CA. The FERC license included the following United States Forest Service conditions requiring minimum instream flows downstream of the Dam.

> The Licensee shall provide a continuous 48-hour pulse flow event of 35 cfs in Tiger Creek below Tiger Creek Regulator Dam in each of February and March in all water year types.

In addition, Table 3.3-1 lists the required instream flows in Tiger Creek downstream of the Dam at the M-76 weir. The flow requirements are the same for all water year types. There are no water control structures and therefore no flow regulations on Tiger Creek upstream of the Reservoir.

Table 3.3-1. Monthly Instream Flow Requirements Downstream of the Tiger Creek Regulator Dam

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Required Instream Flow (cfs)	3	5	5	7	7	12	12	9	5	5	3	3

3.3.3.6 Surface Water Quality

The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (SR/SJR Basin Plan) describes beneficial uses for various waterbodies in the San Joaquin River Hydrologic Region (Central Valley Regional Water Quality Control Board 2019) and establishes numeric and narrative water quality objectives necessary for the protection of those beneficial uses. The Area of Analysis is considered to be located within the “Sources to Pardee Reservoir” waterbody. Table 3.3-2 shows the beneficial uses for this waterbody as listed in the SR/SJR Basin Plan. Table 3.3-3 identifies the numeric and narrative water quality objectives from the SR/SJR Basin Plan that are applicable to the Proposed Project. Section 303(d) of the CWA established the total maximum daily load process to assist in guiding the application of state water quality standards. Section 303(d) requires states to identify streams in which water quality is impaired (i.e., affected by the presence of pollutants or contaminants) and to establish the total maximum daily load, which is the maximum quantity of a particular contaminant that a waterbody can assimilate without experiencing adverse effects. There are no CWA 303(d) listed impairments for the Reservoir, Tiger Creek, upper Mokelumne River, or Sutter Creek based on the *2020–2022 California Integrated Report* (State Water Resources Control Board 2023).

Table 3.3-2. Designated Beneficial Uses for Surface Waterbodies in the Proposed Project Vicinity

Water Body	Designated Beneficial Uses
Sources to Pardee Reservoir	Municipal and domestic supply; power; contact recreation; canoeing and rafting; other non-contact water recreation; warm and cold freshwater habitat (resident fish); warmwater fish[a] migration; coldwater fish[b] migration and spawning habitat; wildlife habitat.

Source: Central Valley Regional Water Quality Control Board 2019 (Table 2-1)
[a] Striped bass, sturgeon, and shad.
[b] Salmon and steelhead.

Table 3.3-3. Numeric and Narrative Water Quality Objectives for Surface Waterbodies in the Proposed Project Vicinity

Numeric Water Quality Objectives	
Bacteria	For waters designated for contact recreation, the fecal coliform concentration based on a minimum of not less than 5 samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than 10 percent of the total number of samples taken during any 30-day period exceed 400/100 ml.
Chemical Constituents	Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. For water designated for use as domestic or municipal supply, waters shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in Title 22 of the California Code of Regulations. Additionally, water designated for use as domestic or municipal supply shall not contain lead in excess of 0.015 mg/l.
Dissolved Oxygen	For surface waterbodies outside the legal boundaries of the Delta, the monthly median of the mean daily dissolved oxygen (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. The dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time:

	• Waters designated WARM 5.0 mg/l • Waters designated COLD 7.0 mg/l • Waters designated SPWN 7.0 mg/l
pH	The pH shall not be depressed below 6.5 nor raised above 8.5,
Pesticides	Waters designated for use as domestic or municipal supply shall not contain concentrations of thiobencarb in excess of 1.0 μg/l.
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 Board that such alteration in temperature does not adversely affect beneficial uses. At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than five degrees Fahrenheit above natural receiving water temperature.
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 one NTU, controllable factors shall not cause downstream turbidity to exceed two NTU. • Where natural turbidity is between one and five NTUs, increases shall not exceed one 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 NTUs. • Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.
Narrative Water Quality Objectives	
Biostimulatory Substances	Water shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
Color	Water shall be free of discoloration that causes nuisance or adversely affects beneficial uses.
Floating Material	Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses.

Oil and 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	• No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. • Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses. • Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the United States Environmental Protection Agency or the Executive Officer of the Regional Water Board. • Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 C.F.R. section 131.12.). • Pesticide concentrations shall not exceed the lowest levels technically and economically achievable. • Waters designated for use as domestic or municipal supply shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.
Radioactivity	Radionuclides shall not be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
Settleable Material	Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
Suspended Material	Waters shall not contain suspended material in concentrations that cause 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 or to 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.

Source: Central Valley Regional Water Quality Control Board 2019
Notes: ml=milliliter; mg/L=milligrams per liter; µg/l=micrograms per liter; NTU=nephelometric turbidity unit

No spatial and temporal water quality information specific to surface flows for Tiger Creek in the Area of Analysis is available; however, the United States Environmental Protection Agency (USEPA) describes the waterbody condition of Tiger Creek as "Condition Unknown" (United States Environmental Protection Agency 2023). The water draining to and from Tiger Creek is likely to be of high quality because of the remote and undisturbed condition of the landscape. Furthermore, based on field reconnaissance, water quality parameters such as water temperature, water clarity values, and dissolved oxygen all indicate healthy water quality conditions for aquatic organisms throughout Tiger Creek upstream and downstream of the Dam.

3.3.3.7 Groundwater Hydrology and Quality

The California Department of Water Resources delineates groundwater basins throughout California under the State's Groundwater Bulletin 118 (California Department of Water Resources 2003). The entirety of the Proposed Project (including the staging areas) is not located in a groundwater subbasin or basin because it is situated in the foothills of the Sierra Nevada range. The nearest groundwater basins are located to the west, closer to the valley floor. Consequently, limited spatial or temporal water quality information specific to groundwater in the Area of Analysis is available.

However, based on limited piezometer data from the 2020 geotechnical investigations, Cotton, Shires and Associates (2023:10-11) concluded that there is relatively shallow regional groundwater in the vicinity of the spillway and adjacent to the Dam (ranging from 5.2 to 14.9 feet). Cotton, Shires and Associates note that the groundwater surface at piezometer CSA/SD-4, adjacent to the Dam and proposed spillway crest structure, appears to correspond to the Reservoir level, and that the groundwater surface at piezometer CSA/SD-8, located in the fill prism at the end of the proposed spillway, indicates that the fill prism is saturated in this location (Cotton, Shires and Associates 2023:11).

3.3.4 Regulatory Setting

3.3.4.1 Federal

The following federal regulations related to hydrology and water quality would apply to the Proposed Project.

Clean Water Act

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. It operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit. Permit review is the CWA's primary regulatory tool under the following sections.

- Section 404 regulates the discharge of dredged and fill materials into waters of the United States, which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Project proponents must obtain a permit from USACE for all discharges of dredged or fill material into waters of the United States before proceeding with a proposed activity. The Reservoir and, potentially, other features affected by the Proposed Project are jurisdictional waters of the Unites States and would be subject to section 404 regulation. Additional discussion of the waters of the United States in the Area of Analysis is provided in Section 3.5 *Biological Resources*.
- Section 402 regulates discharges to surface waters through the NPDES program, administered by USEPA. In California, the State Water Board is authorized by USEPA to oversee the NPDES program through the Regional Water Quality Control Boards (Regional Water Boards). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits. A SWPPP and pollution prevention and monitoring program would be required for construction of the Proposed Project to comply with the Construction Stormwater General Permit and General Dewatering Permit, respectively, under section 402.
- Section 401, under which applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate.

The State Water Board is the state agency with primary responsibility in California for implementing the CWA, which establishes regulations relating to water resources issues. Typically, all regulatory requirements are implemented by the State Water

Board through nine Regional Water Boards established throughout the state. The Central Valley Regional Water Board, discussed in Section 3.3.4.2 *State*, is responsible for regulating discharges to the Mokelumne River and its tributaries.

Federal Energy Regulatory Commission Seismic Safety Policy Standards

The Dam is operated by PG&E as part of the Mokelumne River FERC No. 137 Project, which is licensed by FERC. FERC's seismic safety policy standards are contained within their regulations, guidelines, and manuals pertaining to dam safety and inspections, specifically Chapter 13, Evaluation of Earthquake Ground Motions, of *Engineering Guidelines for the Evaluation of Hydropower Projects* (Federal Energy Regulatory Commission 2018) and *Federal Guidelines for Dam Safety, Earthquake Analyses and Design of Dams* (Federal Emergency Management Agency 2005).

The Dam is currently classified as a high hazard potential dam under the FERC guidelines.

3.3.4.2 State

The following state regulations related to hydrology and water quality would apply to the Proposed Project.

Porter-Cologne Water Quality Control Act of 1969

The Porter-Cologne Water Quality Control Act established the State Water Board and nine Regional Water Boards as the primary state agencies with regulatory authority over California water quality and appropriative surface water rights allocations. Under this act and the CWA, the State is required to adopt a water quality control policy and waste discharge requirements to be implemented by the State Water Board and nine Regional Water Boards. The State Water Board also establishes basin plans and statewide plans. The Regional Water Boards carry out State Water Board policies and procedures throughout the state. Basin plans designate beneficial uses for specific surface water and groundwater resources and establish water quality objectives to protect those uses.

Central Valley Regional Water Quality Control Board

The Central Valley Regional Water Board is responsible for implementing its basin plan (2019) for the Sacramento River and its tributaries, which includes the Mokelumne River and its tributaries. The SR/SJR Basin Plan identifies beneficial uses of the river and its tributaries and water quality objectives to protect those uses. Numerical and narrative criteria are contained in the SR/SJR Basin Plan for several key water quality constituents, including dissolved oxygen, pH, water temperature, trace metals, turbidity, suspended material, pesticides, salinity, and radioactivity.

California Water Code, Division 3, Chapter 5, Article 1

The DSOD has oversight and approval authority for structures considered a dam under the California Water Code. Dams under DSOD jurisdiction are artificial barriers more than 6 feet high impounding more than 50 acre-feet of water or more than 25 feet high impounding more than 15 acre-feet. Additionally, some levees qualify as “dams” (California Water Code section 6002) and are required to meet DSOD standards and design review requirements.

DSOD reviews and approves proposed dam enlargements, repairs, alterations, and removals to ensure that a dam and appurtenant structures are designed to meet minimum requirements. It performs independent analyses to understand dam and appurtenant structure performance, including structural, hydrologic, hydraulic, and geotechnical evaluations. DSOD also oversees construction of dams to ensure that the work is done in accordance with the approved plans and specifications. Dams are inspected by DSOD on an annual basis to ensure their safety.

Under California Water Code, Division 3, Chapter 5, Article 1 (New Dams and Reservoirs or Enlargements of Dams and Reservoirs), applicants must provide DSOD information about the location, type, size, height, storage capacity, and hydrologic conditions related to a dam. DSOD may also require reports on the materials used to construct the dam; exploratory pits, trenches, and adits; drilling, coring, and geophysical surveys; tests to determine leakage rates; and physical test results on the in-situ properties and behavior of the foundation materials at the dam site.

The Dam is currently classified as a high hazard potential under DSOD guidelines.

3.3.4.3 Local

Amador County General Plan

Water Supply and Water Quality

The Amador County General Plan Conservation Element, Section C, addresses hydrology and water quality (Amador County 2016). It includes the following goal related to surface water quality:

- **Goal C-4:** Minimize negative effects of point and non-point sources on water quality.

3.3.5 Environmental Effects

Potential impacts of the Proposed Project related to hydrology and water quality are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section X, *Hydrology and Water Quality*, asks whether the Proposed Project would result in any of the following conditions.

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less than Significant with Mitigation Incorporated. Implementation of the Proposed Project has the potential to affect water quality in the Area of Analysis. Sources of bacteria, biostimulatory substances, chemical constituents in excess of maximum contaminant levels, colorants, floating material, pesticides, radioactivity, and taste- and odor-causing compounds would not be associated with the Proposed Project and are not addressed further in this analysis. Dissolved oxygen within the Reservoir and in Tiger Creek would not be affected during construction because nutrients or other constituents that may substantially increase oxygen demand in these surface waterbodies would not be purposefully or inadvertently released. Similarly, water temperature within the Reservoir would not be affected by the Proposed Project. Although construction of the spillway would require construction activities to occur in a small area within the Reservoir footprint isolated by a cofferdam, construction of the cofferdam would occur in the dry while the Reservoir water level is lowered during a routine planned outage. Spillway construction would occur behind the cofferdam while the Reservoir is operated at normal water levels and would not directly affect water temperature or indirectly affect water temperature via a change in Reservoir operations. Excavation of a portion of the plunge pool in Tiger Creek would require diverting stream flow around the work area through either a 250- or 400-foot-long, 16-inch-diameter bypass pipe to a location downstream. Diverting Tiger Creek stream flow in this way would not be expected to substantially alter water temperature downstream because water travel time through the pipe would be relatively short and the bypass pipe would shield the water from the warming effects of solar radiation somewhat relative to the creek bed. PG&E would maintain all Tiger Creek instream flow requirements downstream of the Dam throughout construction (see Table 3.3-1).

Implementation of the Proposed Project could affect water quality and beneficial uses of surface waterbodies during construction primarily through the use of chemicals and materials required for construction and by causing soil erosion resulting from ground-disturbing earthwork. Accordingly, the Proposed Project could affect the following water quality parameters for which there are established water quality objectives: pH, toxicity, oil and grease, turbidity, settleable material, and suspended sediment, as discussed below.

Construction of the Proposed Project would require the use of concrete and grout, as well as chemicals such as fuels and lubricants for the operation of construction equipment and vehicles. Grout would be used at the cofferdam upstream of the proposed spillway crest and concrete would be used for spillway construction. Cementitious materials (e.g., uncured concrete and grout) and associated wastewater from washing out concrete trucks, pumps, and chutes is alkaline (high pH) and can adversely affect water quality and aquatic organisms if discharged to surface waters (California Water Boards 2019). As discussed in Section 3.10 *Hazards and Hazardous Materials,* fuels and lubricants (e.g., oil, grease) from vehicles and construction equipment could potentially be released into the environment at construction sites, including directly or indirectly into nearby surface waters. As part of BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans*, PG&E will ensure that concrete, fuels, and other chemicals will not be rinsed or washed into the Reservoir, drainages, or wetlands. In addition, implementation of BMP-2: *Implement Hazardous Materials Control Measures*, will minimize the potential for the inadvertent release of hazardous materials (e.g., fuel), hydraulic oil, motor oil and other lubricants, and cementitious materials (described in Chapter 2, *Project Description*).

Ground-disturbing earthwork associated with the Proposed Project components in the Area of Analysis could increase soil erosion rates and loss of topsoil, thereby potentially violating water quality objectives for turbidity, suspended sediment and settleable material for the Reservoir and Tiger Creek. However, as described in Chapter 2, all excavation and construction activities associated with construction of the crest structure, the notch through the existing Dam, the concrete chute, the flip bucket with splitter blocks, the constructed plunge pool, the cofferdam (king pile wall), as well as construction of the new permanent access road would occur in the dry and no discharge of excavated material into the Reservoir, Tiger Creek, or any other waterbody or wetland would occur. The exception to this, however, is the placement of roughly 500 CY of rock slope protection along the banks of the existing plunge pool to create stable platforms for a temporary bridge crossing.

Spoils that would be generated from the Proposed Project include:

- approximately 3,000 CY from the crest structure foundation excavation;
- approximately 12,000 CY of soil and rock spoils from excavation for the spillway chute and flip bucket;
- approximately 9,000 CY of soil and rock spoils from the plunge pool excavation;

- approximately 1,500 CY of soil and rock from the Reservoir excavation to create the cutoff trench for the cofferdam (king pile wall) installation; and
- the generation of approximately 11,000 CY of soil and rock spoils from the construction of the new access road.

All the associated spoils would be permanently disposed of at the Doakes Ridge staging and spoils site. The spoils would be spread out, compacted, and graded in a manner that would allow the area to be useable in the future. Erosion control BMPs will be implemented in accordance with the Proposed Project’s SWPPP, which is described in Section 2.6.1, BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans* and summarized in the following paragraphs.

To excavate the portion of the plunge pool located in Tiger Creek, streamflows would need to be diverted around the work area and PG&E would select one of two options for bypassing streamflows (i.e., 400-foot-long bypass pipe connection to the LLO pipe or to a 250-foot-long bypass pipe originating at the M-76 stream gage weir; described in Chapter 2, *Project Description*). Under both options, the bypass pipes would run parallel to Tiger Creek to the discharge location downstream of the plunge pool. Dewatering pumps may be required within the excavation area to keep the site dry. If pumping is required, either for dewatering or for the M-76 weir bypass option, and if it has the potential to discharge turbid water to Tiger Creek, a filter would be installed, as part of implementation of BMP-1, to reduce the potential for elevated turbidity in the creek. In addition, as part of BMP-1, PG&E will monitor turbidity levels at multiple locations within Tiger Creek including, but not limited to: (1) immediately upstream of the plunge pool diversion, and (2) up to 300 feet downstream of the plunge pool diversion. As described in Chapter 2, BMP-1 also includes compliance with the NPDES stormwater permit program and with applicable construction BMPS specified in PG&E’s Activity Specific Erosion and Sediment Control Plans, and the installation of barriers at all laydown sites to ensure construction equipment, construction personnel, and runoff do not enter adjacent sensitive areas, including Sutter Creek in the Cedar Mill staging area. Lastly, implementation of BMP-6: *Implement Fugitive Dust Abatement Measures* (described in Chapter 2) will help prevent dust and other particulate matter from entering the Reservoir and other surface waters in the Area of Analysis during construction.

To minimize potential instream suspended sediment and associated turbidity, as well as sedimentation effects of placement of roughly 500 CY of rock slope protection along the banks of the existing plunge pool, the strategies described below under Mitigation Measure WQ-MM-1 would be implemented.

The BMPs and Mitigation Measures WQ-MM-1 and WQ-MM-2 would minimize the introduction of construction-related contaminants and mobilization of sediment into waters in and adjacent to the Area of Analysis and ensure that water quality standards and waste discharge requirements are not violated. With adherence to BMP-1, BMP-2, BMP-6, and Mitigation Measures WQ-MM-1 and WQ-MM-2, this potential impact would be less than significant.

Mitigation Measure WQ-MM-1: Implement Sediment Control Measures along Downstream Edge of Existing Plunge Pool prior to Rock Slope Protection Placement

Prior to rock slope protection (riprap or similar material) placement on either bank of the existing plunge pool, PG&E and/or its contractor shall install a silt curtain or implement other appropriate sediment control measures, such as clean gravel bags or sand bags, around the downstream edges of the plunge pool as a barrier to sediment movement. Lowering the plunge pool's water level by pumping water into water trucks and using it for dust suppression could also be implemented. The sediment control measures shall be determined by PG&E's Water Quality Specialists based on field conditions at the time of construction. The purpose of the silt curtain or other appropriate measures is to contain any sediment dislodged during the placement of rock slope protection within the existing plunge pool perimeter and not allow it to enter Tiger Creek. The sediment control measures shall not be removed until all associated temporary bridge construction activities are complete (i.e., the rock slope protection is tamped in, and the temporary bridge is in place). If a significant summer storm is forecasted that could reengage the existing spillway during rock slope protection placement activities, then sediment control measures, such as plastic sheeting, fiber roll, or erosion control blanket, shall be installed and all construction activity shall immediately stop until the storm has passed and any associated runoff into the existing plunge pool has ceased.

Mitigation Measure WQ-MM-2: Develop and Implement a Water Quality Monitoring and Adaptive Management Plan

PG&E shall develop a Water Quality Monitoring and Adaptive Management Plan (Water Quality Plan) in consultation with Central Valley Regional Water Quality Control Board and State Water Board staff. The Water Quality Plan shall include monitoring protocols to ensure BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans* and Mitigation Measure WQ-MM-1 prevent construction activities from violating water quality objectives identified in the SJR/SR Basin Plan. The Water Quality Plan shall also include adaptive management procedures to develop and implement new water quality protection measures with Central Valley Regional Water Quality Control Board and State Water Board staff if construction violates water quality objectives. PG&E shall not commence construction until the State Water Board Deputy Director of the Division of Water Rights approves the Water Quality Plan.

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. Most construction activities, including construction of the permanent access road, the crest structure, the notch through the existing Dam, and the cofferdam (king pile wall) are not expected to encounter the local groundwater table because of the surficial nature of the construction activities and the time of year when these activities would occur. Dewatering is not anticipated for any of these construction activities.

However, excavation associated with the constructed plunge pool, spillway chute, and flip bucket may encounter the local groundwater table because of the relatively shallow local groundwater in the vicinity, and dewatering activities may be necessary within the excavation area to keep the site dry. However, dewatering activities would be temporary, there are no mapped groundwater basins in the vicinity (California Department of Water Resources 2003), nor are there local users who rely on the local groundwater.

Furthermore, the Proposed Project activities in these (potential) dewatering areas would not involve groundwater extraction or induce significant lowering of the local groundwater table.

These activities would therefore not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Proposed Project may impede sustainable groundwater management of the basin. This potential impact would be less than significant.

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:

1. Result in substantial erosion or siltation on or off site?

2. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?

Less than Significant. Under the Proposed Project, PG&E proposes construction of the crest structure, the notch through the existing Dam, the spillway chute, the flip bucket with splitter blocks, the constructed plunge pool, and the cofferdam (king pile wall). Following completion of construction activities, the temporarily affected portions of the Area of Analysis would be returned, as much as is reasonably practicable, to their original condition. After Proposed Project construction, the new spillway and the final grading of the spillway construction area would resemble a condition similar to pre-Proposed Project condition, except for the presence of the new spillway and its associated features. Drainage patterns upstream of the Dam would remain unchanged. Downstream, the new spillway would function similarly to the existing spillway and discharge water during high flow events, while the former spillway would be abandoned[1]. It is expected that the existing drainage patterns (i.e., channel planform and stability) of Tiger Creek downstream of the new plunge pool (which would act to dissipate a substantial amount of stream energy before the water spills into the natural channel) would remain relatively unchanged and intact after spillway and plunge pool construction due to the local bedrock control, its morphologically resilient nature, its presumed high resilience to disturbance, and because the same river processes that have been ongoing since the original spillway was constructed would continue in a similar fashion (albeit in a different spillway location).

For the temporary access road along Tiger Creek, fill material or a combination of fill and pre-cast concrete blocks would be used at each abutment of the three temporary bridges crossing Tiger Creek to support them and keep them out of the

[1] As described in Chapter 2, the three parts of the existing spillway (bathtub inlet, siphon structure, and chute) would be permanently abandoned once the new spillway is operational. The bathtub inlet would be capped with a steel plate or reinforced concrete slab. Bulkheads would be installed on the upstream side of the three siphon intakes and vent pipes. The existing spillway chute would be abandoned in place, and the concrete canal wall would be extended across the side channel spillway weir and the radial gate would be removed. Abandonment activities would occur during the planned spring 2026 annual outage to allow full access to the spillway approach channel (outlet channel) and to the Lower Tiger Creek Conduit.

stream, thereby not compromising the existing channel planform or stability of the creek. The temporary bridges would be designed to pass the expected maximum flow during construction. The temporary access road would be allowed to revegetate and return to its pre-Proposed Project condition once construction is complete. In addition, the proposed road follows a previously used alignment that was abandoned in the early 2000s, though remnants of the road remain. Accordingly, improvement (e.g., tree removal, grading, and road base installation) of the temporary road is expected to be minimal.

A temporary bridge over the existing plunge pool downstream of the existing spillway would also be required. Installation of this temporary bridge would require permanent placement of roughly 500 CY of rock slope protection along the banks of the existing plunge pool to create stable platforms (approximately 250 CY on each bank). While the rock slope protection would be tamped down into the banks, it could nonetheless present a new flow obstruction within the plunge pool and have the potential to alter the local hydraulics and associated geomorphic processes immediately downstream towards the existing plunge pool's confluence with Tiger Creek. However, there would still be ample room in the plunge pool to dissipate the energy of spillway flows. Any associated geomorphic changes to the channel downstream of the rock slope protection placement areas are expected to be minimal and in line with the ongoing geomorphic processes that take place in this area during high flow events.

Additional temporary access trails would be required to allow construction equipment to reach different areas along the spillway chute. These trails would spur off the new permanent access road (discussed in more detail below) and the temporary access road. These other temporary routes would also be returned, as much as is reasonably practicable, to their original condition (and be subject to erosion control as described immediately below).

For the permanent access road, the existing drainage pattern of the area (i.e., hillslope and ridge environs) would be altered from the existing conditions; however, alteration of the course of a stream or river would not occur as a result of this new road as it would be located well upslope of Tiger Creek. Furthermore, the permanent access road would not be impervious; rather, it would consist of six inches of aggregate base rock. In addition, as discussed in the following paragraphs, the permanent access road would be sloped inboard to collect runoff in a drainage ditch that would discharge downslope through culverts, and the outfall of the culverts would be armored to protect against erosion.

Finally, PG&E will comply with all applicable erosion control requirements as specified in BMP-1: *Implement Water Quality Protection Measures and Erosion and*

Sediment Control Plans. The requirements include compliance with the NPDES stormwater permit program and preparation and implementation of a SWPPP, which includes a description of site characteristics (e.g., runoff, streamflow characteristics, and soil erosion hazard) and construction procedures and techniques to minimize alterations to the landscape and local natural drainages). Implementation of BMP-1 will minimize the alteration of existing drainage patterns within the Area of Analysis and ensure that the Proposed Project would not increase the rate or amount of surface runoff in a manner that would result in flooding or substantial erosion or siltation on or off site. With adherence to BMP-1, and on the basis of the previous discussion regarding post-Proposed Project conditions being similar in topography and bathymetry to pre-Proposed Project conditions, this potential impact would be less than significant.

3. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant. The Proposed Project would not alter the capacity of existing or planned stormwater drainage systems. In addition, the Proposed Project would not provide substantial additional sources of polluted runoff, and most areas would return to their original, pre-Proposed Project condition, as described under checklist item *c*. The new permanent access road would be constructed to connect Tiger Creek Road to the right abutment of the Dam just above the new spillway crest structure. The road would be 15 feet wide and would include a combination of cut slopes and retaining walls throughout most of the alignment. The road surface would consist of six inches of aggregate base rock, it would be sloped inboard to collect runoff in a drainage ditch that would discharge downslope through culverts, and the outfall of the culverts would be armored to protect against erosion. The design of the new access road is therefore not expected to provide substantial additional sources of polluted runoff or sediment via drainage or landscape alteration. This potential impact would be less than significant.

4. Impede or redirect flood flows?

Less than Significant. The principal purpose of the Proposed Project is to improve the stability of the Dam by constructing a new spillway to successfully pass design flood flows. After the Proposed Project is constructed, most areas would return to their original, pre-Proposed Project condition, as described under checklist item *c*. Thus, the Proposed Project would not represent an impediment to the existing flood potential nor redirect any flood flows beyond redistributing then from the old spillway to the new spillway. For the placement of roughly 500 CY of rock slope protection along the banks of the existing plunge pool, these flow obstructions would not cause any significant changes to downstream flows (McGuckin pers. comm). This potential impact would be less than significant.

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less than Significant. As the Proposed Project, upon completion, would not alter the extent or depth of the lake, it would not cause an increase in the pre-existing seiche inundation hazard nor the pre-existing mudflow hazard. The Area of Analysis is far from the coastline of the Pacific Ocean, and so there is no tsunami hazard.

Various Proposed Project elements (including the cofferdam, the temporary streamflow bypass, and, if needed, the dewatering pumps) would be implemented to avoid inundation of the Area of Analysis. Furthermore, all excavation and construction activities associated with construction of the crest structure, the notch through the existing Dam, the spillway chute, the flip bucket with splitter blocks, the constructed plunge pool, the cofferdam (king pile wall), as well as construction of the new permanent access road would occur in the dry. As such, inundation itself would be avoided. Lastly, after construction (during operation) there would not be any more potential pollutants present in the Area of Analysis compared to baseline (existing) conditions.

As discussed for checklist item *a*, PG&E will comply with all applicable construction site BMPs as specified in BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans*, and BMP-6: *Implement Fugitive Dust Abatement Measures*. Compliance with these BMPs would substantially reduce the potential for construction-related erosion, sedimentation, and turbidity to adversely affect water quality in the Area of Analysis.

The Proposed Project would involve the storage and use of hazardous materials near the Dam (or in areas that drain to the Dam or Tiger Creek), which could result in discharge of these substances into the associated waterbodies. Construction activities would involve the use of heavy machinery, excavators, compactors, and other construction equipment that use petroleum products such as fuels, lubricants, hydraulic fluids, and coolants, all of which can impair water quality and be toxic to fish and other aquatic organisms. Contamination of lakebed and channel bed and banks could result from construction activities, spills, or equipment malfunction. Spills of petroleum products and other pollutants related to machinery could occur during vehicle operation, refueling, parking, and maintenance. Improper handling, storage, or disposal of these materials could cause degradation of surface water quality if they are eventually washed into downstream waterbodies. However, PG&E will comply with all applicable construction site hazardous materials control measures as specified in BMP-2: *Implement Hazardous Materials Control Measures* (described in Chapter 2, *Project Description*, and Section 3.10.5 *Environmental Effects*) to ensure the potential effects of hazardous materials or potential spills are minimized. This potential impact would be less than significant.

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant with Mitigation Incorporated. The Proposed Project is in the foothills of the Sierra Nevada range and thus is not located in a groundwater subbasin or basin. As previously described, implementation of the Proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Proposed Project may impede sustainable groundwater management of the basin. Once the Proposed Project is constructed, PG&E would operate the Reservoir as under existing conditions with the exception of minor differences related primarily to maintenance access and a slight reduction in the Reservoir operating range due to a minor reduction in spill crest elevation, Accordingly, the Proposed Project would not conflict with or obstruct implementation of a sustainable groundwater management plan.

As previously discussed, the placement of rock slope protection along the banks of the existing plunge pool may result in an increase in suspended sediment and associated turbidity in Tiger Creek such that there is an exceedance of SR/SJR Basin Plan water quality objectives for turbidity and suspended sediment. This would conflict with the SR/SJR Basin Plan. However, the Proposed Project includes erosion and turbidity management actions, as well as water quality monitoring (BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans*) to avoid exceedances of the turbidity and suspended sediment water quality objectives. In addition, Mitigation Measure WQ-MM-1 requires the implementation of sediment control measures along the downstream edge of the existing plunge pool to trap any sediment dislodged through placement of rock slope protection so it does not enter Tiger Creek and Mitigation Measure WQ-MM-2 will ensure that SR/SJR Basin Plan water quality objectives are not violated. With implementation of Mitigation Measures WQ-MM-1 and WQ-MM-2 as well as the water quality protection measures of the Proposed Project, this impact would be less than significant.

3.4 Geology, Soils, Seismicity, and Paleontological Resources

3.4.1 Introduction

This section analyzes the Proposed Project's potential impacts related to geology, soils, seismicity, and paleontological resources. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for geology, soils, seismicity, and paleontological resources, and it analyzes the potential for the Proposed Project to affect these resources.

3.4.2 Area of Analysis

The Area of Analysis for geology, soils, and seismicity is the entire Project Area, including the three staging areas. The Area of Analysis for paleontological resources is the Proposed Project footprint (i.e., the area of potential ground disturbance).

3.4.3 Existing Conditions

This section discusses the existing conditions related to geology, soils, seismicity, and paleontological resources in the Area of Analysis.

3.4.3.1 Geology

This section presents a summary of geology in the surrounding region and within the local area of the Dam.

Regional Geologic Setting

The Dam is located on Tiger Creek, a tributary to the North Fork of the Mokelumne River, approximately 24 miles northeast of Jackson in Amador County, California (Figure 1-1). The Project Area is located at an elevation of approximately 3,500 feet above mean sea level on the western slope of the Sierra Nevada mountain range within the western foothills metamorphic belt of the Sierra Nevada geomorphic province. The Sierra Nevada geomorphic province is a linear, tilted fault block almost 400 miles long that extends from northern Butte County to the Mojave Desert. In stark contrast to its steep eastern slope, its western slope is gentle. This western slope is deeply incised by rivers, and bedrock disappears beneath the sediments of the Central Valley. The upper elevation Sierra Nevada is composed of massive granites shaped by glaciation, such as is seen in Yosemite National Park.

Lower in the Sierra Nevada is the northwest-trending Mother Lode, which is made up of metamorphic rock containing gold-bearing veins. The Sierra Nevada disappears to the north beneath the Cenozoic volcanic rock of the Cascade Ranges (California Geological Survey 2002).

Physiography

The Reservoir and the Dam are located in a narrow, southwest trending valley on the Devils Nose 7.5-minute USGS topographic quadrangle (U.S. Geological Survey 2018; Cotton, Shires and Associates 2023:Figure 2). The valley walls are moderately steep to very steep. Elevations in the area range from approximately 3,400 feet near Tiger Creek and the temporary access road to 4,000 feet in the mountains to the east. The slope varies in inclination from 20 to 25 degrees in the vicinity of the proposed cofferdam. Downstream of the Dam, the south to southeast facing slope inclines approximately 30 degrees. The route of the proposed permanent access road inclines from 30 to 37 degrees.

Geology of the Project Area

The geology in the vicinity of the Dam consists of several northwest trending terranes, belts, and complexes of sedimentary and igneous rocks. These terranes have been incised by drainages flowing from the highlands of the Sierra Nevada in the east towards the lowlands of the Central Valley. The bedrock in the vicinity of the Dam has been assigned to different terranes and complexes by various authors and includes the Calaveras Complex, the Calaveras Terrane, and the Merced River Terrane (Cotton, Shires and Associates 2023:5). Published maps of the project area identify undifferentiated Paleozoic rock in the incised drainages with Tertiary volcanic rocks of the Mehrten Formation capping the adjacent ridges (Cotton, Shires and Associates 2023:5).

3.4.3.2 Soils

Tiger Creek Regulator Dam Area

As part of geotechnical investigations for the Proposed Project, five test pits were excavated to depths of 5.7 to 8.7 feet along on the cofferdam alignment. Samples uncovered 1.0 to 3.8 feet of lacustrine deposits consisting of silty clayey sand with gravels which became deeper toward the Dam, along with 0.7 foot and 1.0 foot of colluvium. Test pits identified four different soil materials (fracture fill, colluvium, decomposed bedrock, and lacustrine deposit) which were classified as Sandy Silt (ML), Gravelly Silty Sand (SM), and Sandy Clay (CL). Subsurface investigations were not performed in the area of the permanent access road.

Expansive Soils

Expansive soils are not known to occur in the Project Area due to the low clay content of the mapped and field-sampled soils. Expansive soils are those determined to have a plasticity index (PI) of 15 or greater, determined in accordance with ASTM D4318. Test pits identified four different soil materials (fracture fill, colluvium, decomposed bedrock, and lacustrine deposit) which were classified as Sandy Silt (ML), Gravelly Silty Sand (SM), and Sandy Clay (CL), and were determined based on testing to be suitable to be used as structural backfill provided they are free of organic material. As shown in Table B-1, Appendix B (Laboratory Testing Results) of the *Geotechnical Investigation*, the PI for each sampled geologic unit was 10 or below (Cotton Shires and Associates 2023), demonstrating little risk of expansivity.

Doakes Ridge Staging and Spoils Site

The Doakes Ridge staging and spoils site is underlain by Sites very rocky loam (Src), which is deep (the depth to a restrictive feature [i.e., paralithic bedrock] is up to 80 inches) and well drained. Parent material is metabasic residuum weathered from metasedimentary rock. The surface layers are gravelly loam about 15 inches thick. The subsoil between 15 and 67 inches is composed of gravely clay loam and gravelly clay. Bedrock occurs at a depth below 72 inches. (Natural Resources Conservation Service 2023.)

Doakes Ridge Staging and Spoils Site Erosion Potential Summary

Based on the K factor for the soils,[1] the erosion hazard for the Sites very rocky loam, 3 to 16 percent slopes is 0.10, which is considered low; the wind erodibility group for the Sites very rocky loam,[2] 3 to 16 percent slopes is 7, which is considered a low risk of wind erosion (Natural Resources Conservation Service 2023).

[1] Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation and the Revised Universal Soil Loss Equation to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

[2] Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible (Natural Resources Conservation Service 2023).

Cedar Mill Staging Area

The Cedar Mill staging area is underlain by Aiken cobbly loam (AkE), Cohasset very cobbly loam (CbE, CcC, CcE), Mixed alluvial land (Mo), and Musick very rocky sandy loam (MyE). The Aiken cobbly loam (AkE) is deep (the depth to a restrictive feature [i.e., paralithic bedrock] is up to 80 inches) and well drained. Parent material is andesitic conglomerate and/or residuum weathered from tuff breccia. The surface layers are cobbly loam about 24 inches thick. The subsoil between 24 and 92 inches consists of cobbly clay loam and cobbly clay. Bedrock occurs at depths below 80 inches. The Cohasset very cobbly loam (CbE, CcC, CcE), is shallow (the depth to a restrictive feature [i.e., paralithic bedrock] is 24 to 40 inches) and well drained. Parent material is weathered volcanic residuum weathered from volcanic rock. The surface layers are very cobbly loam about 8 inches thick. The subsoil between 8 and 44 inches is cobbly clay loam. Bedrock occurs at a depth below 40 inches. The Mixed alluvial land (Mo) consists of surface layers of sand 0 to 10 inches thick, with 10 to 60 inches of stratified very gravelly coarse sand to sand beneath. The Musick very rocky sandy loam (MyE) is deep (the depth to a restrictive feature is more than 97 inches) and well drained. Parent material is colluvium derived from granite and/or colluvium derived from granodiorite. The surface layers are sandy loam about 14 inches thick. The subsoil between 14 and 97 inches consists of loam and sandy clay loam. (Natural Resources Conservation Service 2023.)

Cedar Mill Staging Area Erosion Potential Summary

Overall, the soils at the Cedar Mill staging area are at low risk for water erosion, with approximately half the site at high risk for wind erosion. Based on the K factor for the soils, the erosion hazard for Aiken cobbly loam (AkE), 31 to 51 percent slopes is 0.10, which is considered low; the wind erodibility group for the Aiken cobbly loam (AkE), 31 to 51 percent is 7, which is considered a low risk of wind erosion. The erosion hazard for Cohasset very cobbly loam, 3 to 51 percent slopes is 0.10, which is considered low; the wind erodibility group for the Cohasset very cobbly loan, 3 to 51 percent slopes is between 6 and 8, which is considered a low risk of wind erosion. The erosion hazard for Mixed alluvial land is 0.05, which is considered very low; the wind erodibility group for the Mixed alluvial land is one, which is considered very susceptible to wind erosion. The erosion hazard for the Musick very rocky sandy loam, 16 to 51 percent slopes K factor is 0.15, which is considered low; the wind erodibility group for Musick very rocky sandy loam, 16 to 51 percent slopes is 3, which is considered a high risk of wind erosion. (Natural Resources Conservation Service 2023.)

3.4.3.3 Seismicity

The Area of Analysis is in a region of California characterized by low to moderate seismicity (Cotton, Shires and Associates 2023:15). The area is located in the Sierra Nevada and is potentially affected by seismic sources in the Sierra Nevada, the West Tahoe fault, Genoa fault, and Antelope Valley fault to the east, and the Foothills fault system to the west. Most of the seismicity in the region is concentrated in the east, with the controlling faults being the North Fork fault and the Post Corral fault. All of the earthquakes with moment magnitudes of M4 or above within 100 kilometers of the Project Area originated from faults on the eastern Sierra front (Cotton, Shires and Associates 2023:5).

Primary Seismic Hazards

The state considers two aspects of earthquake events as primary seismic hazards: surface fault rupture (disruption at the ground surface as a result of fault activity) and seismic ground shaking.

Surface Fault Rupture

The Project Area is not located in an Alquist-Priolo Earthquake Fault Zone (Bryant and Hart 2007). Faults nearest to the Project Area include the Genoa fault (approximately 36.5 miles east), the Foothill fault system (approximately 20 miles southwest), and the West Tahoe fault (approximately 31.9 miles northeast). No active faults have been identified in the vicinity of the Project Area on published maps,[3] and no evidence of faulting was observed during the geotechnical investigation (Cotton, Shires and Associates 2023:15); therefore, the risk of surface fault rupture in the Project Area is considered low. Refer to Figure 4 of Cotton, Shires and Associates (2023) for a map of faults and their recency of movement.

Strong Ground Shaking

Unlike surface rupture, ground shaking is not confined to the trace of a fault, but rather propagates into the surrounding area during an earthquake. The intensity of ground shaking typically diminishes with distance from the fault, but ground shaking may be locally amplified or prolonged by some types of substrate materials. While ground shaking has been experienced in Amador County from earthquakes with

[3] As defined under the Alquist-Priolo Act, an *active fault* is one that has had surface displacement within the Holocene epoch (the last 11,000 years); a late *Quaternary fault* is a fault that has undergone displacement during the past 700,000 years; a *Quaternary fault (age undifferentiated)* is one that has had surface displacement at some point during Quaternary time (the last 1.6 million years); and a *pre-Quaternary fault* is one that has had surface displacement before the Quaternary period.

epicenters elsewhere (Amador County 2016a), the Project Area is situated in an area where the ground shaking hazard is considered low (California Geological Survey 2016; Cotton, Shires and Associates 2023:15).

Secondary Seismic Hazards

Secondary seismic hazards refer to seismically induced landsliding, liquefaction, and related types of ground failure. As discussed in Section 3.4.4 *Regulatory Setting*, the state maps areas that are subject to secondary seismic hazards pursuant to the Seismic Hazards Mapping Act of 1990. The state has not published seismic hazard mapping in the vicinity of the Project Area under the Seismic Hazards Mapping Program (California Geological Survey 2015).

Landslide Hazards

Landslides result in the downward and outward movement of rock, soil, and vegetation and are primarily associated with slopes greater than 15 percent but can also occur in other areas as well. As shown in Figure S-1, *Flood, Landslide, and Mine Hazards*, of the *Amador County General Plan*, the Project Area (including the Doakes Ridge staging and spoils site and the Cedar Mill staging area) are not located within or near areas of historic landslides or debris flow events (Amador County 2016a). The *Geotechnical Investigation* prepared for the Proposed Project also reported that the geomorphology in the vicinity does not indicate the existence of older landslide events (Cotton, Shires and Associates 2023:14).

Liquefaction

Liquefaction is the process in which soils and sediments lose shear strength and fail during seismic ground shaking. The vibration caused by an earthquake can increase pore pressure in saturated materials. If the pore pressure is raised to be equivalent to the load pressure, a temporary loss of shear strength results, allowing the material to flow as a fluid. This temporary condition can result in severe settlement of foundations and slope failure. The susceptibility of an area to liquefaction is determined largely by the depth to groundwater and the properties (e.g., grain size, density) of the soil and sediment within and above the groundwater. The sediments most susceptible to liquefaction are saturated, unconsolidated sand and silt within 50 feet of the ground surface (California Geological Survey 2008).

Areas of potential liquefaction in the county are not identified on state hazard maps (Amador County 2016a). However, as all surficial soils will be removed from the spillway foundation area during construction, Cotton, Shires and Associates determined that the potential for liquefaction to affect the structure would be negligible (Cotton, Shires and Associates 2023:15).

3.4.3.4 Paleontological Resources

This section describes the paleontological sensitivity of the geologic units in the Area of Analysis.

The determination of paleontological sensitivity is a qualitative assessment based on the paleontological resource potential of the stratigraphic units present, the local geology and geomorphology, and other factors relevant to fossil preservation and potential yield. According to the Society of Vertebrate Paleontology (SVP) (2010:2), standard considerations for determining sensitivity are: (1) the potential for a geological unit to yield abundant or significant vertebrate fossils or to yield a few significant fossils, large or small, vertebrate, invertebrate, or paleobotanical remains; and (2) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecological, or stratigraphic data (Table 3.4-1**Error! Bookmark not defined.**).

Table 3.4-1. Paleontological Sensitivity Ratings

Potential	Definition
High	Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data.
Undetermined	Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources.
Low	Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus, will only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule.

Potential	Definition
None	Some rock units, such as high-grade metamorphic rocks (e.g., gneisses and schists) and plutonic igneous rocks (e.g., granites and diorites), have no potential to contain significant paleontological resources. Rock units with no potential require neither protection nor mitigation measures relative to paleontological resources.

Source: Society of Vertebrate Paleontology 2010:1–2.

See *Geology of the Project Area* in Section 3.4.3.1 *Geology*, for a description of the geologic units present in the Area of Analysis.

The University of California Museum of Paleontology (UCMP) database was searched for records of vertebrate fossils in the geologic units in the Area of Analysis. The results of the search and the sensitivity of the geologic units (University of California Museum of Paleontology 2023) are summarized in Table 3.4-2.

Table 3.4-2. University of California Museum of Paleontology Vertebrate Fossil Records, by Formation Extent and Study Area Counties, and Paleontological Sensitivity of Geologic Units in the Study Area

Unit and Age	Records Throughout Formation's Extent	Records in Study Area Counties	Paleontological Sensitivity
Artificial fill	0	0	None—not natural deposits
Colluvium and alluvium deposits, Quaternary	0	0	Low [a]—unit is likely too young to contain fossils (i.e., less than 10,000 years old)
Mehrten Formation, Tertiary	339	0	High—a wide variety of fossils are known from this unit, including several species of early horses and other grazing mammals, fish, and reptiles
Plutonic rocks, Mesozoic	0	0	None
Undifferentiated rock, Paleozoic	0	0	None

Source: University of California Museum of Paleontology 2023.
[a] In some locations, colluvium and alluvium deposits could be older than 10,000 years and therefore have a high sensitivity for paleontological resources; however, these deposits would likely underlie the younger deposits with a low sensitivity.

3.4.4 Regulatory Setting

3.4.4.1 Federal

Clean Water Act Section 402 (National Pollutant Discharge Elimination System Program)

Section 402 is discussed under *Construction Activities Stormwater General Permit (2010-0014-DWQ Permit)* in the following section on state regulations (Section 3.4.4.2).

Federal Energy Regulatory Commission Seismic Safety Policy Standards

The Dam is operated by PG&E as part of the Mokelumne River FERC No. 137 Project, which is licensed by FERC. FERC's seismic safety policy standards are contained within their regulations, guidelines, and manuals pertaining to dam safety and inspections, specifically Chapter 13, Evaluation of Earthquake Ground Motions, of *Engineering Guidelines for the Evaluation of Hydropower Projects* (Federal Energy Regulatory Commission 2018) and *Federal Guidelines for Dam Safety, Earthquake Analyses and Design of Dams* (Federal Emergency Management Agency 2005).

The Dam is currently classified as a high hazard potential dam under the FERC guidelines.

3.4.4.2 State

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (Public Resources Code section 2621 et seq.) is intended to reduce risks to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones).[4] It also defines criteria for identifying active faults, giving legal weight to terms such as *active*, and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones.

[4] With reference to the Alquist-Priolo Act, a *structure for human occupancy* is defined as one "used or intended for supporting or sheltering any use or occupancy, which is expected to have a human occupancy rate of more than 2,000 person-hours per year" (14 CCR section 3601(e)).

Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as referring to approximately the last 11,000 years). A fault is considered well-defined if its trace can be identified clearly by a trained geologist at the ground surface, or in the shallow subsurface using standard professional techniques, criteria, and judgment (Bryant and Hart 2007).

Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (Public Resources Code sections 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards; and cities and counties are required to regulate development within mapped seismic hazard zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within seismic hazard zones until appropriate site-specific geologic or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

Construction Activities Stormwater General Permit (2010-0014-DWQ Permit)

Section 402 of the CWA mandates that certain types of construction activity comply with the requirements of USEPA's NPDES program. The USEPA has delegated to the State Water Board the authority for the NPDES program in California, where it is implemented by the state's nine Regional Water Boards. Construction activity disturbing one acre or more must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction and other Land Disturbance Activities.

The Central Valley Water Board administers the NPDES stormwater permit program in the Project Area portion of Amador County. Obtaining coverage under the Construction Activities General Permit requires that the project applicant take the following steps:

- File a Notice of Intent and other permit registration documents to obtain coverage under the General Permit before construction begins;
- Prepare and implement a SWPPP;
- Conduct inspections, prepare monitoring reports, and conduct pollution prevention and monitoring; and
- File a notice of termination with the State Water Board when construction is complete and the construction area has been permanently stabilized.

The SWPPP describes proposed construction activities, receiving waters, stormwater discharge locations, and BMPs that will be used to reduce project construction effects on receiving water quality. The components of the SWPPP most relevant to geology and soils are erosion and sediment control measures.

Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit Order 2010-0014-DWQ. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

Coverage under the General Permit is obtained by submitting permit registration documents to the State Water Board that include a risk level assessment and a site-specific SWPPP identifying an effective combination of erosion control, sediment control, and non-stormwater BMPs. The General Permit requires that the SWPPP define a program of regular inspections of the BMPs and, in some cases, sampling of water quality parameters.

2010 California Building Standards Code

The California Building Standards Code (Title 24 CCR) provides the minimum standards for structural design and construction. The Building Standards Code is based on the International Building Code, which is used widely throughout the United States and has been modified for California conditions with numerous more detailed or more stringent regulations. The Building Standards Code requires that "classification of the soil at each building site will be determined when required by the building official" and that "the classification will be based on observation and any necessary test of the materials disclosed by borings or excavations." In addition, the Building Standards Code states that "the soil classification and design-bearing capacity will be shown on the (building) plans, unless the foundation conforms to specified requirements." The code provides standards for various aspects of construction, including excavation, grading, and earthwork; fills and embankments; expansive soils; foundation investigations; and liquefaction potential and soil strength loss. The Building Standards Code requires extensive geotechnical analysis and engineering for grading, foundations, retaining walls, and other structures, including criteria for seismic design.

California Water Code, Division 3, Chapter 5, Article 1

The DSOD has oversight and approval authority for structures considered a dam under the California Water Code. Dams under DSOD jurisdiction are artificial barriers more than 6 feet high impounding more than 50 acre-feet of water or more than 25 feet high impounding more than 15 acre-feet. Additionally, some levees qualify as “dams” (California Water Code section 6002) and are required to meet DSOD standards and design review requirements.

DSOD reviews and approves proposed dam enlargements, repairs, alterations, and removals to ensure that the dam and appurtenant structures are designed to meet minimum requirements. It performs independent analyses to understand dam and appurtenant structure performance, including structural, hydrologic, hydraulic, and geotechnical evaluations. DSOD also oversees construction of dams to ensure that the work is done in accordance with the approved plans and specifications. Dams are inspected by DSOD on an annual basis to ensure dam safety.

Under California Water Code, Division 3, Chapter 5, Article 1 (New Dams and Reservoirs or Enlargements of Dams and Reservoirs), applicants must provide DSOD information about the location, type, size, height, storage capacity, and hydrologic conditions related to the dam. DSOD may also require reports on the materials used to construct the dam; exploratory pits, trenches, and adits; drilling, coring, and geophysical surveys; tests to determine leakage rates; and physical test results on the in-situ properties and behavior of the foundation materials at the dam site; as well as other information.

The Dam is currently classified as a high hazard potential under DSOD guidelines.

California Public Resources Code

Several sections of the California Public Resources Code protect paleontological resources. Section 5097.5 prohibits “knowing and willful” excavation, removal, destruction, injury, and defacement of any paleontological feature on lands owned by or under the jurisdiction of the state or any county, city, district, or public corporation, except where the agency with jurisdiction has granted express permission. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

3.4.4.3 Local

Amador County General Plan 2016

Soils

The *Amador County General Plan* Safety Element addresses soils and geological resources. It includes the following implementation program related to soils (Amador County 2016a).

Program D-8: Soil and Geotechnical Evaluation

a) The County will require geotechnical evaluation and recommendations in compliance with California Building Code requirements before construction of buildings meant for occupancy.

b) The County will provide any available soil shrink-swell information upon request, and ensure appropriate foundation elements are included on all projects proposed in areas prone to expansive soils.

c) New structures and improvements shall incorporate project features avoiding or minimizing the hazards identified through geotechnical evaluation to the satisfaction of the County.

Paleontological Resources

The *Amador County General Plan* does not include policies to protect paleontological resources; however, the adopted Amador County General Plan FEIR requires implementation of Mitigation Measure 4.6-9, Paleontological Resource Assessment, if damage could occur to sensitive paleontological resources. The mitigation measure lists the geologic units considered to be sensitive for paleontological resources in Amador County and the requirements to be followed when a project will disturb ones of those units, such as a site-specific analysis and implementation of feasible mitigation measures. These measures include education of worker personnel, consultation with a qualified paleontologist, and avoidance or recovery of paleontological resources (Amador County 2016b:4.6-26).

3.4.5 Environmental Effects

Potential impacts of the Proposed Project related to geology, soils, seismicity, and paleontological resources are discussed in the context of the CEQA Guidelines Appendix G checklist. Checklist section VII *Geology, Soils, Seismicity, and Paleontological Resources*, asks whether the Proposed Project would result in any of the following conditions.

a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact. The Project Area is not identified as being within an Alquist-Priolo Fault Zone (Bryant and Hart 2007) and is located in an area of low to moderate seismicity. No active faults have been identified in the vicinity on published maps and no evidence of faulting was observed during the geotechnical investigation (Cotton, Shires and Associates 2023:15). Accordingly, the project area is not subject to surface fault rupture hazard. There would be no potential impact.

2. Strong seismic ground shaking?

3. Seismic-related ground failure, including liquefaction?

Less than Significant. As described in Section 3.4.3 *Existing Conditions*, the ground-shaking hazard in the Project Area is generally low to moderate and with the removal of all surficial soils from the spillway foundation area during construction (as described in Chapter 2, *Project Description*) the potential for liquefaction is considered negligible (Cotton, Shires and Associates 2023:15). The Proposed Project would be unmanned during operation and would therefore present no risk of injury or death as a result of ground shaking or ground failure. Furthermore, potential impacts associated with ground shaking would be minimized because PG&E would be required to incorporate FERC seismic safety policy standards into the project design for applicable features to minimize the ground-shaking hazards on associated project features. Structures must be designed to meet the regulations and associated standards. The geotechnical studies, a requirement of the Building Standards Code, have been developed prior to construction activities and have served to inform the seismic design parameters. The potential impact would be less than significant.

4. Landslides?

Less than Significant. A large earthquake on a nearby fault could cause minor to moderate ground shaking in the vicinity of the Project Area, potentially resulting in an increased risk of structural loss, injury, or death from the triggering of a landslide. Landslide hazards are generally associated with slopes greater than 15 percent. As described above under *Physiography* in Section 3.4.3.1 *Geology*, slopes in the Area of Analysis are greater than 15 percent. However, no landslides were observed in the vicinity of the Proposed Project's permanent features (e.g. the spillway and permanent access road) and the geomorphology in the vicinity does not indicate the existence of older landslide events (Cotton, Shires and Associates 2023:8).

Furthermore, the Project Area is underlain by shallow bedrock and, therefore, the potential for landslides to impact the Proposed Project's permanent features is considered low. Landslide risk at the proposed spillway chute and plunge pool are also considered to be low. Therefore, as no evidence of past or present landslides was observed at the project site, the underlying layers are not conducive to landsliding and the risk of landslide is considered low. The potential impact would be less than significant.

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

Less than Significant. As discussed in Chapter 2, *Project Description*, ground-disturbing activities associated with the Proposed Project would disturb more than one acre and could increase soil erosion rates and loss to topsoil. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at the staging areas and spoils sites. The Proposed Project would generate approximately 35,000 CY of spoils as a result of the excavation required for the crest structure foundation, spillway chute and flip bucket, plunge pool, cutoff trench, log boom anchors, and the permanent access road. The improper transportation and storage of spoils materials can also result in erosion.

However, PG&E would comply with all applicable construction site BMPs as specified in BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans* (including compliance with the NPDES stormwater permit program and preparation and implementation of a SWPPP), and BMP-6: *Implement Fugitive Dust Abatement Measures* (described in Chapter 2, *Project Description*). BMP-1 and BMP-6 include soil stabilization, sediment control, and wind erosion control BMPs to ensure soil erosion is minimized. With the implementation of these BMPs, the potential impact would be less than significant.

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

Less than Significant. Improper grading or construction associated with the Proposed Project could put people at risk as a result of ground failure. Improvement activities would involve excavation, concrete placement, and construction of a permanent access road. If these activities are not performed or engineered correctly, they could result in slope instability and ensuing ground failure. The

Geotechnical Investigation identified the potential for shallow ground failure associated with deep colluvial swale in a portion of the access road alignment; however, this has been mitigated through design changes, such as a reduction in the inclination of the proposed cuts or by supporting the cuts with concrete modular block. Furthermore, project construction would be implemented in accordance with DSOD and FERC seismic safety policy standards. No manned structure would be constructed as a result of the Proposed Project. With adherence to safety policy standards and recommendations of the geotechnical investigation, potential impacts would be less than significant.

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. As discussed above under *Expansive Soils* in Section 3.4.3.2 *Soils,* expansive soils are not known to occur in the Project Area due to the low clay content of the mapped and field-sampled soils. The *Geotechnical Investigation* for the Proposed Project also determined there was little risk of expansivity in the collected samples. In addition, the project design would conform to the DSOD and FERC seismic safety policy standards. Therefore, there would be no potential impact.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

No Impact. The Proposed Project would not include a septic system. There would be no potential impact.

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

Less than Significant with Mitigation Incorporated. Activities that could damage paleontological resources are those involving ground disturbance in geologic units sensitive for paleontological resources.

In the area of the new spillway, the geologic unit sensitive for paleontological resources is the Mehrten Formation. This formation is well known for its diverse vertebrate fossils. The colluvium and alluvium deposits in the new spillway area generally have a low sensitivity for paleontological resources because they are likely less than 10,000 years old (i.e., Holocene and therefore too young to contain fossils), but deposits older than 10,000 years that might be present could contain fossils). If fossils are present in the area of the new spillway, they could be damaged during ground-disturbing activities, such as blasting and excavation. Although, most ground-disturbing activities would occur in Paleozoic and Mesozoic bedrock, which have no sensitivity for paleontological resources, the colluvial and alluvial deposits have the potential (albeit low) to contain fossils. Substantial damage to or destruction of significant paleontological resources, as defined by the SVP (2010), would be a potentially significant impact. Implementation of Mitigation Measures GEO-MM-1 and GEO-MM-2, which require training construction workers to recognize paleontological resources and stopping work if paleontological resources are encountered, would reduce this potential impact to a less-than-significant level.

In the staging areas and new or improved access roads, the ground-disturbing activities would be limited to grading. Although grading in the Mehrten Formation and the colluvial and alluvial deposits could occur, the grading would shallow and likely in already disturbed area. However, should paleontological resources be present, implementation of Mitigation Measures GEO-MM-1 and GEO-MM-2 would reduce the potential impact to a less-than-significant level.

Mitigation Measure GEO-MM-1: Educate Construction Personnel in Recognizing Fossil Material

Prior to construction, PG&E shall ensure that all construction personnel receive training provided by a qualified professional paleontologist who is experienced in teaching non-specialists. This training shall ensure that construction personnel can recognize fossil materials in the event any are discovered during construction.

Mitigation Measure GEO-MM-2: Stop Work if Substantial Fossil Remains are Encountered during Construction

If substantial fossil remains (particularly vertebrate remains) are discovered during earth-disturbing activities, the construction contractor shall immediately stop activities and wait until a state-registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. PG&E shall be responsible for ensuring that recommendations regarding treatment and reporting are implemented.

3.5 Biological Resources

3.5.1 Introduction

This section describes the biological resources in the Project Area and the Proposed Project's potential impacts on these resources. This section discusses the existing conditions in the Project Area; federal, state, and local regulatory framework for biological resources; and the potential for the Proposed Project to affect biological resources.

3.5.2 Area of Analysis

The Project Area encompasses the Dam area for construction of the proposed spillway, including the crest structure, spillway chute, flip bucket, plunge pool, Dam notch, and temporary cofferdam; the existing spillway; permanent access road; temporary access road, bridges, and trails; log boom; lighting; staging; tree removal operations area; the Doakes Ridge staging and spoils site; and the Cedar Mill staging area (Figure 2-1, *Project Area*). The biological resources Area of Analysis encompasses the Project Area and a 10-foot buffer along each side of the existing Spur 10 access road (Figure 3.5-1, *Biological Resources in the Area of Analysis*).

3.5.3 Methods

Biologists reviewed existing information and conducted field surveys to gather information to prepare the biological resources effects analysis and support the impact conclusions. The methods of the pre-field review and field surveys are described in the following sections.

3.5.3.1 Review of Existing Information

The sources below were used to develop lists of special-status plant and animal species and to identify other sensitive biological resources (e.g., sensitive natural communities) that could be affected by the Proposed Project:

- California Native Plant Society's (CNPS's) online *Inventory of Rare and Endangered Plants of California* records search of the Devil's Nose, Omo Ranch, Caldor, Peddler Hill, West Point, Garnet Hill, Rail Road Flat, Fort Mountain, Dorrington, Mokelumne Hill, Pine Grove, and Aukum USGS 7.5-minute quadrangles (California Native Plant Society 2023);
- California Natural Diversity Database (CNDDB) records search of the Devil's Nose, Omo Ranch, Caldor, Peddler Hill, West Point, Garnet Hill, Rail Road Flat,

Fort Mountain, Dorrington, Mokelumne Hill, Pine Grove, and Aukum USGS 7.5-minute quadrangles (California Department of Fish and Wildlife 2023a);

- United States Fish and Wildlife Service (USFWS) list of threatened and endangered species that may occur in the Proposed Project location or be affected by the Proposed Project (United States Fish and Wildlife Service 2023);
- National Marine Fisheries Service (NMFS) list of endangered and threatened species to confirm that listed species, critical habitat, and essential fish habitat do not occur in the Project Area or would not be affected by the Proposed Project (National Marine Fisheries Service 2016);
- Fish population monitoring information from Stream Ecology Monitoring Program Reports for the Mokelumne River Project (Pacific Gas and Electric Company 2017a, 2017b, 2020, 2021, 2022a);
- Amphibian monitoring information from the Stream Ecology Monitoring Program for the Mokelumne River Project (Pacific Gas and Electric Company 2022b); and
- California Essential Habitat Connectivity Project (Spencer et al. 2010) and California Department of Fish and Wildlife's (CDFW) online Habitat Connectivity Viewer (California Department of Fish and Wildlife 2021).

The USFWS, NMFS, CNDDB, and CNPS lists can be found in Appendix B, *Species Lists*.

3.5.3.2 Field Surveys

ICF botanists/wetland ecologists conducted aquatic resources delineation, land cover mapping, and botanical surveys of the Area of Analysis on May 25, 2022; June 1, 2, and 7, 2022; August 9, 17, and 25, 2022; May 26, 2023; and August 1, 2023. The surveys were conducted on foot and consisted of walking meandering transects throughout the Area of Analysis, identifying and recording plants observed, and delineating aquatic resources (wetlands and non-wetland waters). Botanical surveys were conducted according to CDFW protocol (California Department of Fish and Wildlife 2018). Aquatic resources were mapped using guidance provided in *A Guide to the Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (United States Army Corps of Engineers 2014), Regulatory Guidance Letter 05-05 (United States Army Corps of Engineers 2005), *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987), and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (United States Army Corps of Engineers 2010). A sub-meter accuracy global positioning system unit was used to record the

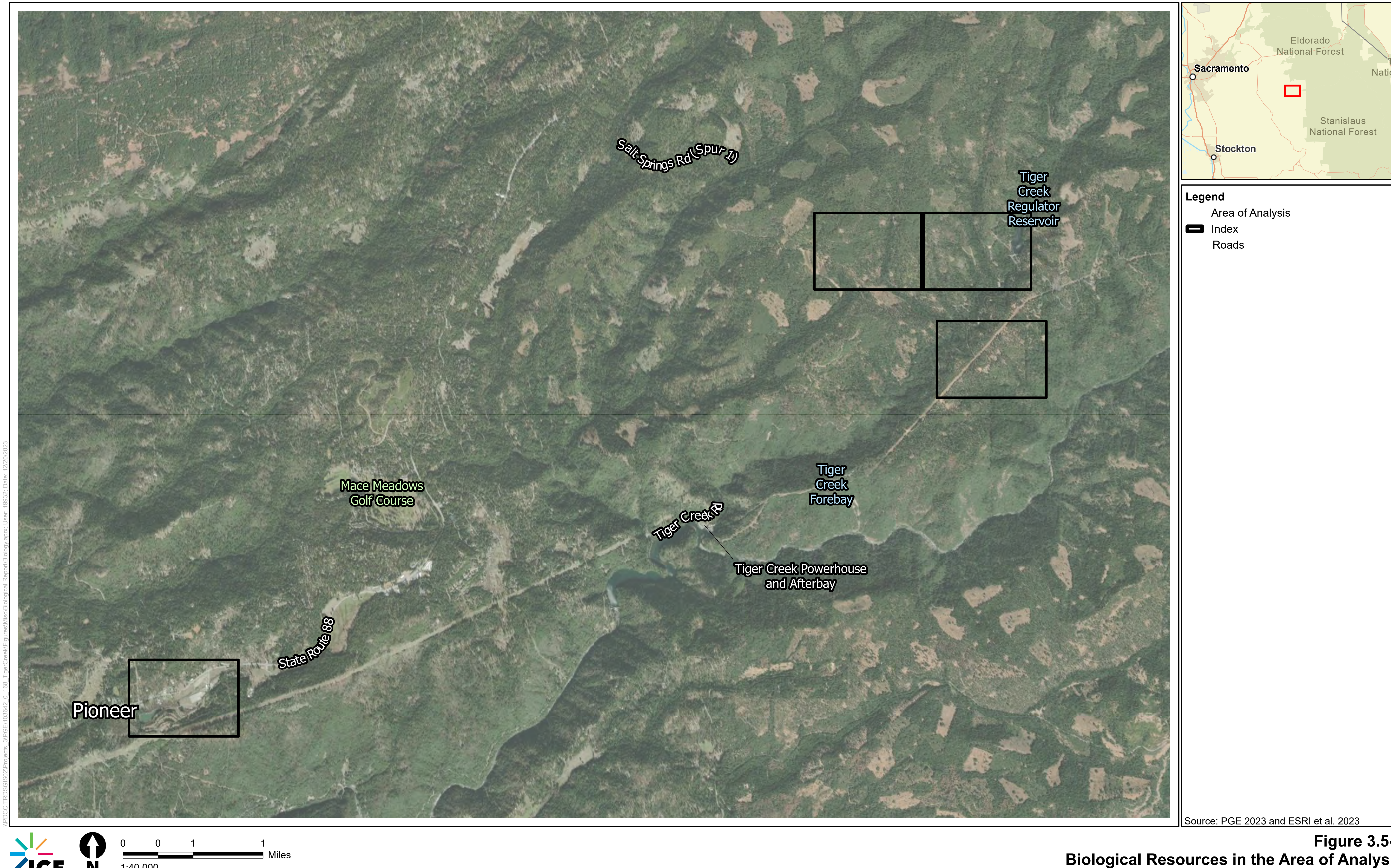
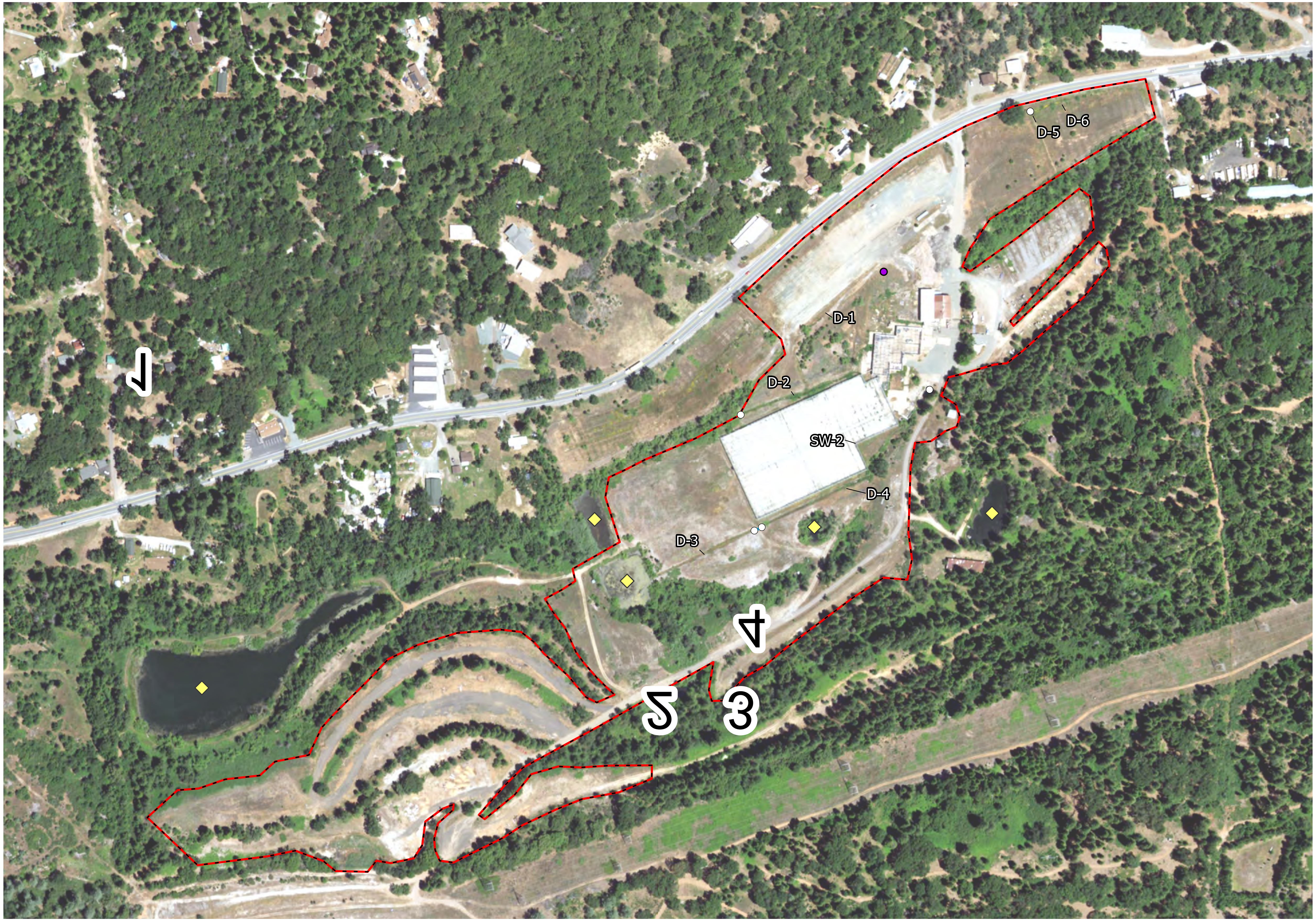
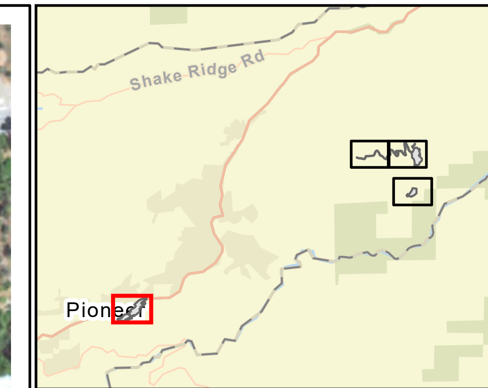


Figure 3.5-1
Biological Resources in the Area of Analysis
Index





Legend

- Area of Analysis
- Cedar Mill Staging Area
- Pond Located Outside the Area of Analysis
- Culvert
- Culvert
- Storm Drain

Landcover

- Annual Grassland/Ruderal Annual Grassland
- Developed/Disturbed
- Ditch (D)
- Excluded from Area of Analysis
- Seasonal Wetland (SW)
- Willow Riparian

Source: PGE 2023, ESRI et al. 2023, NAIP 2020.

ICF

N

0 115 230 460 US Feet

1:3,800

Figure 3.5-1
Biological Resources in the Area of Analysis
Page 1 of 4

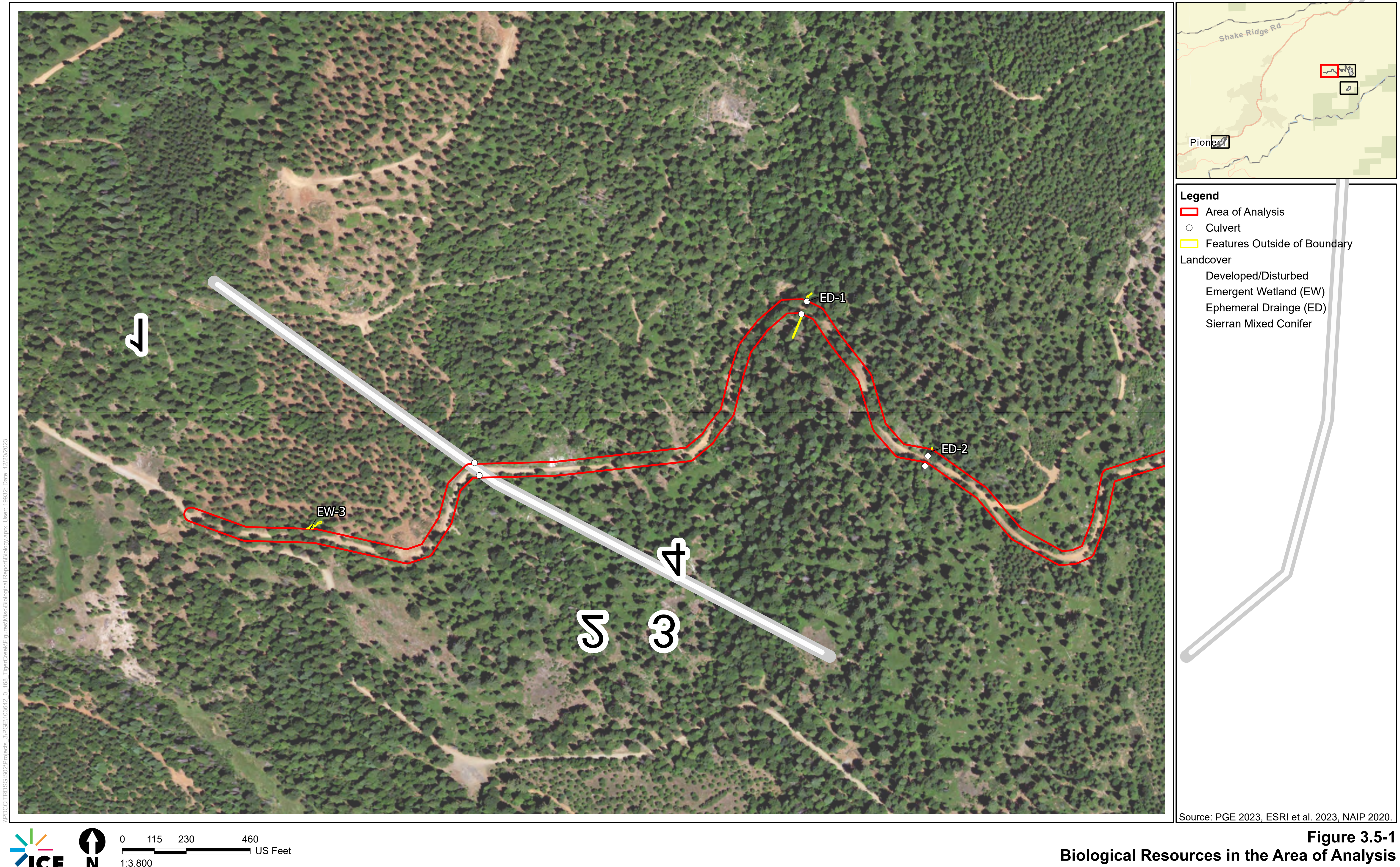


Figure 3.5-1
Biological Resources in the Area of Analysis
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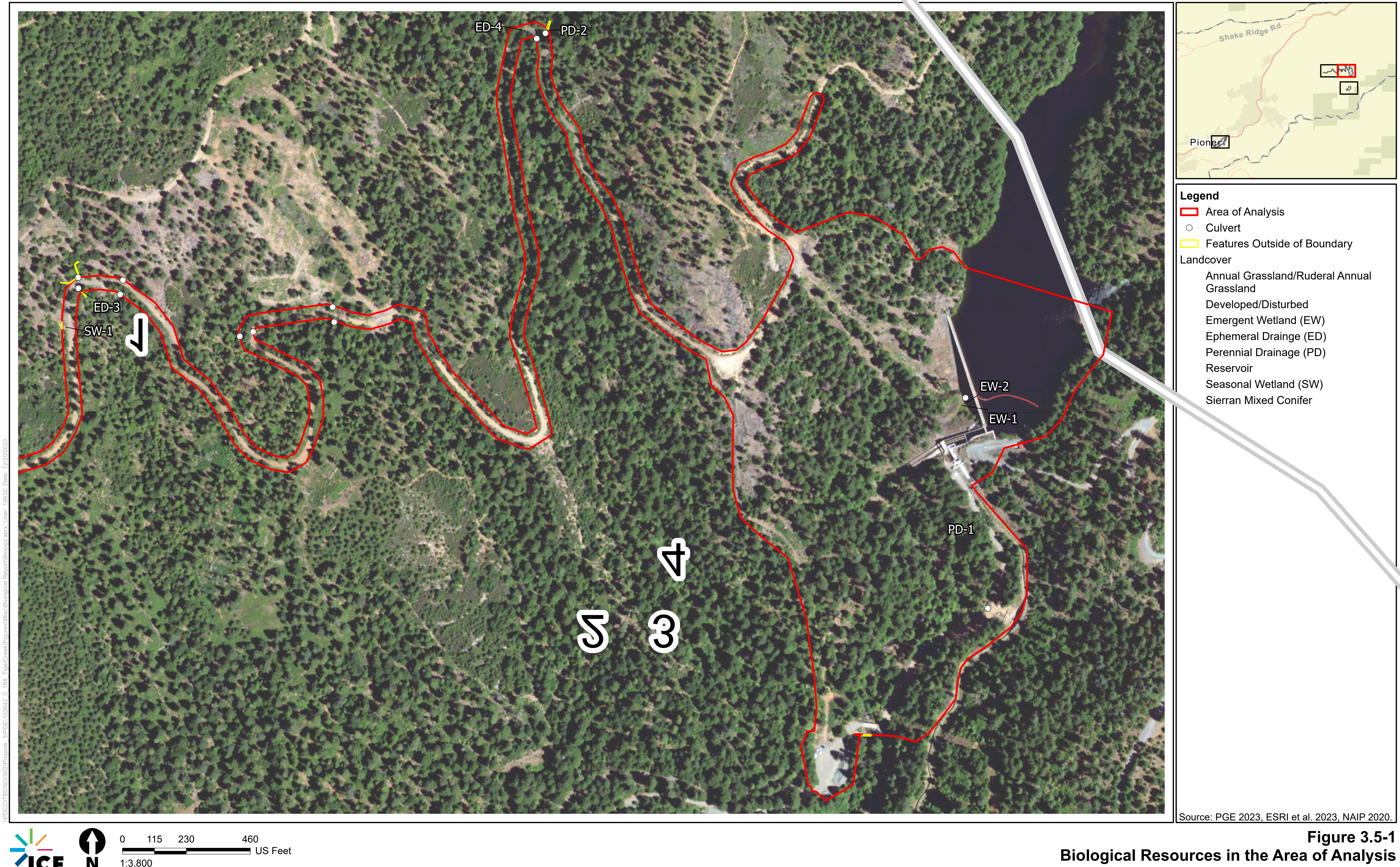

Figure 3.5-1
Biological Resources in the Area of Analysis
Page 3 of 4

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Figure 3.5-1
Biological Resources in the Area of Analysis
Page 4 of 4

locations of the wetland and OHWM sample points and map the boundaries of aquatic resources.

ICF wildlife biologists conducted a general habitat assessment for special-status animals and focused surveys for northern goshawk (*Accipiter gentilis*). The habitat assessment at the Dam area and Doakes Ridge staging and spoils site was conducted on April 19 and August 17, 2022. The habitat assessment at the Cedar Mill staging area was conducted on August 18, 2022, and August 1, 2023. An ICF wildlife biologist walked meandering transects throughout the area or the analysis and used binoculars to view areas on steep terrain. The biologist recorded information about the habitats present, wildlife species observed during the surveys, and took representative photographs of the Project Area. During the August 1, 2023, survey at the Cedar Mill staging area, the biologist assessed ponds adjacent to the staging area for their suitability for California red-legged frog (*Rana draytonii*).

Surveys for northern goshawk were conducted in the Dam area and Doakes Ridge staging and spoils site on June 22, 23, and 24, 2022; and July 12 and 13, 2022. The "Broadcast Acoustical Survey Method" protocol in the *Northern Goshawk Inventory and Monitoring Technical Guide* (Woodbridge and Hargis 2006), was followed during the surveys. This protocol is designed to assess the presence/absence of northern goshawk nesting activity. Broadcast acoustical surveys were performed within a 0.25-mile buffer around the Project Area and in suitable habitat along portions of the existing access roads.

An ICF fish biologist, accompanied by an ICF geomorphologist, conducted a reconnaissance-level survey along Tiger Creek in the Area of Analysis and the northern shoreline of the Reservoir on April 14, 2023. The fish biologist walked Tiger Creek from the Tiger Creek Road bridge to the Dam, the north shoreline of the Reservoir, and Tiger Creek upstream of the Reservoir from the Reservoir to the stream gaging (M-37) weir to assess fish habitat and fish passage conditions, and to visually survey for fish from the bank and with underwater video. In addition, representative photographs of Tiger Creek in the Area of Analysis were taken.

3.5.4 Existing Conditions

3.5.4.1 Physical Conditions

The approximately 102-acre Area of Analysis is in the northern Sierra Nevada Foothills geographic subdivision of the California Floristic Province (Baldwin et al. 2012). The topography of the Dam area and Doakes Ridge staging and spoils site is generally mountainous, and elevations range from approximately 3,435 to 3,940 feet above MSL. The Cedar Mill staging area is mostly level with slopes on the north and south edges, and elevations from approximately 3,040 to 3,120 feet above MSL.

Land use in the Area of Analysis includes PG&E hydropower facilities and open space at the Dam area and Doakes Ridge staging and spoils site and parking/storage areas at the Cedar Mill staging area.

Soils

The 13 soil map units in the Area of Analysis based on the SSURGO database are listed in Table 3.5-1 (United States Department of Agriculture, Natural Resources Conservation Service 2022).

Hydrology

The Dam area and Doakes Ridge staging and spoils site are located within the Tiger Creek-North Fork Mokelumne River (Hydrologic Unit Code [HUC] No. 180400120404) HUC 12 watershed (United States Geological Survey 2021a). The Reservoir is fed by inflow from the Tiger Creek watershed (which has a drainage area of approximately 14 square miles and includes the Sweetwater Creek, upper Tiger Creek, and Little Tiger Creek drainages) and a diversion from the Mokelumne River at the Salt Springs Powerhouse that discharges into the Reservoir approximately 500 feet upstream of the Dam. PG&E releases water from the Reservoir into Tiger Creek through an outlet at the base of the Dam. Within the Area of Analysis, Tiger Creek has perennial flow. Downstream of the Dam, Tiger Creek flows to the North Fork Mokelumne River, which ultimately flows to the San Joaquin River in the Sacramento–San Joaquin Delta.

The Cedar Mill staging area is located within the Upper Sutter Creek (Hydrologic Unit Code No. 180400120501) HUC 12 watershed (United States Geological Survey 2021b). The headwater channel of Sutter Creek (mapped as South Branch Sutter Creek) runs in a westerly direction through realigned ditches in the staging area. Hydrology at the Cedar Mill staging area has been highly modified and disturbed. South Branch Sutter Creek channel appears to have been piped and buried and/or channelized and diverted from the natural channel into excavated ditches. Downstream of the Area of Analysis, South Branch Sutter Creek appears to be a perennial stream and is a tributary of Sutter Creek, which flows to Dry Creek and ultimately to the Mokelumne River.

Climate

The regional climate is characterized by hot, dry summers with relatively cool, wet winters. Data from the Tiger Creek weather station, located approximately 2.75 miles southwest of the Dam area, were reviewed for temperature and precipitation averages (United States Department of Agriculture, Natural Resources Conservation Service 2023). The average high temperatures range from 90.4 degrees Fahrenheit in July to 49.3 degrees Fahrenheit in December, and the average low temperatures range from 32.6 degrees Fahrenheit in December to 55.6 degrees Fahrenheit in July. The total average annual precipitation is 45.98 inches, with precipitation falling as rain or snow and with a total average of 15.4 inches of snow between November and April (United States Department of Agriculture, Natural Resources Conservation Service 2023).

Table 3.5-1. Soil Map Units in the Area of Analysis

Map Symbol	Map Unit Name	Drainage Class	Landform	Typical Profile	Hydric Component	Hydric Criteria[a]
Dam Area						
MwF	Musick very rocky sand loam, moderately deep, 51 to 71 percent slopes	Well drained	Mountain slopes	Sandy loam over sandy clay loam over weathered bedrock	–	–
W	Water	–	–	–	–	–
Spur 10 Area						
AkC	Aiken cobbly loam, 3 to 16 to 51 percent slopes	Well drained	Ridges	Cobbly loam over cobbly clay loam over cobbly clay	–	–
CbE	Cohasset very cobbly loam, 16 to 51 percent slopes	Well drained	Lahars	Very cobbly loam over cobbly clay loam over weathered bedrock	–	–
CoE	Cohasset very cobbly sandy loam, 16 to 51 percent slopes	Well drained	Lahars	Very cobbly sandy loam over cobbly clay loam over weathered bedrock	–	
MvE	Musick very rocky sandy loam, 16 to 51 percent slopes	Well drained	Mountain slopes	Sandy loam over loam over sandy clay loam	–	–
MwF	Musick very rocky sand loam, moderately deep,	Well drained	Mountain slopes	Sandy loam over sandy clay loam over weathered bedrock	–	–

Map Symbol	Map Unit Name	Drainage Class	Landform	Typical Profile	Hydric Component	Hydric Criteria[a]
	51 to 71 percent slopes					
Doakes Ridge Staging and Spoils Site						
SrC	Sites very rocky loam, 3 to 16 percent slopes	Well drained	Hills, ridges	Gravelly loam over gravelly clay loam over gravelly clay over clay loam over weathered bedrock	–	–
SrE	Sites very rocky loam, 16 to 51 percent slopes	Well drained	Mountain slopes, ridges	Gravelly loam over gravelly clay loam over gravelly clay over gravelly clay loam over weathered bedrock	–	–
Cedar Mill Staging Area						
AkE	Aiken cobbly loam, 31 to 51 percent slopes	Well drained	Ridges	Cobbly loam over clobbly clay loam over cobbly clay	–	–
CbE	Cohasset very cobbly loam, 16 to 51 percent slopes	Well drained	Lahars	Very cobbly loam over cobbly clay loam over weathered bedrock	–	–
CcC	Cohasset very cobbly loam, moderately deep, 3 to 16 percent slopes	Well drained	Lahars	Very cobbly loam over cobbly clay loam over unweathered bedrock	–	–
CcE	Cohasset very cobbly loam, moderately deep,	Well drained	Lahars	Very cobbly loam over cobbly clay loam over unweathered bedrock	–	–

Map Symbol	Map Unit Name	Drainage Class	Landform	Typical Profile	Hydric Component	Hydric Criteria[a]
	16 to 51 percent slopes					
Mo	Mixed alluvial land	unspecified	Flood plains	Sand over stratified very gravelly coarse sand to sand	Riverwash, in drainageways	4
MvE	Musick very rocky sandy loam, 16 to 51 percent slopes	Well drained	Mountain slopes	Sandy loam over loam over sandy clay loam	–	–
W	Water	–	–	–	–	–

Sources: United States Department of Agriculture, Natural Resources Conservation Service 2022

[a] Hydric criteria definition: 4 - frequently flooded for long duration or very long duration during the growing season

3.5.4.2 Land Cover Types in the Area of Analysis

Land cover types in the Area of Analysis were designated during surveys on May 25, 2022; June 1, 2, and 7, 2022; August 9, 17, and 25, 2022; May 26, 2023; and August 1, 2023 (as described in Section 3.5.3.2 *Field Surveys*). Figure 3.5-1, *Biological Resources in the Area of Analysis*, shows the locations of the mapped land cover types.

The Area of Analysis supports both common and sensitive land cover types. Common land cover types are widespread vegetation communities with low plant species diversity. These types may reestablish naturally after disturbance, support primarily non-native plant species, or be highly managed. They are not generally protected by resource agencies unless they provide habitat for special-status species (e.g., raptor foraging or nesting habitat, upland habitat in a wetland watershed). Common land cover types in the Area of Analysis are Sierran mixed conifer forest and annual grassland/ruderal annual grassland. The developed/disturbed cover type is not considered a vegetation community and is not sensitive.

Sensitive land cover types are rare vegetation communities with limited distribution. They may have high species diversity, high productivity, distinctive characteristics, or a declining status. Local, state, and federal agencies that regulate biological resources consider these types to be important, and compensation for loss of sensitive land cover types is generally required by these agencies. USFWS considers certain types, such as wetlands and riparian communities, important to wildlife, and USACE and the USEPA consider wetlands important for water quality and wildlife. Waters of the United States and waters of the State are regulated by USACE and the Regional Water Boards, respectively. The CDFW maintains a database (the CNDDB) of rare habitat types throughout the state. The land cover types in the Area of Analysis that are considered sensitive are willow riparian, emergent wetland, seasonal wetland, ditch, ephemeral drainage, perennial drainage, and reservoir.

Locations of land cover types and the dominant plant species observed in land cover types in the Area of Analysis are described below. A list of the plants and animals observed in each part of the Area of Analysis is provided in Appendix C, *Plants and Animals Observed in the Tiger Creek Regulator Dam Spillway Replacement Project Area of Analysis*.

Sierran Mixed Conifer Forest

Sierran mixed conifer forest is the dominant vegetation community in the Area of Analysis. The overstory is a mix of incense cedar (*Calocedrus decurrens*), ponderosa pine (*Pinus ponderosa*), and Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*) with associated species including sugar pine (*Pinus lambertiana*), big-leaf maple (*Acer macrophyllum*), canyon live oak (*Quercus chrysolepis*), and California black oak (*Q. kelloggii*). Understory tree and shrub species include Pacific madrone (*Arbutus menziesii*), deer brush (*Ceanothus integerrimus*), mountain dogwood (*Cornus nuttallii*), American dogwood (*C. sericea*), toyon (*Heteromeles arbutifolia*), Himalayan and cut leaved blackberry (*Rubus armeniacus* and *R. lacinatus*), whitebark raspberry (*R. leucodermis*), western thimbleberry (*R. parviflorus*), and red huckleberry (*Vaccinium parviflolium*). Native and non-native forbs and annual grasses are in the herbaceous layer.

Willow Riparian

Riparian vegetation is limited to an area surrounding a ditch (D-4) at the Cedar Mill staging area. The riparian vegetation is dominated by arroyo willow (*Salix lasiolepis*) and Himalayan blackberry with lamp rush (*Juncus effusus*), wire rush (*J. balticus*), and annual beard grass (*Polypogon monspeliensis*) in the herbaceous layer. The areas adjacent to the two perennial drainages in the Area of Analysis, Tiger Creek and an unnamed stream, are undifferentiated from the surrounding Sierran mixed conifer forest.

Annual Grassland/Ruderal Annual Grassland

The Area of Analysis at the Dam area and Doakes Ridge staging and spoils site supports patches of annual grassland in openings of the Sierran mixed conifer forest. Dominant grass species include slim oat (*Avena barbata*), common silver-hair grass (*Aira caryophyllea*), bristly dogtail grass (*Cynosurus echinatus*), and blue wild rye (*Elymus glaucus* ssp. *glaucus*). Bullthistle (*Cirsium vulgare*), deer brush, and Himalayan blackberry are associated with the annual grassland. In the Dam area, cut logs and fallen tree limbs are densely scattered in the annual grassland.

Ruderal annual grassland is the dominant land cover type at the Cedar Mill staging area. The ruderal grassland abuts mixed Sierran conifer forest with ponderosa pine, California black oak, and valley oak (*Quercus lobata*) at the edges of the Area of Analysis. Developed/disturbed areas are interspersed in the grassland. The ruderal areas are dominated by nonnative annual grasses and herbs, including dense areas of invasive species, with few natives present. Dominant species include annual grasses, such as spike bent grass (*Agrostis exarata*), California brome (*Bromus carinatus*), ripgut brome (*B. diandrus*), soft chess (*B. hordeaceus*), Medusa head (*Elymus caput-medusae*), and seaside barley (*Hordeum marinum* ssp. *gussoneanum*); and forbs, such as yellow star thistle (*Centaurea solstitialis*), big heron bill (*Erodium botrys*), telegraph weed (*Heterotheca grandiflora*), common tarweed (*Madia elegans*), field hedge parsley (*Torilis arvensis*), and rose clover (*Trifolium hirtum*).

Emergent Wetland

There are three emergent wetlands in the Area of Analysis. Two of the emergent wetlands (EW-1 and EW-2) are near Tiger Creek and the Dam, and one emergent wetland (EW-3) is located north of the Spur 10 road on the road shoulder. These features support species such as lamp rush, velvet grass (*Holcus lanatus*), bristly dogtail grass, and smaller duckweed (*Lemna minor*). All three of the emergent wetlands obtain water from seeps and are perennially wet.

Seasonal Wetland

Two seasonal wetlands (SW-1 and SW-2) are in the Area of Analysis. SW-1 is west of the Spur 10 road on the road shoulder and SW-2 is at the Cedar Mill staging area. The wetlands support herbaceous wetland species with dominant species including wire rush, lamp rush, and/or annual beard grass. SW-1 exhibited indicators of hydric soils and wetland hydrology but did not meet the hydrophytic vegetation criterion for a federal wetland (discussed further in Section 3.5.4.3 *Waters of the United States and Waters of the State*). SW-2 supports predominantly hydrophytic vegetation and appears to be an erosional feature that formed due to runoff from a greenhouse operation that was recently removed from the area. It follows the edge of the removed greenhouse structure and flows overland toward ditch D-4. Although soils were not sampled in SW-2, it contains fill that may have come from material that was washed into the wetland from a greenhouse drain.

Ditch

Six ditches are in the Area of Analysis at the Cedar Mill staging area. All of the ditches are earth-lined and most contain ruderal annual grassland. All ditches drain primarily following storm events, although ditches D-3 and D-4 appear to carry water for a longer period, based on the presence of wetland vegetation growing in these ditches.

Ditch D-1 supports ruderal annual grassland and is most closely aligned with the blue line stream for the creek mapped on the USGS topographic quadrangle. Ditch D-1 connects to South Branch Sutter Creek downstream of the Area of Analysis.

Ditch D-2 also supports ruderal annual grassland and connects to South Branch Sutter Creek.

Ditches D-3 and D-4, which are connected by a culvert, support species identified in the willow riparian understory, and the willow riparian land cover type occurs along part of ditch D-4. Ditch D-3 drains to a pond outside of the west end of the Area of Analysis.

Ditches D-5 and D-6 support ruderal annual grassland and are connected by a culvert. The aerial photograph signature for ditch D-5 indicates that it may have extended further south at one time, potentially connecting to South Branch Sutter Creek, but there is presently no evidence of a bed and bank to the south, and neither ditch appears to connect to additional drainages.

Ephemeral Drainage

Four ephemeral drainages, ED-1; ED-2; ED-3; and ED-4, are within the Area of Analysis in the Spur 10 road area. ED-1, ED-2, and ED-4 cross under the Spur 10 road in culverts and ED-3 is located north of the Spur 10 road on the road shoulder. Four other ephemeral drainages are entirely within culverts within the Area of Analysis. The ephemeral drainages vary from two to five feet wide and most support sparse vegetation, primarily grasses, or are unvegetated. There is no riparian habitat associated with the ephemeral drainages.

Other Ephemeral Drainage Features

Plunge Pool Channel

The plunge pool channel is composed of cobble and exposed bedrock and drains surface water from the plunge pool (described below in the *Perennial Drainage* subsection) to Tiger Creek. The northern section of the channel generally lacks vegetation and serves as the low-flow portion of the channel. Surface water was flowing into Tiger Creek from this section of the channel during the August 17, 2022, field survey. The remainder of the channel south of the low-flow section was dry during the field survey and supports small trees and drift (organic debris, larger than twigs) piled against the base of some trunks. Based on the presence of drift and the break in bank slope, this section of the channel appears to carry high flows from the spillway and plunge pool.

Spillway Bathtub Drop Inlet/Concrete Spillway

When water elevations rise above the Reservoir's OHWM (typically from natural inflows from the Tiger Creek watershed upstream of the Reservoir), water flows into the bathtub drop inlet and down the concrete spillway. The water becomes airborne before entering the plunge pool. The bathtub drop inlet is roughly 90 feet long, 6 feet wide, and 22 feet deep. The concrete spillway is irregularly shaped and ranges from 30 feet wide to roughly 75 feet wide and is approximately 110 feet long. The spillway has vertical training walls that are roughly 8 feet tall. All components of the bathtub drop inlet and concrete spillway are considered ephemeral drainage.

Perennial Drainage

Tiger Creek (PS-1) and an unnamed stream (PS-2) that crosses Spur 10 are naturally occurring perennial drainages in the Area of Analysis. Tiger Creek is a tributary of the North Fork of the Mokelumne River. Tiger Creek ranges from approximately 5 to 10 feet wide immediately downstream of the Dam to approximately 15 to 30 feet wide below the confluence with the existing plunge pool and spillway channel. Bedrock, boulder, cobble, and gravel compose the channel bottom. The banks of Tiger Creek are forested, and the forest canopy provides a relatively high degree of stream shading, with the exception of the area immediately downstream of the Dam which has been cleared of most vegetation. Understory vegetation is generally lacking along most of the length of the creek banks. Cut logs and fallen tree limbs are scattered within much of the forest surrounding the creek.

Based on fish community sampling conducted by PG&E and their consultants in Tiger Creek downstream of the Area of Analysis, the fish community in Tiger Creek comprises rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), and green sunfish (*Lepomis cyanellus*), although trout appear to be the dominant species in Tiger Creek (Pacific Gas and Electric Company 2017a, 2017b, 2020, 2021, 2022a). No fish were observed in the Area of Analysis during visual surveys conducted on April 14, 2023 (as described in Section 3.5.3.2 *Field Surveys*).

A segment of an unnamed creek (PS-2) crosses under Spur 10 through a five-foot diameter culvert. This creek is an average of seven feet wide within the Area of Analysis and flow was observed in the creek at the time of the August 25, 2022, survey. Banks of the creek are mapped within the Sierran mixed conifer forest but support Himalayan blackberry and dogwood near the creek edge.

Other Perennial Drainage Features

Plunge Pool

The plunge pool is an earthen-lined structure located at the base of the spillway chute. The feature appears to support year-round water with seasonal fluctuations in the water level and surface area. When the Reservoir is actively spilling and fills the plunge pool, water flows directly from the plunge pool into Tiger Creek. The plunge pool is unvegetated open water.

Lower Tiger Creek Canal

Lower Tiger Creek Canal is a concrete structure with a flat bottom and vertical sides that conveys water from the Reservoir to the Tiger Creek Forebay. Water from the forebay flows into the penstock and down to the Tiger Creek Powerhouse before being discharged into the North Fork Mokelumne River. The canal is roughly 15 feet wide and ranges from 10 feet tall to 17 feet tall within the Area of Analysis. The canal is unvegetated open water.

Reservoir

The Dam was built in 1931 to impound Tiger Creek and create the Reservoir. The Reservoir is fed naturally by Tiger Creek upstream of the Dam and artificially by the Tiger Creek Conduit, which conveys water from the Mokelumne River through a PG&E-regulated diversion at the Salt Springs Powerhouse over 12 miles east of the Dam. The Reservoir's water surface level fluctuates throughout the year for multiple reasons; however, PG&E Power Generation operates the Reservoir with a normal maximum water surface elevation of 3,589.05 feet (North American Vertical Datum of 1988), or 21.25 feet on the staff gage at the Reservoir's existing intake structure. The reservoir land cover type is entirely open water. This is an inundated, unvegetated cover type. The Reservoir is known to support rainbow trout, brown trout, and green sunfish. PG&E regularly conducts fish rescues at the Tiger Creek Forebay, and several hundred brown trout and smaller number of rainbow trout and green sunfish are relocated to the Reservoir during these rescue events. Unidentified minnows (presumably of the Cyprinidae [carp or minnow] family) have also been relocated to the Reservoir as part of these rescue events. The Reservoir provides habitat for benthic macroinvertebrates, an important food item for fish in the Reservoir.

Developed/Disturbed

The developed/disturbed portions of the Area of Analysis are unvegetated or very sparsely vegetated areas, including paved and gravel roads, parking areas, the Dam and associated structures not mapped as drainages, and maintenance buildings.

3.5.4.3 Waters of the United States and Waters of the State

The Area of Analysis contains 5 features that are wetlands (emergent wetland and seasonal wetland) and 18 that are non-wetland waters (ditch, ephemeral drainage, perennial drainage, and reservoir) which are described in Section 3.5.4.2 *Land Cover Types in the Area of Analysis*. All features are at least preliminarily considered waters of the United States, under USACE jurisdiction, and waters of the State, under State Water Board jurisdiction. Waters of the United States that are wetlands meet the three criteria of supporting a dominance of wetland plants, hydric soils, and wetland hydrology. Waters of the State must meet at least two of those three criteria. For non-wetland water features, such as rivers, streams, channels, and lakes, the extent of potential USACE jurisdiction is determined by identification of the OHWM, which is defined as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 Code of Federal Regulations [CFR] 328.3[e]). The OHWM also represents the extent of waters of the State.

A delineation of waters of the United States was conducted within the Area of Analysis. The boundaries of the potential waters of the United States in the Area of Analysis, as shown on Figure 3.5-1, *Biological Resources in the Area of Analysis*, are pending submittal and subsequent verification by the USACE Sacramento District.

3.5.4.4 Special-Status Species

Special-status species are plants and animals that are legally protected under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or other regulations, and species considered sufficiently rare by the scientific community to qualify for such listing. For the purposes of this document, special-status species fall into the following categories:

- Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.11 [listed animals] and 17.12 [listed plants], and various notices in the *Federal Register* [FR] [proposed species]);
- Species that are candidates for possible future listing as threatened or endangered under the ESA (87 FR 26152, May 3, 2022);
- Species listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 CCR 670.5);
- Species that meet the definitions of rare or endangered under CEQA (CEQA Guidelines 15380);
- Animals listed as California species of special concern on CDFW’s Special Animals List (California Department of Fish and Wildlife 2023b);
- Animals that are fully protected in California under the California Fish and Game Code (sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]);
- Bats identified as medium or high priority on the Western Bat Working Group regional priority species matrix (Western Bat Working Group 2017a);
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.);

- Plants considered by CDFW and CNPS to be "rare, threatened, or endangered in California" (Rare Plant Ranks 1B and 2) (California Department of Fish and Wildlife 2023a; California Native Plant Society 2023); and
- Plants identified by CDFW and CNPS about which more information is needed to determine their status, and plants of limited distribution (Rare Plant Ranks 3 and 4), (California Department of Fish and Wildlife 2023a; California Native Plant Society 2023), which may be included as special-status species based on local significance or recent biological information.

Special-Status Plants

Based on CNDDB (California Department of Fish and Wildlife 2023a) records and the CNPS inventory search (California Native Plant Society 2023), 38 special-status plant species were identified as having potential to occur in the Area of Analysis. There were no special-status plants included on the USFWS (2023) species list for the Area of Analysis. The 38 special-status plants documented on the CNDDB and CNPS lists are listed in Table 3.5-2, including the scientific name, common name, status, distribution, habitat requirements, and potential for occurrence of each species in the Area of Analysis.

Eight of the 38 special-status plants were identified as having no potential to occur in the Area of Analysis because the species does not occur in the elevational range of the Area of Analysis and/or suitable habitat for the species is not present in the Area of Analysis (i.e., pine/blue oak woodland, chaparral, cismontane woodland).

Twenty-three of the 38 special-status plants were identified as having low potential to occur in the Area of Analysis because suitable habitat is present, and species are recorded more than five miles from the Area of Analysis. Three species were identified as having moderate potential to occur, because suitable habitat is present and species are recorded within two to five miles of the Area of Analysis. Four species were considered to have high potential to occur (Pleasant Valley mariposa-lily [*Calochortus clavatus* var. *avius*], Brandegee's clarkia [*Clarkia biloba* ssp. *brandegeeae*], Sierra clarkia [*Clarkia virgata*], and Jepson's dodder [*Cuscuta jepsonii*]), because suitable habitat is present and there are recorded occurrences within approximately two miles of the Area of Analysis.

Botanical surveys during the reported blooming periods for all of the special-status plant species were conducted in the Area of Analysis (as described in Section 3.5.3.2 *Field Surveys*), and none were observed. Therefore, it is assumed that no special-status plants are present in the Area of Analysis.

Table 3.5-2. Special-Status Plants with Potential to Occur in the Vicinity of the Area of Analysis

Common and Scientific Names	Status—Federal/ State/ CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
Sanborn's onion *Allium sanbornii* var. *sanbornii*	–/–/4.2	Cascade Range foothills and Sierra Nevada Foothills, from Shasta County to Calaveras County; Oregon Gravelly or usually serpentine soils in chaparral, cismontane woodland, and lower montane coniferous forest; 855–4,955 feet	May–September	Low potential; potential for suitable soils in Sierran mixed conifer forest; nearest recorded occurrence is more than five miles from the Area of Analysis.
Three-bracted onion *Allium tribracteatum*	–/–/1B.2	Central high Sierra Nevada: Calaveras and Tuolumne Counties Volcanic soils in chaparral, lower and upper montane coniferous forest; 3,610–9,845 feet	April–August	Low potential; suitable habitat in Sierran mixed conifer forest; nearest recorded occurrence is more than five miles from the Area of Analysis.
Ione manzanita *Arctostaphylos myrtifolia*	–/–/1B.2	Central Sierra Nevada Foothills, Amador and Calaveras Counties Chaparral, cismontane woodland; 195–1,905 feet	November–March	No potential; species range is below the Area of Analysis elevations.
Upswept moonwort *Botrychium ascendens*	–/–/2B.3	Southern high Cascade Range, and scattered occurrences elsewhere: Butte,	June (July)–August	Low potential; suitable habitat in seasonal and emergent wetlands;

Common and Scientific Names	Status—Federal/State/CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
		El Dorado, Lassen, Mono, Modoc, Plumas, Shasta, Tehama, and Tulare Counties; Idaho, Oregon, Nevada, Washington, and elsewhere Wet areas in lower montane coniferous forest; 3,660–9,990 feet		recorded more than five miles from the Area of Analysis.
Scalloped moonwort *Botrychium crenulatum*	–/–/2B.2	Scattered occurrences in mountains of California; Nevada, Oregon, and elsewhere Bogs and fens, lower montane coniferous forest, meadows and seeps, freshwater marshes and swamp; 4,160–10,760 feet	June–September	Low potential; suitable habitat in seasonal and emergent wetlands; recorded more than five miles from the Area of Analysis.
Mingan moonwort *Botrychium minganense*	–/–/4.2	High Cascade Range, southern High Sierra Nevada with occurrences in Butte, Fresno, Lassen, Modoc, Nevada[?], Placer, Plumas, San Bernardino, Shasta, Sierra, Tehama, and Tulare Counties; Arizona, Idaho, Nevada,	July–September (October)	No potential; species range is above the Area of Analysis elevations.

Common and Scientific Names	Status—Federal/State/CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
		Oregon, Utah, Washington, and elsewhere Wet areas in lower montane coniferous forest; 4,770–6,900 feet		
Watershield *Brasenia schreberi*	–/–/2B.3	Scattered occurrences in north and central California; widespread across the U.S. Freshwater marshes; 0–7,220 feet	June–September	Low potential; suitable habitat in emergent wetlands; recorded more than five miles from the Area of Analysis.
Pleasant Valley mariposa-lily *Calochortus clavatus* var. *avius*	–/–/1B.2	Northern and central Sierra Nevada Foothills: Amador, Calaveras, El Dorado, and Mariposa* Counties Lower montane coniferous forest on Josephine silt loam and volcanic soils; 1,000–5,905 feet	May–July	High potential; suitable soils unlikely in Sierran mixed conifer forest; nearest known occurrences are 1.4 miles north of the Spur 10 road, 1.6 miles northwest of the Dam area, and 2.6–3.4 miles northeast of the Dam area.
Fresno ceanothus *Ceanothus fresnensis*	–/–/4.3	Central Sierra Nevada, Calaveras, El Dorado, Fresno, Madera, Mariposa, Placer, Tulare, and Tuolumne Counties Openings in cismontane woodland, lower montane	April (May)–July	Low potential; suitable habitat in Sierran mixed conifer forest; nearest recorded occurrence is more than five miles from the Area of Analysis.

Common and Scientific Names	Status—Federal/State/CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
		coniferous forest; 2,955–7,250 feet		
Red Hills soaproot *Chorogalum grandiflorum*	–/–/1B.2	North and central Sierra Nevada Foothills: Amador, Butte, Calaveras, El Dorado, Placer, and Tuolumne Counties Serpentine or gabbro soils in chaparral, lower montane coniferous forest, and cismontane woodland; 805–5,545 feet	(April) May–June	Moderate; potential; may be serpentine at Cedar Mill staging area; nearest known occurrences are 1 mile north, 3.8 miles west, 4.3 miles west, and 4.5 miles west of the Cedar Mill staging area, but nearest recorded occurrence to other parts of the Area of Analysis is five miles west.
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	–/–/4.2	Northern Sierra Nevada Foothills from Butte to El Dorado Counties Chaparral, cismontane woodland, lower montane coniferous forest, often on roadsides; 245–3,000 feet	(March) May–August	High potential; suitable habitat in Sierran mixed conifer forest; recorded 1.3 miles southeast of the Cedar Mill staging area.
Sierra clarkia *Clarkia virgata*	–/–/4.3	Northern and central Sierra Nevada, including portions of Amador, Calaveras, El Dorado, Mariposa, and Tuolumne Counties	May–August	High potential; suitable habitat in Sierran mixed conifer forest; recorded 1.9 miles northwest of the Area of Analysis.

Common and Scientific Names	Status—Federal/ State/ CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
		Cismontane woodland, lower montane coniferous forest; 1,310–5,510 feet		
Streambank spring beauty *Claytonia parviflora* ssp. *grandiflora*	–/–/4.2	Known only from pine/blue oak woodlands in the Sierra Nevada foothills: Amador, Butte, Calaveras, El Dorado, Fresno, Kern, Placer, Tulare, Tuolumne Counties Rocky sites in cismontane woodland; 820–3,935 feet	February–May	No potential; no suitable pine/blue oak woodland habitat in the Area of Analysis.
Bisbee Peak rush-rose *Crocanthemum suffrutescens*	–/–/3.2	Amador, Calaveras, and El Dorado Counties Chaparral, often in burned or disturbed areas on gabbroic soils; 245–2,220 feet	April–August	No potential; species range is below the Area of Analysis elevations.
Jepson's dodder *Cuscuta jepsonii*	–/–/1B.2	Last collected on Mt. Shasta in 1954, occurrences in Lake, Mariposa, Siskiyou, Trinity, and Tulare Counties Streambanks in North Coast coniferous forest, parasitic on *Ceanothus*; 3,935–7,545 feet	July–September	High potential; suitable habitat along Tiger Creek and PS-2; nearest known occurrences are 0.25–0.44 mile north of the Spur 10 road.
Mountain lady slipper *Cypripedium montanum*	–/–/4.2	Del Norte, Glenn, Humboldt, Madera, Mendocino, Modoc, Mariposa, Plumas, Shasta,	March–August	Low potential; suitable habitat in Sierran mixed conifer forest; nearest

Common and Scientific Names	Status—Federal/State/CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
		Sierra, Siskiyou, Sonoma, Tehama, Trinity, Tuolumne, and possibly San Mateo and Santa Cruz Counties; Idaho, Oregon, Washington, Wyoming Broadleaved upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest; 605–7,515 feet		known recorded occurrence is more than five miles from the Area of Analysis.
Yellow-lip pansy monkeyflower *Diplacus pulchellus*	–/–/1B.2	Calaveras, El Dorado, Mariposa, and Tuolumne Counties; lower montane coniferous forest, meadows and seeps, vernally mesic, often disturbed areas; clay soils; 1,970–6,650 feet	April–July	Low potential; suitable habitat in seasonal wetlands and emergent wetlands; recorded more than five miles from the Area of Analysis.
Obtuse starwort *Engellaria* [*Stellaria*] *obtusa*	–/–/4.3	North Coast Ranges, Cascade Range, northern and central Sierra Nevada, and Modoc Plateau: in Butte, Glenn, Humboldt, Lassen, Nevada, Plumas, Shasta, Sierra, Tehama, and Tuolumne	May–September (October)	Low potential; suitable habitat in Sierran mixed conifer forest and willow riparian; nearest known recorded occurrence is more than five miles from the Area of Analysis.

Common and Scientific Names	Status—Federal/ State/ CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
		Counties; Idaho, Oregon, Washington and elsewhere Lower montane coniferous forest, riparian woodland, upper montane coniferous forest; 490–7,515 feet		
Tripod buckwheat *Eriogonum tripodum*	–/–/4.2	Amador, Colusa, El Dorado, Glenn, Lake, Mariposa, Napa, Placer, Tehama, and Tuolumne Counties Chaparral, cismontane woodland, often on serpentinite; 655–5,250 feet	May–July	No potential; no suitable chaparral or cismontane woodland in the Area of Analysis.
Slender cottongrass *Eriophorum gracile*	–/–/4.3	Butte, El Dorado, Lassen, Madera, Mariposa, Nevada, Plumas, San Francisco*, Shasta, Sierra, Siskiyou[?], Sonoma, and Tuolumne Counties; Idaho, Oregon, Washington, and Wyoming Acidic soils in bogs and fens, meadows and seeps, upper montane coniferous forest; 4,200–9,515 feet	May–September	No potential; no suitable acidic wetland habitats in the Area of Analysis.
Tansy-flowered woolly sunflower	–/–/4.3	Calaveras and Mariposa Counties	May–July	Low potential; suitable habitat in Sierran mixed

Common and Scientific Names	Status—Federal/State/CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
Eriophyllum confertiflorum var. *tanacetiflorum*		Cismontane woodland, lower montane coniferous forest; 1,000–4,395 feet		conifer forest; nearest known recorded occurrence is more than five miles from the Area of Analysis.
Tuolumne button-celery *Eryngium pinnatisectum*	–/–/1B.2	Amador, Calaveras, Sacramento, and Tuolumne Counties Vernal pools and moist areas in cismontane woodland and lower montane coniferous forest; 230–3,000 feet	May–August	Moderate potential; suitable habitat in seasonal and emergent wetlands; nearest known recorded occurrence is 4.5 miles west of the Cedar Mill staging area.
Small-flowered monkeyflower *Erythranthe inconspicua*	–/–/4.3	Amador, Calaveras, Mariposa, Fresno, and Tuolumne Counties Chaparral, cismontane woodland, lower montane coniferous forest; 900–2,495 feet	May–June	Low potential; suitable habitat in Sierran mixed conifer forest; nearest known recorded occurrence is more than five miles from the Area of Analysis.
Cut-leaved monkeyflower *Erythranthe laciniata*	–/–/4.3	Alameda, Amador, Calaveras, El Dorado, Fresno, Madera, Mariposa, Tulare, and Tuolumne Counties Chaparral, lower and upper montane coniferous forest, mesic areas; on granitic	April–July	Low potential; suitable habitat in Sierran mixed conifer forest; nearest known recorded occurrence is more than five miles from the Area of Analysis.

Common and Scientific Names	Status—Federal/State/CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
		substrates; from 1,610–8,695 feet		
Stanislaus monkeyflower *Erythranthe marmorata*	–/–/1B.1	Amador, Calaveras, Fresno, Stanislaus, and Tuolumne Counties Cismontane woodland, lower montane coniferous forest; 330–2,955 feet	March–May	Low potential; suitable habitat in Sierran mixed conifer forest; nearest known occurrence is more than five miles from the Area of Analysis.
Sierra starwort *Hartmaniella sierrae*	–/–/4.2	High Sierra Nevada from Plumas to Tuolumne Counties Chaparral, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest; 4,020–7,200 feet	March–May	Low potential; suitable habitat in Sierran mixed conifer forest; recorded more than five miles from the Area of Analysis.
Parry's horkelia *Horkelia parryi*	–/–/1B.2	Amador, Calaveras, El Dorado, and Mariposa Counties Chaparral, or cismontane woodland openings, especially Ione formation, dry slopes; 260–3,510 feet	April–September	No potential; no Ione formation or suitable habitats in the Area of Analysis.
Yosemite tarplant *Jensia yosemitana*	–/–/3.2	Amador, Fresno, Madera, Mariposa, Tulare, and Tuolumne Counties	April (May)–July	Low potential; suitable habitat in Sierran mixed conifer forest and wetlands; nearest recorded

Common and Scientific Names	Status—Federal/ State/ CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
		Lower montane coniferous forest, meadows, and seeps; 3,935–7,545 feet		occurrence is more than five miles from the Area of Analysis.
Foothill jepsonia *Jepsonia heterandra*	–/–/4.3	Amador, Calaveras, El Dorado, Mariposa, Stanislaus, and Tuolumne Counties Cismontane woodland, lower montane coniferous forest; 165–1,640 feet	August–December	No potential; species range is below the Area of Analysis elevations.
Dubious pea *Lathyrus sulphureus* var. *argillaceus*	–/–/3	Klamath Ranges, North Coast Ranges, Sierra Nevada in Calaveras, El Dorado, Nevada[?], Placer, Shasta, and Tehama Counties Cismontane woodlands, lower and upper coniferous forests; 490–3,050 feet	April–May	Low potential; suitable habitat in Sierran mixed conifer forest; nearest recorded occurrence is more than five miles from the Area of Analysis.
Hutchison's lewisia *Lewisia kelloggii* ssp. *hutchisonii*	–/–/3.2	Northern Sierra Nevada and Cascades; many counties uncertain Openings and ridgetops in upper montane coniferous forest, often on slate, sometimes on rhyolite tuff; 2,510–7,760 feet	April (May)–August	Low potential; unlikely suitable substrates, suitable habitat in Sierran mixed conifer forest; nearest recorded occurrence is more than five miles from the Area of Analysis.

Common and Scientific Names	Status—Federal/State/CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
Kellogg's lewisia *Lewisia kelloggii* ssp. *kelloggii*	–/–/3.2	Alpine[?], Amador[?], El Dorado[?], Humboldt[?], Madera[?], Mariposa, Placer, Shasta[?], Sierra[?], Siskiyou[?], Trinity[?], Tuolumne Counties Openings, ridgetops, often slate, sometimes rhyolite tuff in upper montane coniferous forest; 4,805–7,760 feet	April (May)–August	Low potential; unlikely suitable substrates, suitable habitat in Sierran mixed conifer forest; nearest recorded occurrence is more than five miles from the Area of Analysis.
Humboldt lily *Lilium humboldtii* ssp. *humboldtii*	–/–/4.2	Southern Cascade Range, high Sierra Nevada: Amador, Butte, Calaveras, El Dorado, Fresno, Madera, Mariposa, Nevada, Placer, Tehama, Tuolumne, and Yuba Counties Openings in chaparral, cismontane woodland, lower montane coniferous forest; 295–4,200 feet	May–July (August)	Low potential; suitable habitat in Sierran mixed conifer forest; nearest recorded occurrence is more than five miles from the Area of Analysis.
Stebbins' lomatium *Lomatium stebbinsii*	–/–/1B.1	Calaveras and Tuolumne Counties On thin gravelly, volcanic clay soils in open ponderosa pine forest or chaparral in absence of other vegetation; 4,085–7,790 feet	March–May	Low potential; unlikely suitable substrates, suitable and open habitat in Sierran mixed conifer forest; nearest recorded occurrence is more than five

Common and Scientific Names	Status—Federal/State/CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
				miles from the Area of Analysis.
Sierra sweet bay *Myrica hartwegii*	–/–/4.3	El Dorado, Madera, Mariposa, Nevada, Tuolumne, and Yuba[?] Counties Cismontane woodland, Lower montane coniferous forest, riparian forest; 490–5,740 feet	May–June	Low potential; suitable habitat in Sierran mixed conifer forest; nearest recorded occurrence is more than five miles from the Area of Analysis.
Western waterfan lichen *Peltigera gowardii*	–/–/4.2	Amador, Butte, Calaveras, El Dorado, Fresno, Madera, Mariposa, Mono, Plumas, Sierra, Siskiyou, Trinity, Tulare, Tuolumne, and Yuba Counties; Georgia, Maine, Massachusetts, Montana, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Tennessee, Vermont, Virginia, and Washington Riparian forest; 3,495–8,595 feet	– Foliose lichen	Low potential; suitable habitat in willow riparian; nearest recorded occurrence is more than five miles from the Area of Analysis.
Coleman's rein orchid *Piperia colemanii*	–/–/4.3	Scattered distribution along eastern Central Valley and foothills from Siskiyou County to Tulare County	June–August	Low potential; suitable habitat in Sierran mixed conifer forest; recorded

Common and Scientific Names	Status—Federal/ State/ CRPR[a]	Distribution and Habitat Requirements	Blooming Period	Potential for Occurrence
		Chaparral and lower montane coniferous forest, often on sandy soils; 3,935–7,545 feet		more than five miles from the Area of Analysis.
Prairie wedge grass *Sphenopholis obtusata*	–/–/2B.2	Amador, Fresno, Inyo, Mono, Riverside, San Bernardino, San Diego[?], and Tulare Counties Moist areas in meadows and seeps, cismontane woodland; 985–6,560 feet	April–July	Moderate potential; suitable habitat in emergent and seasonal wetlands; nearest recorded occurrence is four miles west of the Cedar Mill staging area.

Sources: California Department of Fish and Wildlife 2023a; California Native Plant Society 2023; Consortium of California Herbaria 2023.

[?] = Occurrence confirmed, but possibly extirpated.

[a] Status Explanations:

Federal:

– = not listed under the federal Endangered Species Act.

State:

– = not listed under the California Endangered Species Act.

CRPR = California Rare Plant Rank:

1B = rare, threatened, or endangered in California and elsewhere.

2B = rare, threatened, or endangered in California but more common elsewhere.

3 = plants about which more information is needed, a review list.

4 = plants of limited distribution that are on a watch list.

.1 = seriously endangered in California.

.2 = fairly endangered in California.

.3 = not very endangered in California.

Special-Status Animals

Based on the USFWS (2023) and NMFS (2016) species lists and the CNDDB (California Department of Fish and Wildlife 2023a) records search, 26 special-status animal species were identified as having potential to occur in the Area of Analysis.

Two fish species (California roach [*Hesperoleucus symmetricus*] and hardhead [*Mylopharadon conocephalus*]) were identified as potentially occurring in the Area of Analysis. California roach and hardhead are not known to occur in the Area of Analysis (California Department of Fish and Wildlife 2023a). The nearest location to the Area of Analysis where California roach and hardhead are known to occur is the North Fork of the Mokelumne River (Pacific Gas and Electric Company 2017b), which is more than 3 miles downstream from the Dam area. In addition, anadromous species are blocked from accessing the North Fork of the Mokelumne River and Tiger Creek by Camanche Dam, which is located east of Lodi approximately 40 miles downstream of the Dam area on the Mokelumne River.

Of the remaining 24 special-status animal species identified, eight have a moderate or high potential to occur in the Area of Analysis given their known range and presence of suitable habitat. The remaining 15 special-status animals have low to no potential to occur in the Area of Analysis and are not discussed further. One additional special-status animal species, bald eagle (*Haliaeetus leucocephalus*), was not on the CNDDB list but was observed during the August 17, 2022, survey and was included as having the potential to occur in the Area of Analysis. All special-status animals that were considered are listed in Table 3.5-3, which identifies their regulatory status, distribution, habitat requirements, and a rationale for their potential to occur in the Area of Analysis. The nine special-status animal species that have a high or moderate potential to occur in the Area of Analysis are discussed below.

Table 3.5-3. Special-Status Animal Species with Potential to Occur in the Vicinity of the Tiger Creek Regulator Reservoir Dam Spillway Replacement Area of Analysis

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
Grubbs' cave harvestman *Banksula grubbsi*	–/–/–	Known only from Black Chasm Cave in Volcano, Amador County. Occurs in caves.	No potential; no caves in the Area of Analysis and the Area of Analysis is outside of species' known range.
Grady's Cave amphipod *Stygobromus gradyi*	–/–/–	Calaveras and Tuolumne Counties. Occurs in caves with springs.	No potential; no caves in the Area of Analysis.
Graham's Cave amphipod *Stygobromus grahami*	–/–/–	Amador Calaveras, and El Dorado Counties. Occurs in caves with small streams and pools.	No potential; no caves in the Area of Analysis.
Leech's skyline diving beetle *Hydroporus leechi*	–/–/–	Has been found at sporadic locations in norther California in San Mateo, Sonoma, Mendocino, Tehama, Siskiyou, Plumas, Calaveras, Mariposa, and Madera Counties. Found in freshwater ponds, shallow water of stream marshes and lakes; lacustrine habitat	Low potential; no shallow marsh areas in Tiger Creek Regulator Reservoir or along Tiger Creek in the Area of Analysis; one historical (1893) record for an occurrence more than five miles from the Area of Analysis.
Monarch butterfly *Danaus plexippus*	C/–/–	Adults migrate from August–October, and winter along the California coast and in central Mexico.	Low potential; could pass through or forage in Area of Analysis.

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
		Open habitats including fields, meadows, weedy areas, marshes, and roadsides. Monarch butterflies roost in wind-protected tree groves (such as eucalyptus) with nectar and water sources nearby. Caterpillar host plants are milkweeds.	
Obscure bumble bee *Bombus caliginosus*	–/–/–	Occurs along the Pacific Coast, from southern California to southern British Columbia, with scattered records from the east side of California's Central Valley. Uncommon throughout its range. Inhabits coastal prairies and Coast Range meadows. Nesting occurs underground as well as above ground in abandoned bird nests. Food plant genera include *Ceanothus*, *Cirsium*, *Clarkia*, *Keckiella*, *Lathyrus*, *Lotus*, *Lupinus*, *Rhododendron*, *Rubus*, *Trifolium*, and *Vaccinium*.	Low potential; several genera of food plants are present at the Dam area and Doakes Ridge; however, these areas are outside the species' known range; Cedar Mill staging area is within the known range, but very low quality grassland is present; one historical (1969) record for an occurrence approximately seven miles from the Cedar Mill staging area.
Crotch bumble bee *Bombus crotchii*	–/CE/–	Pacific Coast, Western Desert, Great Valley, and adjacent foothills throughout most of southwestern California. Occurs in open grassland and scrub; nests underground. Food plants include *Asclepias*, *Chaenactis*, *Lupinus*, *Medicago*, *Phacelia*, and *Salvia*.	Low potential; genera of food plants are present in the grassland areas at the dam area and Doakes Ridge; however, this species is rare, and the patches of grassland are fragmented in the vicinity of the Area of Analysis and likely too distant to support diverse bumble bee communities. Low potential to

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
			occur at Cedar Mill staging area due to very low quality grassland; one historical (1967) record and one more recent (2020) record for occurrences approximately 15 miles from the Area of Analysis.
Central California roach *Lavinia symmetricus symmetricus*	T/–/–	Occurs in tributaries to the Sacramento and San Joaquin Rivers and tributaries to San Francisco Bay. Central California roach are found in small, high gradient, often intermittent tributaries but appear to be poorly adapted to lakes and reservoirs. They are adaptable fish and tolerate relatively high water temperatures and low oxygen levels (Moyle et al. 2015). Documented population in the North Fork of the Mokelumne River (Pacific Gas and Electric Company 2017b).	Low potential; Tiger Creek is a relatively steep gradient stream (approximately six percent or greater) that likely precludes presence in the Dam area; no CNDDB records for occurrences in Tiger Creek; have not been documented in fish community surveys downstream of the Dam (Pacific Gas and Electric Company 2017a, 2017b, 2020, 2021, 2022a).
Hardhead *Mylopharodon conocephalus*	–/SSC/–	Tributary streams in the San Joaquin River drainage; large tributary streams in the Sacramento River and the mainstem. Resides in low to mid-elevation streams and prefers clear, deep pools and runs with slow velocities; also occurs in reservoirs. Documented population in the North Fork of the Mokelumne River	Low potential; Tiger Creek is a relatively steep gradient stream (approximately six percent or greater) that likely precludes presence in the Dam area; no CNDDB records for occurrences in Tiger Creek; have not been documented in fish community

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
		(Pacific Gas and Electric Company 2017b).	surveys downstream of the Dam (Pacific Gas and Electric Company 2017a, 2017b, 2020, 2021, 2022a).
Southern long-toed salamander *Ambystoma macrodactylum sigillatum*	–/SSC/–	High elevation meadows, ponds, and lakes in the Sierra Nevada, Cascade, and Klamath mountains. Breeds in high mountain ponds and lakes. Adults utilize small mammal burrows and moist areas under logs and rocks.	No potential; presence of brown trout (*Salmo trutta*) in Tiger Creek Regulator Reservoir precludes presence.
California red-legged frog *Rana draytonii*	T/SSC/–	Found along the coast and coastal mountain ranges of California from Mendocino County to San Diego County and in the Sierra Nevada from Tehama County to Fresno County; elevation near sea level to about 4,900 feet. Permanent and semipermanent aquatic habitats, such as slow-moving streams or creeks and cold-water ponds, with emergent and submergent vegetation (shrubby riparian). May estivate in rodent burrows or cracks during dry periods.	Low to no potential; presence of brown trout in Tiger Creek Regulator Reservoir precludes presence; Tiger Creek has a bedrock and boulder substrate and is generally fast-flowing, and does not constitute suitable breeding, non-breeding, foraging or dispersal habitat for California red-legged frog. Ponds in and near the Cedar Mill staging area contain large fish and bullfrogs and the surrounding upland is heavily disturbed.

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
Sierra Nevada yellow-legged frog *Rana sierrae*	T/SSC/–	Found in the Sierra Nevada above 4,500 feet from Plumas County to southern Tulare County. Isolated populations in Butte County and near Mono Lake, Mono County. Associated with streams, lakes, and ponds in montane riparian, lodgepole pine, sub-alpine conifer, and wet meadow habitats; also includes sunny river margins, meadow streams, isolated pools, and lake borders in the Sierra Nevada.	No potential; the Area of Analysis is below the elevation where this species occurs.
Foothill yellow-legged frog – south Sierra DPS *Rana boylii*	PE/E/–	Occurs in the Klamath, Cascade, north Coast, south Coast, Transverse, and Sierra Nevada Ranges up to approximately 6,000 feet. Creeks or rivers in woodland, forest, mixed and chaparral, and wet meadow habitats with rocky and gravel substrates and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	Low potential; not observed in the Dam area during 11 focused surveys conducted between 2001 and 2020 (Pacific Gas and Electric Company 2022b). May occur downstream of the Dam area or upstream of the Reservoir but is not anticipated to occur in the Dam area. The closest record for an occurrence (from 1999) is approximately 0.2-mile downstream of the Dam. Instream flow releases downstream of the Dam that area required by the FERC license would be maintained throughout construction and downstream flows

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
			would not be affected. While minimal changes to the hydrology and geomorphic processes may occur immediately downstream of the plunge pool as a result of the installation of rock slope protection at the downstream end of the pool, the placement of this rock is a minor obstruction and no changes in hydrology or geomorphic processes are expected to occur further downstream where frogs have been observed.
Western pond turtle *Actinemys marmorata*	–/SSC/–	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada. Occurs in woodlands, grasslands, and open forests. Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with some watercress, cattails, water lilies, or other aquatic vegetation. Overwintering habitat consists of mud in stream and pond bottoms or a variety of upland habitats including riparian.	Moderate potential; could occur in Tiger Creek Regulator Reservoir or ponds in and near the Cedar Mill staging area. Unlikely to occur in Tiger Creek due to the extensive amount of downed wood debris and shading along the creek. The closest CNDDB occurrence is approximately five miles from the Dam area.

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
Bald eagle *Haliaeetus leucocephalus*	–/E/P	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, east of the Sierra Nevada south of Mono County, and some rangelands and coastal wetlands. In western North America, nests and roosts in coniferous forests, woodlands, grasslands, and wetland habitats within 1 mile of a lake, reservoir, stream, or the ocean; nests are normally built in upper canopy of large trees, such as conifers.	High potential; observed flying over and perched near the Area of Analysis; no records for nests within five miles of the Area of Analysis.
Northern goshawk *Accipiter gentilis*	–/SSC/–	Permanent resident in the Klamath and Siskiyou Mountains, across the Cascades, in the north Coast Ranges from Del Norte County to Mendocino County, and in the Sierra Nevada south to Kern County. Winters in Modoc, Lassen, Mono, and northern Inyo Counties. Nests and roosts in older stands of red fir, Jeffrey pine, Ponderosa pine, lodgepole pine, Douglas-fir, and mixed conifer forests.	Moderate potential; suitable foraging habitat present and known to occur in the vicinity but no goshawks were detected during 2022 surveys (as described in Section 3.5.3.2 *Field Surveys* and Section 3.5.4.4 *Special-Status Species*, under *Special-Status Animals*).

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
California spotted owl *Strix occidentalis occidentalis*	PT/SSC/–	Permanent resident east of the Cascade Range from Placer County north to the Oregon border, east of the Sierra Nevada from Alpine County to Inyo County. Scattered breeding populations along the coast and in southeastern California. Winters throughout the Central Valley and southeastern California. Nests in abandoned crow, hawk, or magpie nests, usually in dense riparian stands of willows, cottonwoods, live oaks, or conifers usually open or adjacent to grasslands, meadows, or shrublands; key habitat components are dense cover, suitable nest platforms, and open foraging areas.	Moderate potential; suitable foraging habitat present and known to occur in the vicinity but no spotted owls were detected during 2022 surveys in the Area of Analysis (as described in Section 3.5.3.2 *Field Surveys*, and in Section 3.5.4.4 *Special-Status Species,* under *Special-Status Animals*) or in years prior to 2021 when surveyed by Sierra Pacific Industries biologists (Wagner pers. comm.).
Great gray owl *Strix nebulosa*	–/E/–	Permanent resident of the Sierra Nevada from Plumas County south to the Yosemite National Park area. Occasionally occurs in northwestern California in the winter and the Warner Mountains in the summer. Found in or near late successional coniferous forests bordering meadows; this habitat provides cover and a cooler sub-canopy microclimate.	Low potential; no meadows in or adjacent to the Area of Analysis.

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
Fringed myotis *Myotis thysanodes*	–/–/WBWG-high	Found the length of the state, from the coast (including Santa Cruz Island) to over 5,900 feet in the Sierra Nevada. Records exist for the high desert and east of the Sierra Nevada however, the majority of known localities are on the west side of the Sierra Nevada. Found in a wide variety of habitats from low desert scrub to high elevation coniferous forests. Roosts in crevices in buildings, underground mines, rocks, cliff faces, and bridges. Roosts in a variety of trees, particularly large, decadent trees and snags. Has been found in mixed deciduous/coniferous forest and in both redwood and giant sequoia habitat.	Moderate potential; could roost in large trees and snags in the Dam area and Doakes Ridge; one CNDDB record for an occurrence that is approximately eight miles from the Dam area/Doakes Ridge.
Long-legged myotis *Myotis volans*	–/–/WBWG-high	Mountains throughout California, including ranges in the Mojave Desert; found from the coast to high elevation in the Sierra Nevada and White Mountains; central San Diego County, the Coast Range, and the Transverse Ranges between the Los Angeles basin and the Central Valley. Most common in woodlands and forests above 4,000 feet but occurs from sea level to 11,000 feet. Uses abandoned buildings, cracks in the ground, cliff crevices,	Moderate potential; could roost in trees in the Dam area and Doakes Ridge; one CNDDB record for an occurrence that is approximately 11 miles from the Dam area/Doakes Ridge.

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
		exfoliating tree bark, and hollows within snags as summer day roosts. Caves and mines are used for hibernation and may be used for night roosts.	
Hoary bat *Lasiurus cinereus*	–/–/WBWG-moderate	Occurs throughout California from sea level to 13,200 feet; winters along the coast and in southern California. Roosts singularly in dense foliage of medium and large trees in forested habitats; also found in riparian areas and in park and garden settings in urban areas.	Moderate potential; could roost in trees in the Dam area and Doakes Ridge; one CNDDB record for an occurrence that is approximately 11 miles from the Dam area/Doakes Ridge.
Silver haired bat *Lasionycteris noctivagans*	–/–/WBWG-moderate	Occurs throughout portions of California, primarily in coastal and montane forests from the Oregon border south along the coast to San Francisco Bay, and along the Sierra Nevada and Great Basin region to Inyo County. Has also been recorded in Monterey, Sacramento, Stanislaus, Ventura, and Yolo Counties and during migration may be found throughout the state. Primarily a forest bat that is associated with conifer and mixed conifer and hardwood forests. Nearly all maternity roosts are in natural hollows and bird excavated cavities of trees or under loose	Moderate potential; could roost in trees in the Dam area and Doakes Ridge; two CNDDB records that are approximately 3 miles from Cedar Mill staging area and 11 miles from the Dam area.

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
		bark of large diameter snags. Roosting sites are generally at least 50 feet above the ground. Uses multiple roosts and change roosts frequently throughout the summer, indicating that clusters of large trees are necessary. Has been found hibernating in hollow trees, under sloughing bark, in rock crevices, and occasionally under wood piles, in leaf litter, under foundations, and in buildings, mines and caves.	
Townsend's big-eared *Corynorhinus townsendii*	–/SSC/WBWG-high	Occurs throughout California, except for the highest elevations in the Sierra Nevada range. Associated with inland deserts; cool, moist coastal redwood forests; oak woodlands of the coastal ranges and Sierra Nevada foothills; and lower to mid-elevation mixed coniferous-deciduous forests. Roosts primarily in abandoned mines and natural caves, but also roosts in human-made structures and hollow trees.	Moderate potential; could roost in trees in the Dam area or Doakes Ridge; one CNDDB record for an occurrence approximately six miles southwest of the Cedar Mill staging area.

Common and Scientific Name	Legal Status (Federal/State/ Other)[a]	Geographic Distribution and Habitat Requirements	Potential for Occurrence in the Area of Analysis
Sierra Nevada red fox *Vulpes vulpes necator*	–/T/–	Occurs in the Cascade Range, in Siskiyou County, and in the Sierra Nevada from Lassen County south to Tulare County. Coniferous forests, generally from 5,000 to 8,400 feet. Often associated with mountain meadows.	Low potential; the Area of Analysis is below the elevation range where this species typically occurs.
Fisher *Pekania pennanti*	–/SSC/–	Coastal mountains from Del Norte County to Sonoma County, east through the Cascades to Lassen County, and south in the Sierra Nevada to Kern County. Late successional coniferous forests and montane riparian habitats from 1,969 to 8,530 feet.	Low potential; could occasionally occur in the Dam area and at Doakes Ridge but would not den in the Area of Analysis; one historical (1965) CNDDB record for an occurrence more than five miles east of the Dam area.
North American porcupine *Erethizon dorsatum*	–/–/–	Occurs in forests in the Sierra Nevada, Cascade, Coast, and Transverse Ranges. Found in coniferous forest and mixed woodlands. Den in hollow trees or rocky areas.	Low potential; may occasionally occur in the Dam area and at Doakes Ridge but would not den in the Area of Analysis. Two records for occurrences approximately three miles and five miles southwest of the Cedar Mill staging area.

Western Pond Turtle

Western pond turtle (*Actinemys marmorata*) is a California species of special concern (California Department of Fish and Wildlife 2023a). In California, the species' range is discontinuously distributed through the state west of the Cascade–Sierra Nevada crest (Jennings and Hayes 1994:99). Aquatic habitats used by western pond turtle include ponds, lakes, marshes, rivers, streams, and irrigation ditches with a muddy or rocky bottom in grassland, woodland, and open forest areas (Stebbins 2003:250). Western pond turtles move to upland areas adjacent to watercourses to deposit eggs and overwinter (Jennings and Hayes 1994:98). The distance between the nest site and aquatic habitat depends on the availability of suitable nesting habitat adjacent to the occupied aquatic habitat (Jennings and Hayes 1994:101). Females usually select nest sites within 328 feet of aquatic habitat, although nests have been found 1,640 feet from a water body (Thomson et al. 2016:299). Lovich and Meyer (2002:540) reported nesting sites up to 1,919 feet from aquatic habitats, and Holland (1994:2-10) reported nesting sites up to 1,312 feet away from aquatic habitats. Eggs are laid from May to August in an earthen cavity and covered with soil, usually in a sunny area (Stebbins 1954:171). In the southern portion of the range and along the central coast, western pond turtle is active year-round. In the remainder of its range, western pond turtle typically becomes active in March and returns to overwintering sites by October or November (Jennings et al. 1992:11).

Tiger Creek Regulator Reservoir and ponds in and near the Cedar Mill staging area (Figure 3.5-1, *Biological Resources in the Area of Analysis*) provide suitable aquatic habitat for western pond turtle. Turtles are unlikely to occur in Tiger Creek due to the extensive amount of downed wood debris and shading within and along the creek. The upland habitat in the Dam area near the Reservoir is poor quality due to the steep slope and wood debris covering large portions of the slope. While western pond turtle may occur at ponds in and near the Cedar Mill staging area, they are not anticipated to use the staging area for upland nesting or hibernation due to the highly disturbed nature of the site. In addition, undisturbed areas near the ponds in the Cedar Mill staging area were excluded from the Project Area and equipment and materials would not be staged in these areas. There is one CNDDB record for an occurrence of western pond turtle approximately five miles east of the Dam area (California Department of Fish and Wildlife 2023a).

Bald Eagle

Bald eagle is state listed as endangered and is fully protected by the California Fish and Game Code. Bald eagle is also protected under the federal Bald and Golden

Eagle Protection Act. Bald eagle is a permanent resident and uncommon winter migrant in California (Zeiner et al. 1990a:122). The species breeds at coastal areas, rivers, lakes, and reservoirs with forested shorelines or cliffs in northern California. Wintering bald eagles are associated with aquatic areas containing some open water for foraging. Bald eagle nests in trees in mature and old growth forests that have some habitat edge and are somewhat close (within 1.25 miles) to water with suitable foraging opportunities. Bald eagles tend to select nest trees that are more than 1,640 feet from human development and disturbance (Buehler 2000). The species' breeding season is between February 1 and August 1. Bald eagles use snags or other hunting perches adjacent to large bodies of water or rivers to hunt for fish (Zeiner et al. 1990a:122).

A bald eagle was observed perched along the edge and flying over Tiger Creek Regulator Reservoir during the August 17, 2022, field survey. The Reservoir provides suitable foraging habitat. Bald eagles could nest in the vicinity of the Reservoir, although recreation/fishing and maintenance activities at the Reservoir likely discourage bald eagle nesting in the Dam area. There are no records for bald eagle nests within five miles of the Area of Analysis (California Department of Fish and Wildlife 2023a).

Northern Goshawk

Northern goshawk is a California species of special concern (California Department of Fish and Wildlife 2023a). Northern goshawk breeds in the North Coast Ranges, Sierra Nevada, Klamath Mountains, Cascade Range, and Warner Mountains. The species may also breed near Mount Pinos and in the San Jacinto, San Bernardino, and White Mountains (California Department of Fish and Game 2005). Northern goshawk typically nests on north-facing slopes in conifers, including red fir (*Abies magnifica*), white fir (*A. concolor*), Douglas-fir, lodgepole pine, ponderosa pine, Jeffrey pine, or aspen in mature and old-growth forests (California Department of Fish and Game 2005; Shuford and Gardali 2008:159; Squires et al. 2020). Nests are generally located in the largest trees of a stand in the lower third of the tree, or directly underneath the forest canopy; in California, nests were observed at heights ranging between 44 to 78 feet (Squires et al. 2020). In southern California, the breeding season for northern goshawk starts in April, while in northern California it can be delayed until mid-June (California Department of Fish and Game 2005). The breeding season is February 15 through September 15, and eggs are typically laid from mid-April to mid-May (United States Department of Agriculture Forest Service 2004:283). In northern California, the breeding season can start as late as mid-June (California Department of Fish and Game 2005).

No northern goshawks were detected during July and August 2022 surveys (as described in Section 3.5.3.2 *Field Surveys*) that were conducted in accordance with the Northern Goshawk Inventory and Monitoring Technical Guide (Woodbridge and Hargis 2006). Based on an evaluation of habitat during the surveys, the Dam area provides low quality nesting habitat for northern goshawk. The Dam area has an abundance of dense understory, which may reduce the habitat quality for northern goshawk, and much of the Dam area has steep terrain with few benches or flat areas, which have been shown to be used for goshawk nesting (Woodbridge and Hargis 2006:3-1). Additionally, recreation/fishing and maintenance activities at the Reservoir may discourage goshawk nesting in the area. Higher quality northern goshawk habitat is present in the vicinity of Doakes Ridge; however, low quality nesting habitat is present at the Doakes Ridge staging and spoils site because of the amount of human activity associated with the storage facilities in this area. There are five CNDDB records for northern goshawk nests that are six to eight miles south and southeast of the Dam area and Doakes Ridge (California Department of Fish and Wildlife 2023a).

California Spotted Owl

California spotted owl (*Strix occidentalis occidentalis*) is proposed for listing as threatened under the ESA and is a California species of special concern (California Department of Fish and Wildlife 2023a). California spotted owl occurs throughout its historic range, in the southern Cascade Range and northern Sierra Nevada from Shasta County to Kern County, as well as on the eastern side of the Sierra Nevada. The species also occurs in the coastal ranges from Monterey County to San Diego County and in the Transverse and Peninsular Ranges, excluding the Santa Cruz Mountains and San Luis Obispo County (Gutiérrez et al. 2020; United States Fish and Wildlife Service 2022:6). California spotted owl nests in larger trees and snags within old growth or mature forests primarily composed of conifers at higher elevations, and hardwoods at lower elevations (United States Fish and Wildlife Service 2022:11). In northern areas, the species uses multi-layered mixed conifer, redwood, and Douglas-fir environments up to 7,600 feet in elevation, while in southern areas the species is almost exclusively found in habitats dominated by oaks (Zeiner et al. 1990a:334). Spotted owls nest in tree or snag cavities or in the broken tops of large trees, with nests typically located 30 to 180 feet above the ground (Gutiérrez et al. 2020; Zeiner et al. 1990a:334). The breeding season lasts from mid-February through mid-September, with peak egg-laying in mid-April (United States Fish and Wildlife Service 2022:8).

Sierra Pacific Industries (SPI) conducts annual surveys for California spotted owl in the vicinity of Tiger Creek Regulator Reservoir. Although the survey area did not include the Dam area or Doakes Ridge staging and spoils site in 2021, SPI conducted surveys in these areas in prior years, and no California spotted owls were detected. In 2022, SPI included the Dam area and Doakes Ridge staging and spoils site in their annual survey. No California spotted owl activity centers were found in the Dam area or at Doakes Ridge. Five California spotted owl activity centers were mapped; one each to the northwest, northeast, southwest, and two to the southeast of the Dam area/Doakes Ridge (Wagner pers comm.). These activity centers range from approximately 0.3 to 1.8 miles from the Dam area/Doakes Ridge. Based on these surveys, there are no California spotted owl territories or nests in the Dam area/Doakes Ridge due to the proximity of the surrounding activity centers. In addition, neither area provides high quality nesting habitat for California spotted owl, although owls could forage in either location.

Fringed Myotis, Long-Legged Myotis, Hoary Bat, Silver-Haired Bat, and Townsend's Big-eared Bat

Fringed myotis (*Myotis thysanodes*) is considered a high priority species in California by the Western Bat Working Group (2017a). Fringed myotis occurs throughout much of California from coastal areas to 9,350 feet in the Sierra Nevada, although it is most common at middle elevations (4,000–7,000 feet) (Brown and Pierson 1996; Western Bat Working Group 2005). Fringed myotis can be found in a wide range of habitats including desert scrub, mixed deciduous/conifer forest, and redwood and giant sequoia groves (Brown and Pierson 1996). Fringed myotis day and night roosts in mines, caves, crevices in buildings, bridges, tree hollows, and rock crevices (Brown and Pierson 1996; Western Bat Working Group 2005). Maternal colonies range from 10 to 2,000 individuals but large colonies are extremely rare (Western Bat Working Group 2005).

Large trees and snags at the Dam area and Doakes Ridge staging and spoils site may provide suitable roosting habitat for fringed myotis. There is one record for an occurrence of fringed myotis approximately eight miles northwest of the Dam area (California Department of Fish and Wildlife 2023a).

Long-legged myotis (*Myotis volans*) is considered a high priority species in California by the Western Bat Working Group (2017a). Long-legged myotis occurs throughout California primarily in coniferous forests but is also found seasonally in riparian and desert habitats (Western Bat Working Group 2017b). Day roosts include hollow trees, abandoned buildings, mines, rock crevices, and beneath exfoliating bark. Caves and mines are used for hibernation and may be used for night roosting (Brown and Pierson 1996; Western Bat Working Group 2017b). Maternity colonies consist of 200 to 500 individuals (Brown and Pierson 1996).

Trees at the Dam area and Doakes Ridge staging and spoils site may provide suitable roosting habitat for long-legged myotis. There is one record for an occurrence of long-legged myotis that is approximately 11 miles northwest of the Dam area/Doakes Ridge (California Department of Fish and Wildlife 2023a).

Hoary bat (*Lasiurus cinereus*) is considered a species of moderate concern by the Western Bat Working Group (California Department of Fish and Wildlife 2023b, Western Bat Working Group 2017a). Hoary bats occur throughout California but are thought to have a patchy distribution in the southeastern deserts (Zeiner et al. 1990b:62). They occur primarily in forested habitats, including riparian forests, and may be found in park and garden settings in urban areas. Hoary bats are solitary bats that roost in the foliage of coniferous and deciduous trees (Brown and Pierson 1996) near the ends of branches (Western Bat Working Group 2017b). Woodlands with medium to large trees with dense foliage provide suitable maternity roost sites (Zeiner et al. 1990b:62). Mating occurs in the fall, and after delayed fertilization, young are born from May through July (Western Bat Working Group 2017b).

Trees at the Dam area and Doakes Ridge staging and spoils site may provide suitable roosting habitat for hoary bat. There is one record for an occurrence of hoary bat that is approximately 11 miles north of the Dam area/Doakes Ridge (California Department of Fish and Wildlife 2023a).

Silver-haired bat (*Lasionycteris noctivagans*) is considered a moderate priority species in California by the Western Bat Working Group (2017a). Silver-haired bats occur primarily in the northern portion of California and at higher elevations in the southern and coastal mountain ranges (Brown and Pierson 1996) but may occur anywhere in California during their spring and fall migrations. They are associated with coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats (Zeiner et al. 1990b:54). Silver-haired bats roost in trees almost exclusively in the summer, and maternity roosts typically are located in woodpecker hollows. Maternal colonies range from several to about 75 individuals (Brown and Pierson 1996).

Trees at the Dam area and Doakes Ridge staging and spoils site may provide suitable roosting habitat for silver-haired bat. There are two records for occurrences of silver-haired bat that are 3 miles southeast of the Cedar Mill staging area and 11 miles north of the Dam area/Doakes Ridge (California Department of Fish and Wildlife 2032a).

Townsend’s big-eared bat (*Corynorhinus townsendii*) is a California species of special concern (California Department of Fish and Wildlife 2023b) and is considered a species of high concern by the Western Bat Working Group (2017a). The geographic range of Townsend’s big eared bat extends throughout California except for the highest elevations in the Sierra Nevada range (California Department of Fish and Wildlife 2016:14; Szewczak et al. 2018:7, 15). The habitat for this species generally includes inland deserts; cool, moist coastal redwood forests; oak woodlands of the Coast Range and Sierra Nevada foothills; and lower to mid-elevation mixed coniferous-deciduous forests (California Department of Fish and Wildlife 2016:22). Townsend's big-eared bat roosts primarily in abandoned mines and natural caves, but also roosts in human-made structures and hollow trees (Pierson and Rainey 1998:3; California Department of Fish and Wildlife 2016:22–23; Szewczak et al. 2018:12). The species typically forages in forested habitat, in oak canopies, and along heavily vegetated stream corridors and habitat edges (California Department of Fish and Wildlife 2016:23–24; California Department of Fish and Game 2000). Townsend's big-eared bat forms maternity colonies that typically range from a few dozen to several hundred individuals, although colonies of over 1,000 have been documented. Maternity colonies form between March and June and females give birth to a single pup between May and July. Nursery colonies typically begin to disperse in August when the pups are weaned, and the colonies completely disband in September and October (California Department of Fish and Wildlife 2016).

Hollow trees at the Dam area and Doakes Ridge staging and spoils site may provide suitable roosting habitat for Townsend's big-eared bat. There is one record for an occurrence of Townsend's big-eared bat approximately six miles southwest of the Cedar Mill staging area (California Department of Fish and Wildlife 2032a).

3.5.4.5 Migratory Birds

Non-special-status migratory birds could nest in trees, shrubs, or ground vegetation in and adjacent to the Area of Analysis. All land cover types in the Area of Analysis except developed/disturbed could support nesting birds. The breeding season for most birds is generally from February 15 to August 31. The occupied nests and eggs of migratory birds are protected by federal and state laws, including the Migratory Bird Treaty Act and California Fish and Game Code sections 3503 and 3503.5. USFWS is responsible for overseeing compliance with the Migratory Bird Treaty Act, and CDFW is responsible for overseeing compliance with the California Fish and Game Code and making recommendations on nesting bird protection.

3.5.4.6 Invasive Plant Species

Invasive plant species are species designated as federal noxious weeds by the United States Department of Agriculture, species listed by the California Department of Food and Agriculture, and invasive plants identified by the California Invasive Plant Council. Invasive plants displace native species, change ecosystem processes, alter plant community structure, and reduce wildlife habitat quality. The invasive species observed during all botanical surveys (as described in Section 3.5.3.2 *Field Surveys*) are identified on the plant list in Appendix C, *Plants and Animals Observed in the Tiger Creek Regulator Dam Spillway Replacement Project Area of Analysis* (Table C-1). All of these species have a California Invasive Plant Council rating, ranging from Watch (species have been assessed as posing a high risk of becoming invasive in the future in California) to High (species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically (California Invasive Plant Council 2023). Some of these species also have a California Department of Food and Agriculture rating (California Department of Agriculture 2021). No plant species designated as federal noxious weeds have been identified in the Project Area (United States Department of Agriculture 2010).

The Cedar Mill staging area supports ruderal annual grassland, much of which is dominated by a dense cover of invasive plant species, such as invasive annual grasses, yellow star thistle, French broom (*Genista monspessulana*), Himalayan blackberry, and tamarisk (*Tamarix* sp.). While invasive species occur in other parts of the Project Area (e.g., the Dam area and Doakes Ridge staging and spoils site), they are not the dominant species and co-occur with native species and non-invasive, non-native species.

3.5.5 Regulatory Setting

3.5.5.1 Federal

The following federal regulations related to biological resources may apply to the Proposed Project.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) was enacted to address concerns about environmental quality. NEPA acts to ensure that federal agencies evaluate the potential environmental effects of proposed programs, projects, and actions before decisions are made to implement them, inform the public of federal agency proposed activities that have the potential to significantly affect environmental quality, and encourage and facilitate public involvement in the decision-making process.

Federal Endangered Species Act

The federal ESA of 1973 and subsequent amendments provide for the conservation of listed endangered or threatened species or candidates for listing and the ecosystems on which they depend. USFWS has jurisdiction over federally listed plants, wildlife, and resident fish. NMFS has jurisdiction over federally listed anadromous fish and marine fish and mammals.

Section 7 of the ESA applies to actions that are conducted, permitted, or funded by a federal agency. Under ESA section 7, the lead federal agency conducting, funding, or permitting an action must consult with USFWS or NMFS to ensure that a proposed action would not jeopardize the continued existence of an endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed action may affect a listed species or designated critical habitat, the lead agency is required to prepare a BA evaluating the nature and severity of the expected effect. In response, USFWS or NMFS issues a biological opinion (BO), with one of the following determinations about the proposed action:

- May jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding); or
- Will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

The BO issued by USFWS or NMFS may stipulate mandatory reasonable and prudent measures and terms and conditions. If it is determined the Proposed Project would not jeopardize the continued existence of a listed species, USFWS or NMFS would issue an incidental take statement to authorize the proposed activity.

Clean Water Act

The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The CWA empowers USEPA to set national water quality standards and effluent limitations and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. The following sections provide additional details on specific sections of the CWA.

Permits for Fill Placement in Waters and Wetlands (Section 404)

CWA section 404 regulates the discharge of dredged and fill materials into waters of the United States, which include any or all of the following:

- The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide (33 CFR 328.3(a)(1));
- Tributaries (33 CFR 328.3(a)(2));
- Lakes and ponds, and impoundments of jurisdictional waters (33 CFR 328.3(a)(3)); and
- Adjacent wetlands (33 CFR 328.3(a)(4)).

Applicants must obtain a permit from USACE for all discharges of dredged or fill material into waters of the United States, including adjacent wetlands, before proceeding with a proposed activity. USACE may issue either an individual permit evaluated on a case-by-case basis, or a general permit evaluated at a program level for a series of related activities. General permits are preauthorized and are issued to cover multiple instances of similar activities expected to cause only minimal adverse environmental effects. The nationwide permits are a type of general permit issued to cover particular fill activities. Each nationwide permit specifies conditions that must be met for the nationwide permit to apply to a particular project.

Compliance with CWA section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general permit until the requirements of NEPA, ESA, and the NHPA have been met. In addition, USACE cannot issue or verify any permit until a water quality certification, or a waiver of certification has been issued pursuant to CWA section 401.

Permits for Stormwater Discharge (Section 402)

CWA section 402 regulates construction-related stormwater discharges to surface waters through the NPDES program, which is administered by USEPA. In California, the State Water Board is authorized by USEPA to oversee the NPDES program through the Regional Water Boards. The Project Area is located within the jurisdiction of the Central Valley Regional Water Board.

NPDES permits are required for projects that disturb more than one acre of land. The NPDES permitting process requires the applicant to file a public notice of intent to discharge stormwater, and to prepare and implement a SWPPP. The SWPPP includes a site map and a description of proposed construction activities. In addition, it describes the BMPs that will prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

Water Quality Certification (Section 401)

Under CWA section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate.

Executive Order 11990: Protection of Wetlands

Executive Order (EO) 11990, signed May 24, 1977, requires federal agencies to prepare wetland assessments for proposed actions located in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no practicable alternative is available, and the proposed action includes all practicable measures to minimize harm to wetlands.

Executive Order 13112: Prevention and Control of Invasive Species

EO 13112, signed February 3, 1999, directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. This EO established the National Invasive Species Council, which is composed of federal agencies and departments, and a supporting Invasive Species Advisory Committee composed of state, local, and private entities. In 2016, the National Invasive Species Council released an updated national invasive species management plan that recommends objectives and measures to implement the EO and prevent the introduction and spread of invasive species (National Invasive Species Council 2016). The EO requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential effects, and measures to prevent or eradicate them.

3.5.5.2 State

The following state regulations related to biological resources are relevant to the Proposed Project.

California Environmental Quality Act

CEQA (Public Resource Code 21000 et. seq) is the regulatory framework by which California public agencies identify and mitigate significant environmental effects. A project normally has a significant environmental effect on biological resources if it substantially affects a rare or endangered species or the habitat of that species; substantially interferes with the movement of resident or migratory fish or wildlife; or substantially diminishes habitat for fish, wildlife, or plants. The State CEQA Guidelines define rare, threatened, and endangered species as those listed under ESA and CESA and any other species that meet the criteria of the resource agencies or local agencies (e.g., CDFW-designated species of special concern). The guidelines state that the lead agency preparing an environmental impact report must consult with and receive written findings from CDFW concerning project effects on species listed as endangered or threatened. The effects of a proposed project on these resources are important in determining whether the project has significant environmental effects under CEQA.

California Endangered Species Act

CESA (California Fish and Game Code 2050–2098) prohibits the take of listed endangered and threatened species. Take is defined as to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. CDFW administers the act and authorizes take through section 2081 agreements (except for species designated as fully protected).

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (California Fish and Game Code 1900–1913) prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the plant protection act, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the act are not protected under CESA but rather under CEQA.

Porter-Cologne Water Quality Control Act

The California Water Code addresses the full range of water issues in the state and includes Division 7, known as the Porter-Cologne Water Quality Control Act (California Water Code sections 13000–16104). Section 13260 requires “any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the State to file a report of discharge (an application for waste discharge requirements)" with the appropriate Regional Water Board. Under this act, each of the nine Regional Water Boards must prepare and periodically update water quality control basin plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution. Projects that affect waters of the State must meet the waste discharge requirements of the applicable Regional Water Board.

Section 13050 of the Porter-Cologne Water Quality Control Act authorizes the State Water Board and the relevant Regional Water Board to regulate biological pollutants. The California Water Code generally regulates more substances contained in discharges and defines discharges to receiving waters more broadly than does the CWA (State Water Resources Control Board 2021).

3.5.5.3 Local

Amador County General Plan

Amador County General Plan (Amador County 2016) Open Space Element includes goals and policies to address sensitive biological resources, including wildlife habitat, aquatic resources, and special-status species:

- **Goal OS-3:** Protect wildlife habitats, including sensitive environments and aquatic habitats, consistent with State and federal law;
  - **Policy OS-3.2:** Encourage the conservation of corridors for wildlife movement, particularly in oak woodland areas and along rivers and streams;
  - **Policy OS-3.5:** Protect aquatic habitats from the effects of erosion, siltation, and alteration;
  - **Policy OS-3.6:** Encourage the use of appropriate native species for reclamation and revegetation components of development projects. Restrict the introduction of invasive exotic species. The County will amend Chapter 15.40 of the County Code (governing grading and erosion control) to include a section addressing the requirement to limit the potential for introduction and spread of invasive species during soil disturbance and construction activities;
- **Goal OS-4:** Protect special status species, including threatened and endangered species, consistent with State and federal law; and
  - **Policy OS-4.1:** Ensure that new development complies with State and federal laws concerning special status species preservation.

3.5.6 Environmental Effects

The impact analysis for biological resources was conducted by evaluating the potential changes to existing biological communities and the effects on special-status species that could result from Proposed Project implementation. The following activities could cause potential direct and indirect impacts of varying degrees on sensitive biological resources present in and near the Area of Analysis:

- Temporarily lowering the water surface elevation of the Reservoir during the planned outages and cofferdam installation upstream of the proposed spillway structure;
- Construction of the spillway structure (crest structure, spillway chute and flip bucket, and plunge pool), which would require excavation and concrete work;
- Operation of a mobile concrete batch plant at the Cedar Mill staging area;
- Permanent vegetation removal and grading for Proposed Project facilities and surrounding areas, the permanent access road, and spoils storage at Doakes Ridge staging and spoils site;
- Temporary vegetation removal for the temporary access road and temporary trails;
- Minor grading and brushing (trimming of encroaching vegetation) within the existing road limits of Spur 10;
- Installation and removal of three temporary bridges across Tiger Creek and one temporary bridge across the existing plunge pool;
- Placement of approximately 500 CY of rock slope protection at the downstream end of the plunge pool to repair previous bank erosion;
- Installation of a log boom;
- Staging of equipment and material for construction;
- Movement of construction equipment within the construction area and between the construction area and staging and spoils disposal areas;
- Placement of excavated material at the Doakes Ridge staging and spoils site;
- Construction of the concrete-lined transition in the streambed of Tiger Creek for the new plunge pool;
- Installing a temporary bypass pipe system to divert flow in Tiger Creek to downstream of the new plunge pool location;
- Additional lighting across the crest of the Dam to the turnaround and parking area and to the LLO; and

- Site cleanup and demobilization.

The following assumptions were used in assessing the Proposed Project's potential impacts on biological resources:

- All construction, staging (including vehicle parking and material and equipment offloading), spoils sites, and access areas would be restricted to the Project Area depicted in Figure 2-1, *Project Area*;
- Use of Tiger Creek Road, Salt Springs Road (Spur 1), Spur 7, and the boat launch road for access would not affect adjacent vegetation communities beyond pre-Proposed Project levels; and
- Construction BMPs described in Section 2.6 *Best Management Practices*, would be implemented to ensure that indirect effects on habitats outside of the Project Area are avoided or minimized.

Potential impacts on land cover types and associated special-status species habitats were determined by overlaying the Proposed Project features onto an aerial photograph of the land cover types in the Project Area. Potential impacts of the Proposed Project related to biological resources are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section IV, *Biological Resources*, asks whether the Proposed Project would result in any of the following conditions.

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 following discussion provides supporting information for the determination that the potential direct and indirect impacts on special-status species would be less than significant with mitigation incorporated.

Effects on Special-Status Plants

No special-status plants were observed during the 2022 or 2023 botanical surveys (as described in Section 3.5.3.2 *Field Surveys*, and in Section 3.5.4.4 *Special-Status Species*, under *Special-Status Plants*), which were conducted during the appropriate blooming periods for the special-status plants with potential to occur in the Area of Analysis. Therefore, no potential impact on special-status plants is anticipated due to the Proposed Project.

Effects on Special-Status Fish

Construction of the Proposed Project would not result in any potential effects on special-status fish, because no special-status fish are known to occur in the Area of Analysis (National Marine Fisheries Service 2016; California Department of Fish and Wildlife 2023). Furthermore, construction of the Proposed Project would be subject to a construction-related stormwater permit and dewatering requirements of the federal CWA and NPDES program. PG&E would obtain required permits before any ground-disturbing construction activity occurs and implement all applicable construction site BMPs. Implementation of BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans* (including compliance with the NPDES stormwater permit program and preparation and implementation of a SWPPP), BMP-6: *Implement Fugitive Dust Abatement Measures* (described in Chapter 2, *Project Description*), and Mitigation Measure WQ-MM-2: *Develop and Implement a Water Quality Monitoring and Adaptive Management Plan*, will minimize the introduction of construction-related contaminants and mobilization of sediment into waters in and adjacent to the Project Area. With adherence to BMP-1, BMP-6, and WQ-MM-2, the potential for degrading water quality in Tiger Creek downstream of the Proposed Project would be avoided and minimized. In addition, the distance separating the Dam area construction activities and the North Fork of the Mokelumne River (more than three miles), in combination with the diluting effect of the substantially greater flows in the North Fork of the Mokelumne River, would further make the potential for water quality impacts on fish and fish habitat in the North Fork of the Mokelumne River from Proposed Project construction unlikely. Therefore, no potential impacts on special-status fish would occur as a result of the Proposed Project.

Effects on Special-Status Wildlife

Potential Disturbance, Injury, or Mortality of Western Pond Turtle

Installation and operation of the mobile batch plant at the Cedar Mill staging area would be in a highly disturbed and actively used area that is more than 330 feet from any ponds and would not affect western pond turtle. Equipment or material staging in natural/less disturbed areas within 330 feet of ponds at the Cedar Mill staging area could result in disturbance or loss of nest sites (May to August) or injury or mortality of hibernating turtles (October through February), if present in these areas. Construction noise or activity could disturb turtles or cause them to avoid construction and staging areas. To avoid and minimize potential injury or mortality of western pond turtle, Mitigation Measures BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements* and BIO-MM-2: *Protect Suitable Western Pond Turtle Upland Habitat at Cedar Mill Staging*

Area would be implemented. With these mitigation measures, potential impacts on western pond turtle would be less than significant.

Mitigation Measure BIO-MM-1: Conduct Worker Environmental Awareness Training and Implement General Requirements

PG&E shall retain a qualified biologist to develop and conduct a mandatory worker environmental awareness training about special-status species and other sensitive resources that could be encountered during Proposed Project work (e.g., sensitive natural communities, western pond turtle, special-status bats). In addition, construction employees shall be educated about the importance of controlling and preventing the spread of invasive plant infestations.

The biologist shall prepare a handout that contains information (including photographs) about how to identify pertinent species, their habitat requirements, and the avoidance and minimization measures to be implemented. All personnel shall receive worker environmental awareness training before conducting Proposed Project work and new personnel shall receive the training as they are brought onto the Proposed Project. Proof of personnel environmental training attendance shall be kept on file by PG&E. Each worker shall be provided with a copy of the handout and at least one copy shall remain onsite throughout the duration of the Proposed Project with the construction foreman.

General restrictions and guidelines that shall be in the training and followed by Proposed Project personnel are listed below. The Proposed Project foreman shall be responsible for ensuring that crew members adhere to these guidelines and restrictions:

- Before construction begins, the construction contractor shall work with the Proposed Project engineer and a biologist to identify sensitive locations to be protected with orange construction fencing or other high visibility materials (e.g., stanchions or pilons and flagging) and shall place stakes to indicate these locations. Sensitive locations shall include western pond turtle habitat and willow riparian habitat and ditches at the Cedar Mill staging area, seasonal and emergent wetlands, ephemeral drainages, and perennial drainages. Fencing shall be installed with a one-foot gap between the ground and the bottom of the fence so that small animals do not become trapped in the fence. The fencing or other high visibility materials shall be installed before construction activities are initiated, maintained throughout the construction period, and removed when construction is completed. The protected areas shall be designated as environmentally sensitive areas and clearly identified on the construction plans or resource protection exhibit, which shall be prepared after the site review with the contractor and prior to construction;

- Work crews shall be restricted to designated and clearly defined work areas and access routes. Staging of equipment and material sites shall be restricted to designated areas;
- A biological monitor shall make periodic visits to the Project Area to ensure that environmentally sensitive areas are being protected, provide environmental awareness training to new crew members, and determine if general restrictions and guidelines are being followed;
- Prior to mobilization to the project site, all equipment shall be pressure washed clean to ensure noxious weeds are not imported into or out of the project area. Equipment shall be considered clean when there is no visible soil or plant parts.
- At the end of each workday, an escape ramp shall be placed at each end of any open excavation to allow wildlife that may become trapped to climb out overnight. The ramp may be constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees. The biological monitor or designated construction personnel shall check excavations, open pipes, and other areas prior to filling, moving, or disturbing to ensure that animals are not trapped or harmed by construction activities;
- Vehicles shall not exceed a speed of 10 miles per hour when traveling off paved roads;
- Vehicle access across streams and wetlands shall be limited to existing roads and designated crossings;
- Laydown and staging areas shall be located in previously developed or disturbed areas;
- Any erosion control materials required for the project shall be rice straw or come from certified weed-free sources, as practicable (i.e., certified weed free straw wattles, mulch, etc);
- Maintain gravel and soil spoil piles free of invasive weeds;
- All trash shall be disposed of and removed from the work area daily. Workers shall not feed or otherwise attract fish or wildlife to the work area;
- No pets or firearms shall be allowed in the Project Area;

- Workers shall look underneath vehicles and other heavy equipment for wildlife before moving vehicles or equipment to ensure that no animals are crushed;
- No wildlife species shall be handled and/or removed from the site by anyone except qualified biologists. Wildlife found in work areas shall be allowed to move out of the area on their own. Contact the PG&E biologist if the animal does not move or if further guidance is needed; and
- Any worker who inadvertently injures or kills an animal or finds one dead, injured, or entrapped shall immediately report the incident to the Proposed Project foreman, who shall immediately report the incident to the PG&E biologist. Questions about wetlands, protected species, or mitigation measures should also be directed to the PG&E biologist.

Mitigation Measure BIO-MM-2: Protect Suitable Western Pond Turtle Upland Habitat at the Cedar Mill Staging Area

To avoid potential injury or mortality of western pond turtles, PG&E shall ensure that the following steps are taken:

- Suitable upland habitat within 330 feet of ponds at the Cedar Mill staging area (including all ponds located outside the Proposed Project's Area of Analysis as shown in Figure 3.5-1) shall be staked and flagged for avoidance, in accordance with Mitigation Measure BIO-MM-1;and
- If one or more western pond turtles are found in any work area during construction and cannot or do not move out of the work area on their own, a qualified biologist shall remove and relocate the turtle to appropriate habitat outside and away from the work area. Relocation of a western pond turtle requires written authorization from CDFW. Prior to the start of Proposed Project construction, the PG&E biologist shall obtain written approval from CDFW to relocate western pond turtles. The PG&E biologist shall report their activities to the State Water Board and CDFW within one day after relocating any turtle.

Potential Disturbance of Bald Eagle

There are no records for bald eagle nests in the vicinity of Tiger Creek Regulator Reservoir; however, a bald eagle was observed during the August 17, 2022, wildlife survey. Although there is a low potential for bald eagles to nest at the Reservoir, they could hunt for fish in the lake and perch from trees in and near the Project Area. Tree removal in the Dam area would reduce the number of perching trees, particularly along the west shore of the Reservoir. Ample trees would remain on the east, north, and remainder of the west shore for bald eagles to use for perching. Construction activities and noise could disturb bald eagles if they are foraging or are perched near the lake when these activities occur. Bald eagles may leave Tiger Creek Regulator Reservoir and fly to another lake to forage. While this would result in an eagle expending additional energy to travel to an alternative feeding area, this disturbance would not result in harm to the eagle. Therefore, this potential impact would be less than significant.

Loss of Habitat for and Potential Disturbance of Northern Goshawk and California Spotted Owl

Based on a habitat assessment during surveys for northern goshawk (as described in Section 3.5.3.2 *Field Surveys*, and in Section 3.5.4.4 *Special-Status Species*, under *Special-Status Animals*), low quality nesting habitat is present for northern goshawk in the Dam area and at Doakes Ridge staging and spoils site. No northern goshawks were detected during surveys conducted in July and August 2022. Therefore, northern goshawk is not anticipated to nest in or within 0.25 mile of the Project Area. On the basis of negative survey results (i.e., the species was not detected) from California spotted owl surveys conducted by SPI in 2022 in the Project Area (Sierra Pacific Industries 2022), prior surveys in the Project Area, and prior annual surveys in the surrounding area (Wagner pers comm.), there are no California spotted owl territories or nests in the Dam area/Doakes Ridge. There is no suitable habitat for California spotted owl at the Cedar Mill staging area. Therefore, California spotted owl is not anticipated to nest in the Project Area.

The Proposed Project would result in the permanent removal of approximately 13.53 acres of Sierran mixed conifer forest, temporary loss of 0.55 acre of Sierran mixed conifer (from the temporary access road), and temporary disturbance of 22.03 acres of Sierran mixed conifer forest. A total of 718 trees would be permanently removed from the Dam area and the Doakes Ridge staging and spoils site and 29 trees would be removed from the footprint of the temporary access road alignment. As discussed previously and in Section 3.5.4 *Existing Conditions*, the Sierran mixed conifer forest does not support nesting northern goshawk or California spotted owls. As such, the permanent and temporary removal of 747 trees would not result in the removal of occupied nesting habitat or the disturbance of nesting northern goshawk or California spotted owl and would not have an adverse effect on these species.

Sierran mixed conifer forest in the Project Area provides suitable foraging habitat for northern goshawk and California spotted owl. Northern goshawks have large home ranges that can extend up to 37 miles per day (Blakey et al. 2020:396). Therefore, it is possible that northern goshawks could forage within the Project Area. For habitat analysis, a California spotted owl territory is commonly represented as a 1.5-mile radius around a nest site or half the average nearest neighbor distance of owls within a population (United States Department of Agriculture Forest Service 2017:294). Three of the five California spotted owl activity centers are within approximately 0.3 to 0.9 mile from the Dam area or Doakes Ridge (the two others are approximately 1.7 and 1.8 miles away). Therefore, California spotted owls from these activity centers could forage in the Project Area. As such, noise and increased human presence in the Dam area and Doakes Ridge staging and spoils site during construction could disturb foraging northern goshawks and California spotted owls or discourage them from foraging in these areas. Due to the ample amount of foraging habitat in the surrounding area, this is not anticipated to have a substantial adverse effect on the foraging activities of these species.

In the Sierra Nevada, California spotted owls prefer edge habitats for foraging (United States Department of Agriculture Forest Service 2017:55). The break in the conifer forest that would be created by the permanent access road would create edge habitat that may be more conducive to spotted owl foraging. The Sierran mixed conifer forest that would be temporarily removed (0.55 acre) would be allowed to grow back; however, it would be many years before the mature forest is replaced. While the Proposed Project would reduce the amount of available foraging habitat for northern goshawk and California spotted owl, there is a substantial amount of Sierran mixed conifer foraging habitat for several miles surrounding the Project Area that would continue to provide foraging habitat for these species. Therefore, the loss of foraging habitat would not have a substantial adverse effect on northern goshawk and California spotted owl. The potential impacts of the Proposed Project on northern goshawk and California spotted owl would be less than significant.

Potential Disturbance of Fringed Myotis, Long-Legged Myotis, Hoary Bat, Silver-Haired Bat, and Townsend's Big-eared Bat

Of the 747 trees to be removed at the Dam area and Doakes Ridge staging and spoils site, 237 are 24 inches in diameter at a height of 4.5 feet above the ground surface (dbh) or larger. These larger trees have a greater potential to have tree hollows that could support roosting bats; however, any trees with exfoliating bark or tree hollows (i.e., woodpecker holes) could be used for roosting by fringed myotis, long-legged myotis, or silver–haired bat. Hoary bats could roost in the foliage of trees and Townsend's big-eared bat would likely occur only in hollow trees. Removal of trees occupied by roosting bats could result in injury or mortality of bats. This could constitute a significant impact if the local population of the affected bat species was affected. Other construction activities would not prevent or interfere with other bat activities (i.e., drinking and foraging) because these activities occur at night when there would be no construction. To avoid and minimize potential injury or mortality of roosting bats, Mitigation Measure BIO-MM-3 would be implemented. With this mitigation measure, potential impacts on roosting bats would be less than significant.

Mitigation Measure BIO-MM-3: Evaluate Trees for Removal and Implement Protective Measures to Avoid or Minimize Injury or Mortality of Special-status Roosting Bats

Qualified biologists (i.e., biologists with experience with tree roosting habitats and life histories of special-status bats that may occur in the Project Area) shall examine trees for suitable special-status bat roosting habitat (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags, medium to large deciduous trees that receive at least six hours of daily sun exposure and a nearby water source less than a quarter-mile away) before tree removal. The biologists shall categorize trees for their suitability to support roosting special-status bats (i.e., high, moderate, and low suitability). Trees providing high or moderate bat roosting habitat shall be marked with flagging and identified as habitat. If possible, trees shall be removed between September 1 and October 15 to avoid the bat maternity and hibernation periods. Trees with low-quality or no bat roosting habitat can be removed without restrictions.

To avoid or minimize the potential for injury or mortality of tree roosting special-status bats, removal of trees with moderate or high quality bat roosting habitat shall be performed by implementing the following measures:

1. Trees providing high or moderate bat roosting habitat should be removed under the warmest possible conditions. The day must be warm (warmer than average, if possible) and removal should begin in the late morning and take place during the warmest parts of the day.
2. At any tree larger than 12 inches dbh that provides high or moderate bat roosting habitat, create noise and disturbance at the tree base such that roosting bats would experience vibration. Disturbance should be nearly continuous for several minutes. Noise and vibrations should be created by performing the following steps:
    a. Running the chain saw and making shallow cuts or pie cuts in the trunk.
    b. Striking the tree base with fallen limbs, tools such as hammers, or heavy equipment such as the arm of an excavator.
    c. Disturbance should be near-continuous for two minutes, then another five minutes should pass with no disturbance to allow bats time to evacuate

the tree. Create disturbance for another minute, then wait another minute before felling the tree.

d. When conspicuous bole cavities are observed, the tree should be climbed (if safe to do so) and disturbance generated in the vicinity of the cavity by banging on the trunk. This step should be followed by the procedure outlined in Steps a through c above.

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

Less than Significant with Mitigation Incorporated. The following discussion provides supporting information for the determination that the potential impacts on riparian habitat or other sensitive natural community would be less than significant with mitigation incorporated.

Construction Effects on Riparian Habitat

Construction of the Proposed Project could affect willow riparian habitat at the Cedar Mill staging area. Installation and operation of the mobile batch plant would occur in an area away from the willow riparian habitat and would have no potential direct or indirect impacts on riparian habitat. However, the remainder of the Cedar Mill staging area could be used for staging purposes, and the willow riparian habitat along ditch D-4 has not been excluded from potential staging use. Staging activities near or in ditch D-4 could directly remove trees in the willow riparian habitat. However, only 10 acres of the available 40 acres at the Cedar Mill staging area are proposed to be used for staging, and removal of the willow riparian vegetation should be avoidable. Impacts on willow riparian habitat could also occur if staging disrupts flow in the portion of ditch D-4 that supports the riparian vegetation. To avoid and minimize potential impacts on the willow riparian habitat, Mitigation Measure BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements* would be implemented. With this mitigation measure, potential impacts on willow riparian habitat would be less than significant.

Potential impacts on other sensitive natural communities are discussed under checklist item *c* for wetlands and non-wetland waters.

Potential Introduction and Spread of Invasive Plant Species

Proposed Project construction has the potential to introduce and spread invasive plant species within and outside of the Project Area. Of particular concern would be the potential introduction of invasive plant species into natural areas near the Dam area and Doakes Ridge staging and spoils site and spread of invasive plant species either offsite or to other portions of the Project Area from the Cedar Mill staging area. Ruderal annual grassland at the Cedar Mill staging area supports areas of dense invasive plant species cover. This would be considered a significant impact. Although PG&E will implement BMP-5: *Implement Measures to Minimize the Spread/Introduction of Noxious Weeds*, the potential spread of invasive plants would be a potentially significant impact. Implementation of Mitigation Measure BIO-MM-4: *Minimize the Introduction and Spread of Invasive Plants* would reduce this potential impact to less than significant.

Mitigation Measure BIO-MM-4: Minimize the Introduction and Spread of Invasive Plants

PG&E or its contractor shall take caution to limit the introduction of new invasive plants and the spread of invasive plants previously documented in the Project Area. Accordingly, the following measures shall be implemented during construction:

- Prior to use of the Cedar Mill staging area and construction of the batch plant, vegetated areas proposed for use shall be graded and topsoil shall be removed to minimize the presence and spread of invasive plant material. Existing graded areas at the Cedar Mill staging area shall be prioritized for use to minimize the area needing to be graded;
- Topsoil containing invasive plant material shall be placed in plastic garbage bags or under tarps with no viable plant parts (seed or parts that can sprout) protruding and shall be disposed of at an appropriate offsite disposal facility to avoid the spread of invasive plants into natural areas;
- Tools, equipment, and vehicles used within vegetated areas at the Cedar Mill staging area shall be cleaned before moving to the Dam area or Doakes Ridge staging and spoils site. Approved methods for cleaning without water include using bristle brushes, brooms, scraper, vacuum, high pressure air device, and hand removal. When feasible, clean equipment and vehicles in graded areas with low or no vegetation; and
- Within the Dam area and Doakes Ridge staging and spoils site, minimize surface disturbance to the greatest extent feasible to complete the work.

c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.)

and non-wetland waters through direct removal, filling, hydrological interruption, or other means?

Less than Significant with Mitigation Incorporated. Construction of the Proposed Project could result in potential direct impacts on waters of the United States, including wetlands and non-wetland waters. These features are also considered waters of the State. As the aquatic resources delineation has not been submitted to or verified by USACE as of August 2023, the acreages of potential impacts in this discussion should be considered preliminary. The CWA section 404 permit application (Pre-Construction Notification) and the aquatic resources delineation will be submitted to USACE, and the exact acreages of potential impacts associated with the placement of fill material into waters of the United States will be provided in the final applications or permits.

Potential impacts were considered permanent if the Proposed Project would result in the placement of permanent fill in waters of the United States and waters of the State. Proposed Project construction would have up to 0.14 acre of potential permanent impact on waters of the United States and waters of the State. The Proposed Project would result in potential permanent impacts on approximately 0.03 acre of ephemeral drainage from placement of rock slope protection and existing spillway abandonment; 0.04 acre of perennial drainage from placement of riprap and construction of the proposed plunge pool; and 0.07 acre in the Reservoir from construction of the crest structure. Potential permanent impacts on waters of the United States and waters of the State would be significant.

Potential impacts were considered temporary if any fill would be removed following completion of construction and temporarily disturbed portions of non-wetland waters would be restored. Construction of the Proposed Project could result in potential temporary impacts on waters of the United States and waters of the State. A total of 0.02 acre of temporary impact could result from construction of the temporary streamflow bypass pipe and temporary backflow prevention dam in Tiger Creek, and installation of the cofferdam in the Reservoir. Timber harvest activities downstream of the Dam could also cause temporary hydrological interruption in Tiger Creek and in the adjacent emergent wetlands. The temporary access road and bridges would be constructed above the OHWM of Tiger Creek to avoid placement of fill in the creek. The Proposed Project could result in the temporary placement of fill in and/or hydrological interruption of the seasonal wetland and ditches at the Cedar Mill staging area during construction. Use of the Cedar Mill staging area could directly or indirectly affect other ditches, including ditch D-3 and ditch D-4, which drain to Sutter Creek, and D-1, which does not appear to connect to any other drainage or stream. Ditch D-4 supports the willow riparian habitat previously discussed. Implementation of BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment*

Control Plans, Mitigation Measure WQ-MM-2: *Develop and Implement a Water Quality Monitoring and Adaptive Management Plan*, and Mitigation Measure BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements* will ensure avoidance of temporary impacts not associated with the construction of the temporary streamflow bypass pipe and backflow prevention dam in Tiger Creek and the cofferdam in the Reservoir.

Potential indirect impacts due to adverse effects on water quality, such as increased turbidity and chemical runoff, may also result from Proposed Project construction within the open water area of the Reservoir outside of the construction area and the portion of Tiger Creek downstream of the Proposed Project. Discharge from the plunge pool excavation dewatering system could affect water quality in Tiger Creek; however, as required in BMP-1, use of filters within the flow bypass system will prevent turbid water from entering the bypass system and affecting the downstream area of Tiger Creek. Potential indirect impacts would be less than significant.

No potential direct impacts on seasonal wetlands, ephemeral drainages, or the perennial drainage would occur from minor grading and trimming of encroaching vegetation along Spur 10. The Doakes Ridge staging and spoils site does not support wetlands or drainages, and there would be no potential impact at that location.

Temporary and permanent losses of wetlands and non-wetland waters would be potentially significant impacts on federally protected waters and waters of the State even with BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans*. Implementation of Mitigation Measure WQ-MM-2: *Develop and Implement a Water Quality Monitoring and Adaptive Management Plan*, Mitigation Measure BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements*, Mitigation Measure BIO-MM-5: *Avoid and Minimize Disturbance of Waters of the United States/Waters of the State*, and Mitigation Measure BIO-MM-6: *Compensate for the Temporary and Permanent Losses of Waters of the United States/Waters of the State* would reduce these potential impacts to less than significant.

Mitigation Measure BIO-MM-5: Avoid and Minimize Disturbance of Waters of the United States/Waters of the State

To the extent possible, PG&E shall avoid and minimize impacts on waters of the United States and waters of the State by implementing the following measures. These measures shall be incorporated into contract specifications and implemented by the construction contractor:

- Avoid temporary impacts to the maximum extent possible where construction activities can be excluded from wetlands and non-wetland waters;
- Avoid construction activities in saturated or ponded natural wetlands and drainages during the wet season (spring and winter) to the maximum extent possible;
- Stabilize streams/drainages immediately upon completion of construction activities. Non-wetland waters of the United States that were vegetated prior to construction shall be restored in a manner that encourages vegetation to re-establish to pre-Proposed Project condition and reduces the effects of erosion on the drainage system;
- Remove any debris or soils that are inadvertently deposited below the OHWM of the Reservoir or perennial drainage in a manner that minimizes disturbance of the bed and bank; and
- Complete all activities promptly to minimize their duration and resultant impacts.

Mitigation Measure BIO-MM-6: Compensate for the Temporary and Permanent Losses of Waters of the United States/Waters of the State

To compensate for temporary impacts on waters of the United States and waters of the State in Tiger Creek Regulator Reservoir and Tiger Creek, all temporary fill shall be removed and the Reservoir bed and creek bed shall be restored to pre-Proposed Project contours and conditions within 30 days following completion of construction activities.

To compensate for permanent loss of approximately 0.14 acre of waters of the United States and waters of the State in Tiger Creek Regulator Reservoir, Tiger Creek, and the existing plunge pool, PG&E shall pay into the National Fish and Wildlife Foundation Sacramento District In-lieu Fee Program to ensure no net loss of wetland functions and values. The compensation ratio shall be a minimum of 1:1 (one acre of habitat credit for every one acre of impact). The actual mitigation ratio and associated credit acreage may be modified based on CWA section 404 and section 401 permitting, which shall dictate the ultimate compensation for permanent impacts on waters of the United States and waters of the State.

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. The following discussion provides supporting information for the determination that the potential impacts on the movement of native resident or migratory fish or wildlife species, established native resident or migratory wildlife corridors, or native wildlife nursery sites would be less than significant with mitigation incorporated.

Potential Effects on Native Resident Fish Movement

Rainbow trout are the only native resident fish species known to occur in the Area of Analysis. The habitat requirements of juvenile and adult rainbow trout related to movement are generally defined by suitable water depth, water velocity, and cover, which are a function of stream flow, channel morphology, stream gradient, and various sources of cover (i.e., instream woody material, substrate, and vegetation) (Bjornn and Reiser 1991).

Habitat preferences of rainbow trout shift with changes in season, body size, and life stage; therefore, adult and juvenile rainbow trout require year-round access to a broad range of habitat types (Raleigh et al. 1984). Proposed Project activities (i.e., movement of personnel or equipment, noise, placement of rock slope protection) that affect fish behavior or that affect channel morphology and hydraulics can prevent or delay downstream, upstream, or lateral movements, thereby adversely affecting adult spawning and adult and juvenile foraging, and ultimately leading to reductions in the fish population.

Proposed Project components that could affect fish behavior or physical conditions that support movement in Tiger Creek and Tiger Creek Regulator Reservoir include installing three temporary bridges over Tiger Creek for the temporary access road, placing 250 CY of rock slope protection along each bank of the existing plunge pool, installing a temporary silt curtain along the downstream edge of the existing plunge pool during rock slope protection placement, temporarily diverting streamflow around the construction site for the new spillway, temporarily dewatering Tiger Creek immediately downstream of the Dam, installing a temporary cofferdam in the Reservoir, and temporarily lowering the water surface elevation of the Reservoir during the planned outages in 2025 and 2026.

As the temporary bridges would be designed to pass the expected maximum flow during construction, and would completely span the creek, thereby preserving the existing channel geometry and natural stream bottom, installation of three temporary bridges over Tiger Creek is not expected to result in measurable changes to existing channel depths, water velocity, and channel geometry in Tiger Creek at these proposed crossings. Therefore, no potentially significant impacts on fish movement in Tiger Creek are anticipated from installation of these three temporary bridge crossings.

Installation of the 500 CY of rock slope protection along the banks of the existing plunge pool could alter the local hydraulics of the plunge pool's outlet channel due to the flow constricting nature of the rock slope protection. This, in turn, could affect the ability of fish to move between Tiger Creek and the existing plunge pool if altered hydraulics caused water velocities and/or depths in the affected portion of the channel to exceed the swimming capabilities of rainbow trout. However, as described in Section 3.3 *Hydrology and Water Quality*, there would be ample room in the plunge pool to dissipate the energy of spillway flows and altered hydraulic and associated geomorphic processes are expected to be minimal due to placement of the rock slope protection. Furthermore, the potential for altered hydraulics and associated geomorphic processes from placement of the rock slope protection would be limited to the winter and spring during construction as the existing plunge pool would no longer receive spillway flows once the new spillway is constructed.

Installation of the temporary silt curtain or other sediment control measures such as clean gravel bags or sandbags, as required in Mitigation Measure WQ-MM-1, could also affect the ability of rainbow trout to move between Tiger Creek and the existing plunge pool as it would span the outlet channel of the existing plunge pool and create a barrier to fish. However, this would be a temporary impact as the silt curtain or other sediment control measures would be in place only while rock slope protection is being placed on the banks of the existing plunge pool and the number of fish that would be expected to be potentially affected by the silt curtain or other sediment control measures would be low given that the existing plunge pool is an off-channel pool (i.e., not on the main channel of Tiger Creek).

Lowering the plunge pool's water level by pumping water into water trucks, which could be implemented as a sediment control measure, as described in Mitigation Measure WQ-MM-1, or pumping water from the reservoir to fill water trucks, has the potential to entrain and kill fish if intakes to the pumping system were not screened. Fry and small juveniles would be particularly vulnerable to entrainment because of their smaller size and weaker swimming ability.

Installation of the stream diversion and subsequent dewatering of Tiger Creek to support construction of the new spillway chute, flip bucket, and plunge pool would temporarily prevent fish residing in Tiger Creek from moving upstream or downstream through the affected reach. The number of fish that would be expected to be affected is low given the proximity of the affected reach to the Dam. In addition, this segment of Tiger Creek does not provide any essential connectivity to upstream or downstream habitats given its proximity to the Dam, which already precludes fish movement in Tiger Creek. Damming of the M-76 weir with a plywood or steel sheet to facilitate dewatering of the construction site could interfere with the movement of any fish residing in the stream segment proposed for dewatering. Additionally, these fish would be stranded and would die if they are not relocated to a flowing section of Tiger Creek prior to construction-site dewatering. Interfering with the movement of rainbow trout that would result in mortality of individuals would be a potentially significant impact.

Movement of construction personnel and equipment, and general construction noise could affect the movement of adult and juvenile fish, although these effects would be incidental, limited to localized areas where the activity is occurring, and restricted to daylight hours only, thereby providing fish with extended periods of uninterrupted movement at night when construction activities are not occurring. Therefore, noise and disturbance associated with construction activities are not anticipated to substantially interfere with fish movement in Tiger Creek.

Installation of the cofferdam in Tiger Creek Regulator Reservoir and the temporary lowering of the Reservoir's water surface elevation would not be expected to impede movement of rainbow trout. The potential for fish to be trapped in the cofferdam would be avoided because the Reservoir's water surface would first be lowered and the cofferdam would be installed in the dry. Although drawing down the Reservoir could also affect the movement of fish between the Reservoir and Tiger Creek upstream of the Reservoir if the lower reservoir level exposed barriers to movement (e.g., vertical drops, critical riffles, shallow delta) in the Reservoir's inundation zone, no such features were observed in the Tiger Creek channel within the inundation zone of the Reservoir during the April 14, 2023, reconnaissance survey. In addition, rainbow trout, which are strong swimmers and leapers, typically can pass obstacles (e.g., bedrock or boulder steps) that appear to be barriers, provided that suitable conditions are present (Bjornn and Reiser 1991). If bedrock or boulder steps in Tiger Creek are exposed while the Reservoir is temporarily drawn down during construction, rainbow trout are expected to be able to navigate past these impediments.

Adult salmonids are adapted to high concentrations of suspended sediment that occur during normal storm and runoff events. However, adults have been reported to cease migration or avoid their natal streams under extremely turbid conditions (Bjornn and Reiser 1991). Proposed Project activities, including construction of temporary and permanent access roads, vegetation clearing, and other ground-disturbing activities, could lead to increases in sediment delivery to streams and elevated turbidity levels. As described above, construction of the Proposed Project would be subject to a construction-related stormwater permit and dewatering requirements of the federal CWA and NPDES program. PG&E would obtain the required permits before any ground-disturbing construction activity occurs and implement all applicable construction site BMPs. Implementation of BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans* (including compliance with the NPDES stormwater permit program and preparation and implementation of a SWPPP), BMP-6: *Implement Fugitive Dust Abatement Measures*, Mitigation Measure WQ-MM-1: *Implement Sediment Control Measures along Downstream Edge of Existing Plunge Pool prior to Rock Slope Protection Placement* and Mitigation Measure WQ-MM-2: *Develop and Implement a Water Quality Monitoring and Adaptive Management Plan*, will minimize the introduction of construction-related contaminants and mobilization of sediment into waters in and adjacent to the Proposed Project area. With adherence to BMP-1, BMP-6, and Mitigation Measures WQ-MM-1 and WQ-MM-2, the potential for degrading water quality, and therefore fish movement, in Tiger Creek would be avoided or minimized.

The Proposed Project would not reduce stream flows, including required minimum flows described in Section 3.3.3.5 *Federal Energy Regulatory Commission and U.S. Forest Service Operating Conditions*, relative to existing (pre-Proposed Project) conditions. Therefore, water depths and water velocities, and therefore fish passage conditions, in Tiger Creek downstream of the Dam would not be affected by the Proposed Project.

Based on the analysis above, the Proposed Project could entrain or substantially interfere with the movement of native resident fish. Implementation of Mitigation Measure BIO-MM-7: *Implement Flow Pumping System and Water Drafting Requirements* and Mitigation Measure BIO-MM-8: *Rescue and Relocate Fish from Affected Habitat* would reduce these potential impacts to less than significant.

BIO-MM-7: Implement Flow Pumping System and Water Drafting Requirements

All pump intakes that are placed in Tiger Creek, the Reservoir, existing plunge pool, or any other waterbody to fill water trucks or to lower the plunge pool shall be screened to prevent fish species from being entrained with water being pumped from the creek or reservoir. A round or square screen mesh that is no larger than 2.38 millimeters (0.094 inch) in the narrow dimension, or any other shape that is no larger than 1.75 millimeters (0.069 inch) in the narrow dimension shall be used.

BIO-MM-8: Rescue and Relocate Fish from Affected Habitat

PG&E shall develop and implement a fish rescue and relocation plan to capture and relocate any fish out of harm's way prior to installation of the plywood or steel sheet at the M-76 weir and commencement of dewatering in Tiger Creek to facilitate construction of the new spillway, flip bucket, and plunge pool. The fish rescue and relocation plan shall be submitted to CDFW for approval at least 60 days before initiating activities to install the cofferdam. At a minimum, the plan shall include the following:

- A requirement that fish rescue and relocation activities commence immediately before plywood or steel sheet installation and that fish rescue and relocation in the affected stream reach shall occur immediately before (to the extent feasible) and as dewatering is occurring until no more fish are captured or the site is completely dewatered, whichever occurs first;
- A requirement that all gear and tools (e.g., waders, boots, nets, buckets) be decontaminated to minimize and avoid spreading aquatic invasive species and diseases (e.g., chytrid fungus), as briefly summarized below;
  - Soak equipment and gear for 10 minutes in a 7 percent bleach solution: 9 liquid ounces of bleach per gallon of water; or
  - Soak equipment and gear for 30 seconds in 0.015 percent Quat 128: 1/8 teaspoon per gallon of water.
- A description of the methods and equipment proposed to collect, transfer, and release all rescued fish. Capture methods may include seining, dip netting, and electrofishing, as approved by CDFW. The precise methods and equipment to be used shall be developed cooperatively by CDFW and PG&E; and
- A requirement that only qualified fish biologists lead the fish rescue and relocation.

Potential Effects on Native Resident Wildlife Movement

Potential Effects of Increased Lighting on Nocturnal Animal Movement

There are existing lights around the left abutment of the Dam that come on at dusk and stay on until sunrise. New lighting would be added across the crest of the Dam to the new access road turnaround and parking area, and from the Dam crest to the LLO. This would result in a larger illuminated area. The additional lighting could cause animals that are active at night to avoid traveling through the lighted area or expose animals to predation. This could result in increased energy expenditure or injury or mortality of individuals. The Proposed Project was designed to minimize potential effects of lighting on nocturnal animals by including the following conditions:

- The existing lighting would be replaced and most of the new and replacement lights would be controlled by a switch and would only be turned on when deemed necessary by an operator;
- Minimal lights would remain on all night in key areas that provide access to the facility. These lights would be motion-controlled such that they would be dimmed until the motion detectors are activated;
- Motion sensors would be calibrated to provide enough sensitivity to detect the presence of personnel, but not so sensitive as to be activated by small animals under normal conditions; and
- New and replacement lights would have shielding to focus lighting only on the areas that require illumination for safety purposes and would be designed to meet the intent of dark-sky requirements.

With these conditions in place, existing lighting would be reduced (i.e., would not remain on all night) and the effects of new lighting would be minimized. Therefore, the potential impact of new lighting on nocturnal animal movement would be less than significant and no mitigation would be required.

Potential Effects of Construction on Wildlife Movement

CDFW and the Caltrans commissioned the California Essential Habitat Connectivity Project because a functional network of connected wildlands is essential to the continued support of California's diverse natural communities in the face of human development and climate change (Spencer et al. 2010:1). The Essential Connectivity Map shows the relatively natural habitat blocks that support native biodiversity (natural landscape blocks) and areas essential for ecological connectivity between them (essential connectivity areas) (Spencer et al. 2010:xii). Mapped natural landscape blocks are large areas of mostly intact and well-conserved natural areas, and essential connectivity areas are connections between these blocks that have been identified as high priority for maintaining and enhancing ecological connectivity (Spencer et al. 2010:xi). According to information in CDFW's online Habitat Connectivity Viewer, the Project Area is not located within any natural landscape blocks or essential connectivity areas (California Department of Fish and Wildlife 2021).

CDFW's Areas of Conservation Emphasis layer for terrestrial connectivity in the online Habitat Connectivity Viewer shows the Cedar Mill staging area within the area categorized as “irreplaceable and essential corridors” and the Dam area and Doakes Ridge within the area categorized as “connections with implementation flexibility” (California Department of Fish and Wildlife 2021). “Irreplaceable and essential corridors” are described as priority species movement corridors based on channelized areas identified in The Nature Conservancy’s Omniscape model. Information on priority wildlife movement corridors is currently very limited and channelized areas are those areas where surrounding land uses and barriers are expected to funnel or concentrate animal movement. Channelized areas may represent the last available connection(s) between two areas, making them a high priority for conservation. Terrestrial connectivity categorized as “connections with implementation flexibility” are described as areas having connectivity importance, but are not currently identified as channelized areas, species corridors, or habitat linkages (California Department of Fish and Wildlife 2019).

Although the Cedar Mill staging area is located within a mapped “irreplaceable and essential corridor”, the site is highly disturbed by previous uses and a portion of the site is currently used for vehicle parking. Wildlife movement at the Cedar Mill staging area is likely to occur through the south and southwest portions of the site where there is more vegetative cover and adjacent undisturbed habitat. Limited or no Proposed Project activities are anticipated to occur in these areas. The area identified for the concrete batch plant is along SR 88, was previously paved, and is currently used for vehicle parking. Only 10 acres of the available 40 acres at the Cedar Mill staging area are proposed to be used for staging. As such, animals will be able to traverse the area but may be less likely to do so because of the greater amount of noise and human activity during use of the staging area. Given the disturbed nature of the site, that the most disruptive Proposed Project activities would be adjacent to the highway, and that much of the site would not be used for staging, no potential impact on terrestrial wildlife movement is expected at the Cedar Mill staging area.

In the Dam area, terrestrial native resident animals (i.e., deer, bobcats, foxes, raccoons, skunks, squirrels, snakes, lizards) are more likely to travel along Tiger Creek and the ridge top and avoid the very steep slopes between these areas. The Dam and the Reservoir are existing barriers to terrestrial wildlife movement in the Project Area. The large amount of downed wood debris may also be an existing barrier to smaller wildlife species. Some animals may avoid moving through the Dam area because of human activity (e.g., fishing, maintenance activities). Terrestrial native resident animals could move throughout the Doakes Ridge staging and spoils site but may avoid the areas around buildings where there is more human activity. Proposed Project construction may cause common wildlife species to temporarily avoid the Dam area and Doakes Ridge staging and spoils site or alter their movement patterns to avoid traveling through these areas. This could result in additional travel and increased energy expenditure. The number of individual animals expected to be affected is low given the existing barriers and conditions previously discussed. In addition, no identified natural landscape blocks or essential connectivity areas would be affected. Therefore, the Proposed Project would not substantially interfere with the movement of native resident wildlife movement and the potential impact on native resident wildlife movement would be less than significant.

Disturbance of Nesting Migratory Birds

Construction activities would be implemented during the nesting season of migratory birds (generally February 15 through August 31) and could result in the disturbance of birds nesting in or near the Project Area. In addition, 747 trees would be removed within the Dam area and at Doakes Ridge staging and spoils site. Removal of trees with active nests and construction disturbance close to active nests during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. This potential impact could be significant if it resulted in the reduction of local populations of migratory birds.

To ensure that active nests are not disturbed by tree removal or other construction activities and that the Migratory Bird Treaty Act and California Fish and Game Code are not violated, Mitigation Measure BIO-MM-9 would be implemented. With this mitigation measure, potential impacts on nesting migratory birds would be less than significant.

Mitigation Measure BIO-MM-9: Conduct a Preconstruction Survey for Nesting Birds and Implement Protective Buffers around Active Nests

If initial work activities are scheduled during the nesting bird season (February 15 to August 31), qualified biologists (i.e., biologists with experience locating and identifying bird nests and nesting behaviors) shall conduct at least one preconstruction survey for nesting birds no more than 14 days before mobilization and the start of vegetation removal. If work does not begin within 14 days of the survey or construction activities stop for 14 days or more during the nesting season, work areas shall be resurveyed for active nests. The Project Area and a 300-foot buffer for raptors and a 75-foot buffer for passerines around the Project Area shall be surveyed. If an active nest is found in a tree or other vegetation to be removed, a no-disturbance buffer area shall be established around the tree, and removal of the tree shall be delayed until the biologist has determined that the young have fledged. If other active nests are found in the survey area, no-disturbance buffers shall be established around active nests to limit disturbance until the nests are no longer active. The qualified biologists and the PG&E biologist shall determine the extent of the no-disturbance buffers, which shall be based on the species present and their sensitivity to disturbance, the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. Monitoring of active nests by a biologist may be required during high disturbance activities (i.e., vegetation removal). Construction crew members shall review a brochure on identifying and avoiding impacts on nesting birds. Should an active bird nest be found in the Project Area during work activities, all work shall cease within 75 feet of the active nest for non-raptors and 300 feet of the active nest for raptors, and the PG&E biologist shall be contacted to establish an appropriate no-work buffer zone.

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

No Impact. Through compliance with state and federal regulations protecting sensitive biological resources, including waters of the United States and special-status species, the Proposed Project would not conflict with any of the Amador County General Plan policies. There would be no potential 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. There are no adopted or approved habitat conservation plans, natural community conservation plans, or other approved conservation plans for the Project Area. There would be no potential impact.

3.6 Air Quality

3.6.1 Introduction

This section analyzes the Proposed Project's potential impacts related to air quality. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for air quality, and it analyzes the potential for the Proposed Project to affect these resources.

The Proposed Project is in Amador County, which is in the Mountain Counties Air Basin (MCAB). Some construction materials may originate from neighboring Sacramento County, which is in the Sacramento Valley Air Basin (SVAB). The analysis focuses on the primary criteria pollutants that would be generated by construction of the Proposed Project, which are carbon monoxide (CO), particulate matter (PM10 and PM2.5), and sulfur dioxide (SO_2), as well as the ozone precursors of reactive organic gases (ROG) and nitrogen oxides (NO_X). Please refer to Section 3.7 *Greenhouse Gas Emissions*, for a discussion of greenhouse gas (GHG) emissions.

As described in Chapter 2, *Project Description*, operations and maintenance at the Reservoir would continue as was done prior to the Proposed Project activities. All equipment and surplus materials would be removed from the Project Area. While there would be some minor differences in the approach to operations and maintenance during and after construction of the Proposed Project, these differences would not materially increase the use or intensity of equipment and vehicles. Accordingly, there would be no change in operational emissions relative to existing conditions. This analysis therefore focuses exclusively on construction-generated emissions because there would be no long-term operational air quality impact.

3.6.2 Area of Analysis

The air quality Area of Analysis encompasses the areas that would be directly and indirectly affected by construction activities. Two geographic scales define the Area of Analysis. The local Area of Analysis is the construction footprint and haul roads plus areas within 1,000 feet, and the regional Area of Analysis is the affected air basins (i.e., MCAB and SVAB).

3.6.3 Existing Conditions

The MCAB lies in the northern Sierra Nevada range, close to or contiguous with the Nevada border, and covers an area of roughly 11,000 square miles. Elevations range from over 10,000 feet at the Sierra Nevada crest down to several hundred feet above sea level at the Sacramento County boundary. The pattern of mountains and hills and overall terrain features of the MCAB cause wide variation in rainfall, temperature, and localized winds. These variations have an important influence on basin wind flow, pollutant dispersion, vertical mixing, and photochemistry. Overall, due to the rural nature of Amador County, low population density, and limited industry, air quality is generally good.

Amador County currently attains all federal air quality standards except for the 2015 8-hour ozone standard (United States Environmental Protection Agency 2023). The county is designated marginal nonattainment for this standard but has received a clean air determination (Federal Register, Vol 87, No 194, 60897). While the determination does not cancel the nonattainment designation, it suspends certain compliance obligations and reporting requirements. Amador County is currently designated a nonattainment area for the state ozone standard and an attainment area for all other state standards (California Air Resources Board 2023a).

Sacramento County is currently designated nonattainment for the 2015 8-hour ozone federal standard and 24-hour federal PM2.5 standard. The county is also designated maintenance for the federal PM10 standard (United States Environmental Protection Agency 2023). Sacramento County is currently designated nonattainment for the state ozone and PM10 standards (California Air Resources Board 2023a).

3.6.4 Regulatory Setting

The federal Clean Air Act (CAA) was first enacted in 1963 and has been amended numerous times in subsequent years (1965, 1967, 1970, 1977, and 1990). The CAA establishes federal air quality standards, known as national ambient air quality standards (NAAQS), for six criteria pollutants and specifies future dates for achieving compliance. The CAA also mandates that the states submit and implement a state implementation plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. Table 3.6-1 shows the NAAQS currently in effect for each criteria pollutant, as well as the California ambient air quality standards (CAAQS). Table 3.6-2 provides a brief description of sources and health effects of the six criteria pollutants for which there are NAAQS.

Table 3.6-1. National and State Ambient Air Quality Standards

Criteria Pollutant	Average Time	California Standards	National Standards[a] Primary	National Standards[a] Secondary
Ozone	1-hour	0.09 ppm	None[b]	None[b]
	8-hour	0.070 ppm	0.070 ppm	0.070 ppm
Coarse Particulate Matter (PM10)	24-hour	50 μg/m^3	150 μg/m^3	150 μg/m^3
	Annual mean	20 μg/m^3	None	None
Fine Particulate Matter (PM2.5)	24-hour	None	35 μg/m^3	35 μg/m^3
	Annual mean	12 μg/m^3	12.0 μg/m^3	15 μg/m^3
Carbon Monoxide	8-hour	9.0 ppm	9 ppm	None
	1-hour	20 ppm	35 ppm	None
Nitrogen Dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	None
Sulfur Dioxide[c]	Annual mean	None	0.030 ppm	None
	24-hour	0.04 ppm	0.014 ppm	None
	3-hour	None	None	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	None
Lead	30-day average	1.5 μg/m^3	None	None
	Calendar quarter	None	1.5 μg/m^3	1.5 μg/m^3
	3-month average	None	0.15 μg/m^3	0.15 μg/m^3
Sulfates	24-hour	25 μg/m^3	None	None
Visibility-Reducing Particles	8-hour	–[d]	None	None
Hydrogen Sulfide	1-hour	0.03 ppm	None	None
Vinyl Chloride	24-hour	0.01 ppm	None	None

Source: California Air Resources Board 2016.
ppm= parts per million; μg/m^3 = micrograms per cubic meter; NAAQS = national ambient air quality standards; SO_2 = sulfur dioxide; CAAQS = California ambient air quality standards.

[a] National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.
[b] The federal 1-hour standard of 12 parts per hundred million was in effect from 1979 through June 15, 2005. The revoked standard is referenced because it was employed for such a long period and is a benchmark for state implementation plans.
[c] The annual and 24-hour NAAQS for SO_2 only apply for 1 year after designation of the new 1-hour standard to those areas that were previously in nonattainment for 24-hour and annual NAAQS.
[d] CAAQS for visibility-reducing particles is defined by an extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.

Table 3.6-2. Sources and Potential Health and Environmental Effects of Criteria Pollutants

Pollutant	Primary Sources	Potential Effects
Ozone	Formed by a chemical reaction between ROG and NO_X in the presence of sunlight. Primary sources of ROG and NO_X are vehicle exhaust, industrial combustion, gasoline storage and transport, solvents, paints, and landfills.	Inflammation of the mucous membranes and lung airways; wheezing; coughing and pain when inhaling deeply; decreased lung capacity; aggravation of lung and heart problems. Reduced crop yield and damage to plants, rubber, some textiles, and dyes.
Particulate matter	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, and automobiles.	Irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Carbon monoxide	A component of motor vehicle exhaust that is formed when carbon in fuel is not burned completely.	Reduced ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impaired vision and dizziness that can lead to unconsciousness or death.
Nitrogen dioxide	Motor vehicles, electric utilities, and other sources that burn fuel.	Aggravation of lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming and nutrient overloading,

Pollutant	Primary Sources	Potential Effects
		which deteriorates water quality. Brown discoloration of the atmosphere.
Sulfur dioxide	Petroleum refineries, cement manufacturing, metal processing facilities, locomotives, large ships, and fuel combustion in diesel engines.	Aggravation of lung and heart problems. Converts to sulfuric acid, which can damage marble, iron, and steel. Damage to crops and natural vegetation. Impaired visibility.
Lead	Metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia; damage to the kidneys, liver, brain, reproductive and nervous systems, and other organs; and neurological problems, including learning deficits and lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: California Air Pollution Control Officers Association n.d.

In California, the California Air Resources Board (CARB) delegates air quality management responsibilities to local air quality management districts. The Proposed Project is located within the local jurisdiction of the Amador Air District (AAD). The AAD is responsible for enforcing federal, state, and local air quality regulations and ensuring that the county complies with the federal and state air quality standards. The AAD has established the following district rules that may apply to the Proposed Project:

- **Rule 202—Visible Emissions**. This rule limits emissions that are darker in shade than No. 1 on the "Ringelmann Chart" or of such opacity as to obscure an observer's view to a degree equal to or greater than smoke;
- **Rule 205—Nuisance.** This rule prohibits the discharge of air contaminants, from any source, or other materials that cause injury, detriment, nuisance, or annoyance to the public;
- **Rule 207—Particulate Matter.** This rule regulates the allowable concentration of particulate matter discharged per standard dry cubic foot of exhaust gas. Concentrations may not exceed 0.1 grain per standard dry cubic foot of exhaust gas;
- **Rule 218—Fugitive Dust.** This rule requires reasonable precaution measures to reduce and control particulate matter; and

- **Regulation IV, Authority to Construct, Rule 401—Permit Required.** This rule requires an Authority to Construct prior to the start of construction.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) has local air quality management authority in neighboring Sacramento County, which is where some construction materials for the Proposed Project may originate. Proposed Project activities within the SMAQMD would be limited to material hauling that would result in emissions from on-road vehicles. There are no SMAQMD rules specifically and independently applicable to mobile sources of emissions.

The Conservation Element of the *Amador County General Plan* outlines the following policies to protect air quality (Amador County 2016:C/27-C/28):

- **Policy C-9.1:** Encourage development of commercial or industrial businesses which provide jobs for county residents in order to reduce vehicle miles traveled for residents who must drive elsewhere for employment;
- **Policy C-9.2:** Encourage infill development, and development near existing activity centers in order to encourage walking or bicycle use in running local errands;
- **Policy C-9.3:** Promote the separation of emission sources from sensitive receptors such as schools, day care centers, and health care facilities;
- **Policy C-9.4:** Encourage energy conservation and energy efficient design in new development projects;
- **Policy C-9.5:** Promote recycling of waste materials and the use of recycled materials;
- **Policy C-9.6:** Maintain viable public transportation options in Amador County, and provide transit connections such as park-and-ride services to job centers in nearby counties; and
- **Policy C-9.7:** Work with state and federal agencies to seek recognition of air pollutant movement from valley to mountain counties as a contributor to reduced air quality.

3.6.5 Environmental Effects

Potential impacts of the Proposed Project related to air quality are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section III, Air Quality, asks whether the Proposed Project would result in any of the following conditions.

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

Less than Significant. Considering its federal ozone nonattainment status, the AAD (2019) has developed the *Ozone Emergency Episode Plan* to identify control strategies and abatement triggers for reducing ozone levels in Amador County. The simplest test to assess a project's consistency is to determine if the project proposes development that is consistent with the growth anticipated by the relevant land use plans that were used in the formulation of the air quality attainment plans; if so, then the project would be consistent with the attainment plans.

The purpose of the Proposed Project is to mitigate critical near-term and long-term deficiencies of the Dam. The Proposed Project, therefore, would not directly induce long-term growth or development that would conflict with general plan growth forecasts. The Proposed Project would comply with all applicable AAD rules and the *Amador County General Plan* goals. In addition, as shown in Table 3.6-3, construction of the Proposed Project would not exceed any analysis threshold. Accordingly, potential impacts on the air quality plan would be less than significant.

b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard?

Less than Significant. Project construction has the potential to affect ambient air quality through use of heavy-duty equipment, worker vehicle trips, truck hauling trips, earthmoving, and demolition of existing structures. Criteria pollutant and precursor emissions generated by these sources were quantified using information provided by PG&E and the California Emissions Estimator Model (CalEEMod) (version 2022.1) (McGuckin pers. comm.). Use of a mobile concrete batch plant at the Cedar Mill staging area would also generate fugitive dust emissions. These emissions were quantified using the USEPA's *AP-42 Compilation of Air Pollutant Emission Factors* (AP-42), Section 11.12 (2006:Tables 11.12-2 and 11.12-8). Wind erosion of the aggregate and sand storage piles would also result in fugitive dust. These emissions were quantified using the *WRAP Fugitive Dust Handbook* (Countess Environmental 2006:9-8).

Table 3.6-3 summarizes emissions that would be generated by construction of the Proposed Project and concrete batching in the AAD. Emissions would be generated over multiple phases between July 2024 and May 2026, with several phases occurring concurrently. Table 3.6-3 identifies the maximum daily emissions that would occur during peak construction activity in each year. Material hauling emissions through SMAQMD are presented in Table 3.6-4. Please refer to

Appendix D, *Air Quality Calculations and Assumptions,* for all modeling assumptions and outputs.

Table 3.6-3. Estimated Maximum Daily Criteria Pollutant Emissions from Proposed Project Construction and Onsite Concrete Batching in Amador County (pounds) [a]

Year [b]	ROG	NO_X	CO	SO_2	PM10	PM2.5
2024	8	63	57	<1	51	9
2025	5	40	40	<1	44	7
2026	1	14	14	<1	36	4
Threshold	-	85	-	-	80 [c]	82 [c]

Source: See Appendix D, *Air Quality Calculations and Assumptions*
ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM10 = particulate matter less than 10 microns in diameter; PM2.5 = particulate matter less than 2.5 microns in diameter.
[a] The emissions intensity of vehicles can differ in summer and winter. CalEEMod generates summer and winter period emissions, where summer emission factors are used for activities occurring between April and September and winter emission factors are used for activities occurring between October and March. Where applicable for construction phases occurring in October, the higher of the two estimates are presented above.
[b] Analysis adds emissions among sub-phases occurring on the same day. The reported value for each year represents the highest emissions that would be generated on any one day during the year.
[c] Compliance with fugitive dust control measures.

Table 3.6-4. Estimated Maximum Daily Criteria Pollutant Emissions from Material Hauling in Sacramento County (pounds) [a]

Year [b]	ROG	NO_X	CO	SO_2	PM10	PM2.5
2024	<1	7	3	<1	1	<1
2025	<1	2	1	<1	<1	<1
2026	<1	2	1	<1	<1	<1
Threshold	-	85	-	-	80 [c]	82 [c]

Source: See Appendix D, *Air Quality Calculations and Assumptions*
ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM10 = particulate matter less than 10 microns in diameter; PM2.5 = particulate matter less than 2.5 microns in diameter.
[a] The emissions intensity of vehicles can differ in summer and winter. CalEEMod generates summer and winter period emissions, where summer emission factors are used for activities occurring between April and September and winter emission factors are used for activities occurring between October and March. Where

applicable for construction phases occurring in October, the higher of the two estimates are presented above.

[b] Analysis adds emissions among sub-phases occurring on the same day. The reported value for each year represents the highest emissions that would be generated on any one day during the year.

[c] Compliance with fugitive dust control measures.

The AAD does not have adopted thresholds of significance to determine significant increases in levels of criteria air pollutant emissions. In the absence of specific CEQA thresholds, the AAD recommends using applicable guidance from adjacent air districts (Perry pers. comm.). Sacramento County is geographically proximate to Amador County. SMAQMD is responsible for ensuring the CAAQS and NAAQS are not violated in Sacramento County. SMAQMD (2020) has adopted construction thresholds for NOx, PM10, and PM2.5, as shown in Tables 3.6-3 and 3.6-4. SMAQMD also considers uncontrolled construction fugitive dust emissions to be potentially significant. These thresholds represent the level above which project-generated emissions could affect SMAQMD's commitment to attain the ozone and particulate matter standards. As previously noted, Sacramento County is currently designated nonattainment for the federal and state ozone standards, the federal PM2.5 standard, and the state PM10 standard. Therefore, SMAQMD's recommended thresholds provide a conservative analysis of the project's potential air quality impacts in Amador County, which attains all standards except the state and federal ozone standards.

As shown in Tables 3.6-3 and 3.6-4, neither construction of the Proposed Project nor material hauling through SMAQMD would generate NO_X or particulate matter emissions in excess of the numeric analysis thresholds. As discussed in Chapter 2, *Project Description*, Section 2.6 *Best Management Practices*, construction contractors would implement fugitive dust abatement measures (BMP-6: *Implement Fugitive Dust Abatement Measures*). Accordingly, construction-related emissions would have a less-than-significant potential impact.

c. Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant. Sensitive receptors are facilities that house or attract children, the elderly, and people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. The Dam spillway and staging areas are surrounded by undeveloped land. There are no sensitive receptors within 1,000 feet of these Proposed Project features. There are scattered rural residences within 1,000 feet of the Cedar Mill mobile batch plant and access roads (SR 88, Tiger Creek Road, Spur 1). The closest home to the mobile concrete batch plant is approximately 150 feet to the north on the other side of SR 88. The nearest residence to an access road is 63 feet east of SR 88. Figure 3.6-1 shows the receptor locations within the localized air quality Area of Analysis.

The primary pollutants of concern with respect to health risks to sensitive receptors are criteria pollutants (regional and local) and toxic air contaminants (TAC). Ozone precursors (ROG and NO_X) and particulate matter are considered regional pollutants because they affect air quality on a regional scale. Localized pollutants are deposited and potentially affect populations near the emissions source. As these pollutants dissipate with distance, emissions from individual projects can result in direct and material health impacts on adjacent sensitive receptors (if any). The localized criteria pollutants of concern that would be generated by the Proposed Project are particulate matter (fugitive dust) and CO. The TAC of concern is diesel particulate matter (DPM).[1]

Regional Criteria Pollutants

Some individuals exposed to high concentrations of ozone or particulate matter may experience certain health effects, including increased incidence of cardiovascular and respiratory ailments (see Table 3.6-2). The emission thresholds adopted by SMAQMD consider existing air quality concentrations and attainment or nonattainment designations under the NAAQS and CAAQS. As previously noted, based on state and federal attainment designations, the ambient air quality is generally worse in Sacramento County when compared to conditions in Amador County. Accordingly, SMAQMD's thresholds provide a conservative analysis of the Proposed Project's potential air quality impacts in Amador County. Projects that generate emissions that are below the analysis thresholds would not adversely affect air quality or exceed the health protective NAAQS or CAAQS. As shown in Tables 3.6-3 and 3.6-4, neither construction of the Proposed Project nor material hauling through SMAQMD would generate ozone precursors or criteria pollutant emissions above the analysis thresholds. As such, the Proposed Project would not be expected to contribute to a significant level of air pollution that would degrade long-term, regional air quality. Potential impacts would be less than significant.

Localized Fugitive Dust

Exposure to fugitive dust at certain concentrations can irritate the respiratory system, especially for people who are naturally sensitive or susceptible to breathing problems. The primary sources of localized fugitive dust would be earthmoving and vehicle travel over unpaved surfaces at the Dam construction site. These emissions

[1] According to the California Department of Conservation (2000:1-7), naturally occurring asbestos is not found within the local Area of Analysis.

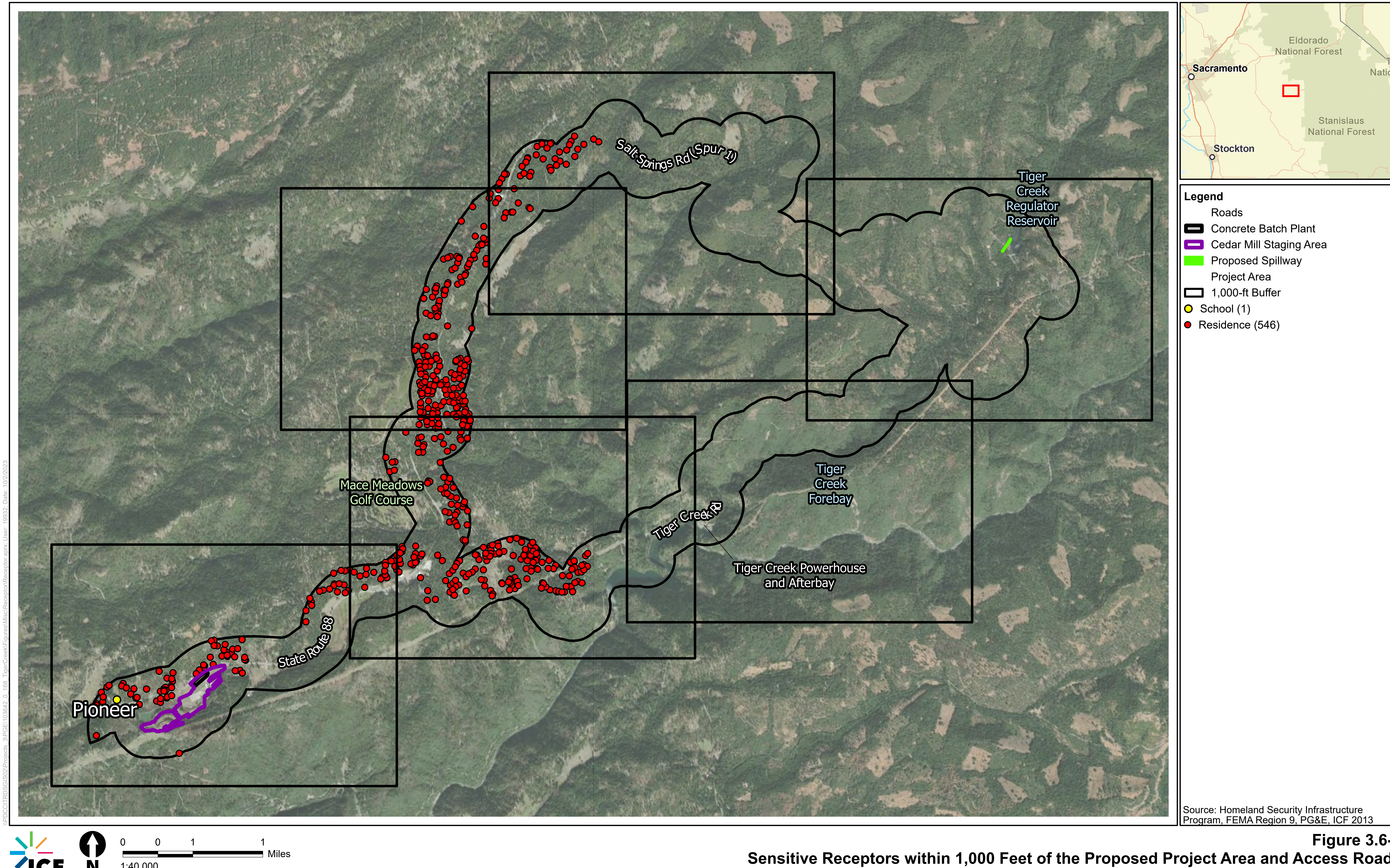
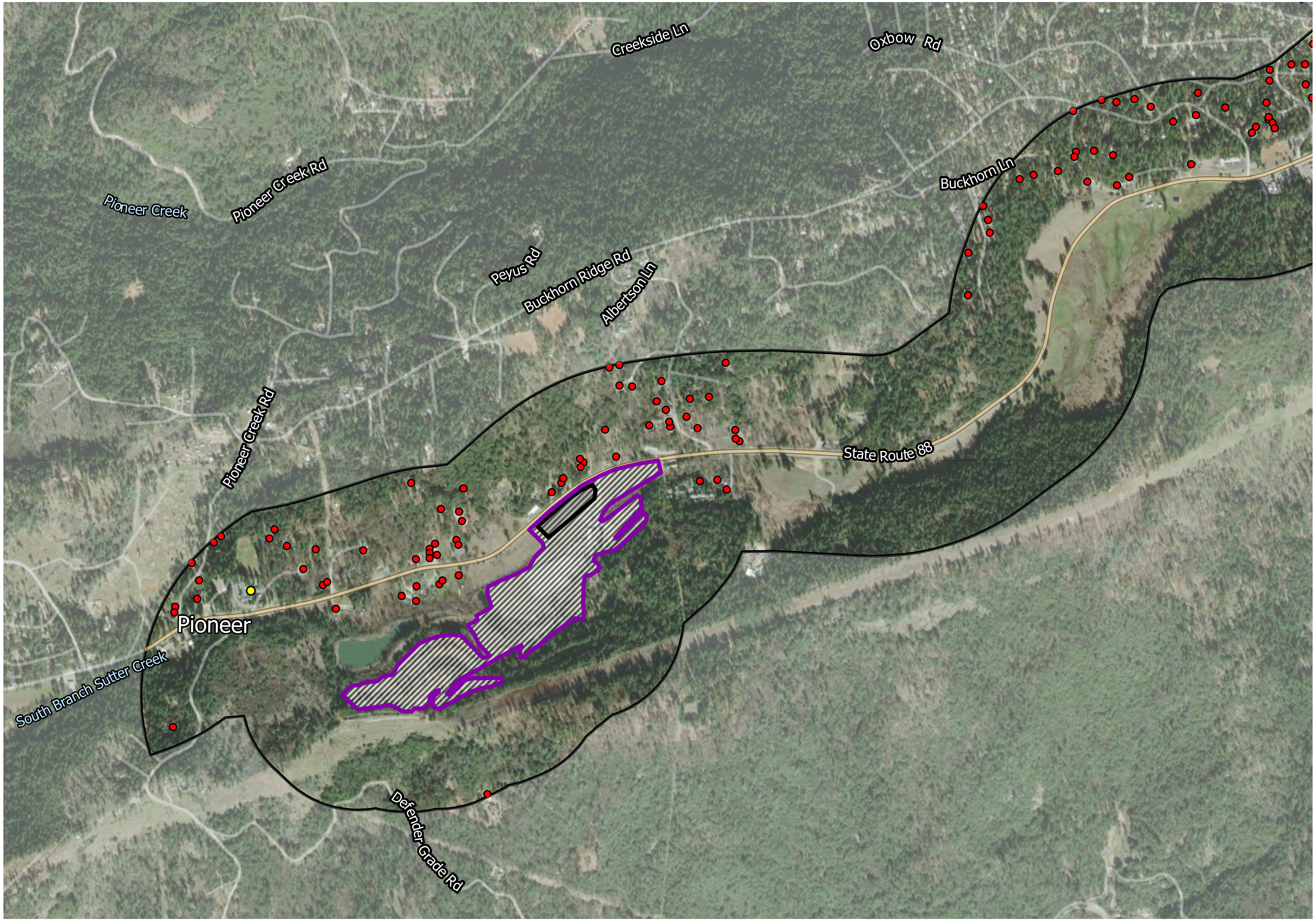
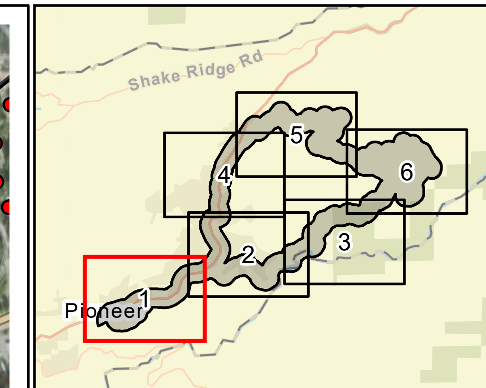


Figure 3.6-1
Sensitive Receptors within 1,000 Feet of the Proposed Project Area and Access Roads
Index





Legend

- Roads
- Concrete Batch Plant
- Cedar Mill Staging Area
- Project Area
- 1,000-ft Buffer
- School (1)
- Residence (105)

Source: Homeland Security Infrastructure Program, FEMA Region 9, PG&E, ICF 2013

ICF

N

0 0 0 0 Miles

1:12,000

Figure 3.6-1
Sensitive Receptors within 1,000 Feet of the Proposed Project Area and Access Roads
Page 1 of 6

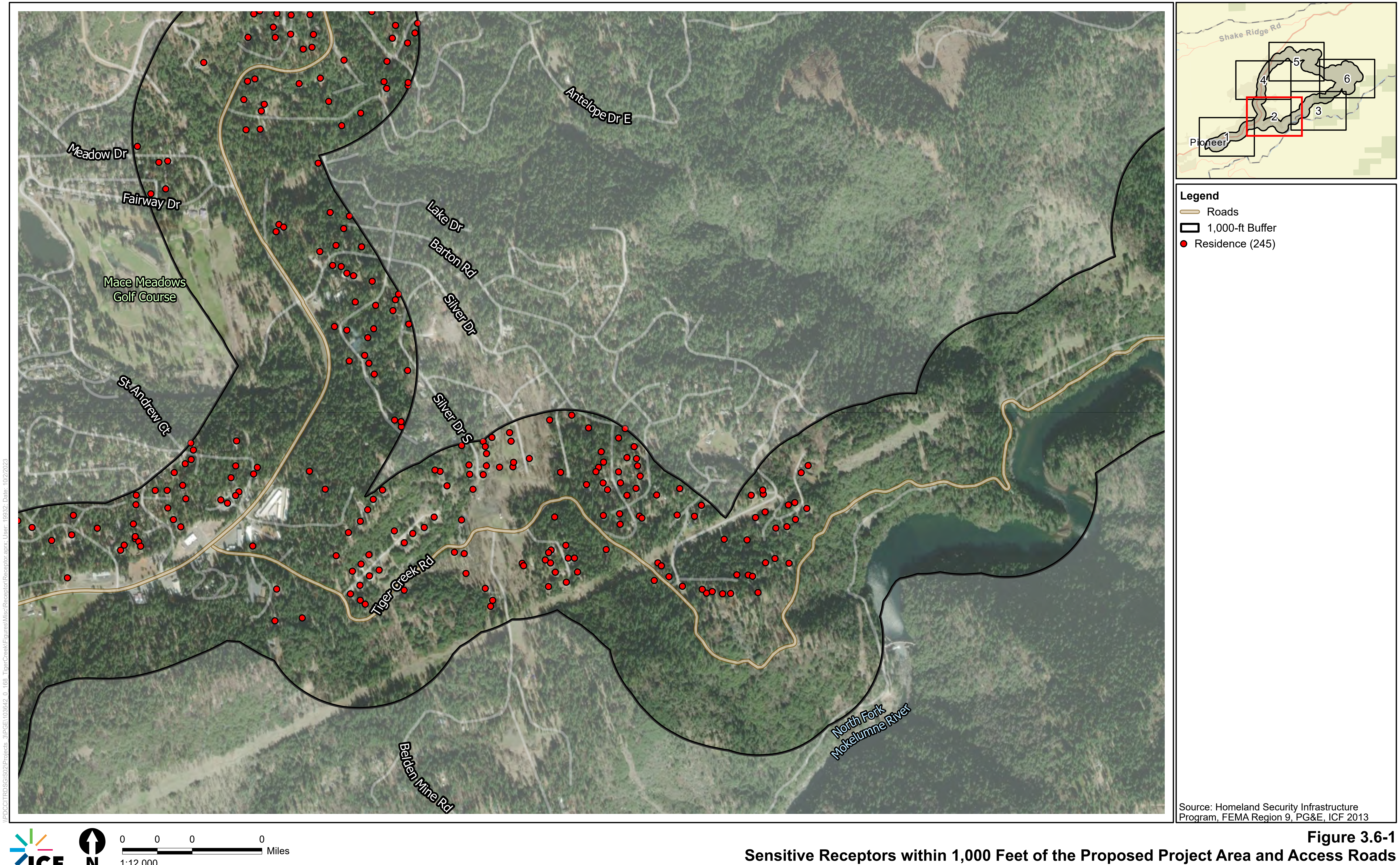


Figure 3.6-1
Sensitive Receptors within 1,000 Feet of the Proposed Project Area and Access Roads
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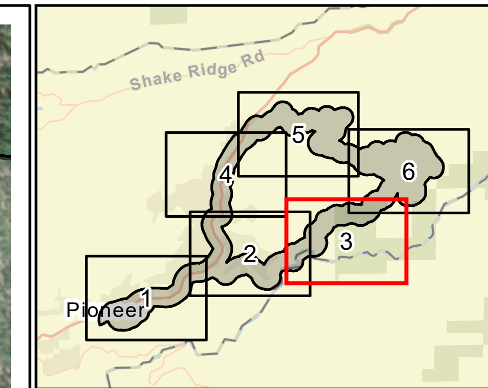


Legend

Roads

1,000-ft Buffer

Source: Homeland Security Infrastructure Program, FEMA Region 9, PG&E, ICF 2013

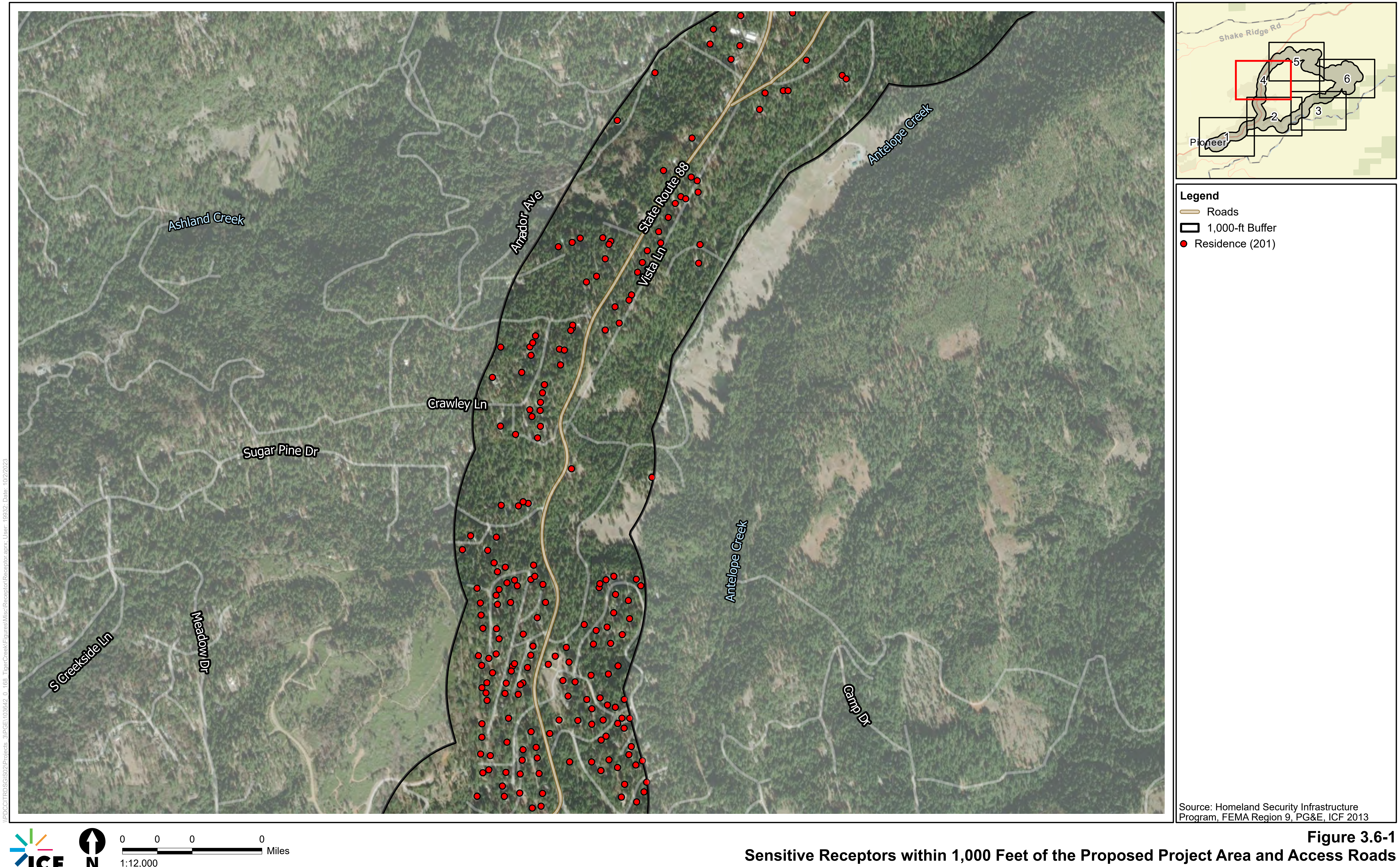
ICF

N

0 0 0 0 Miles

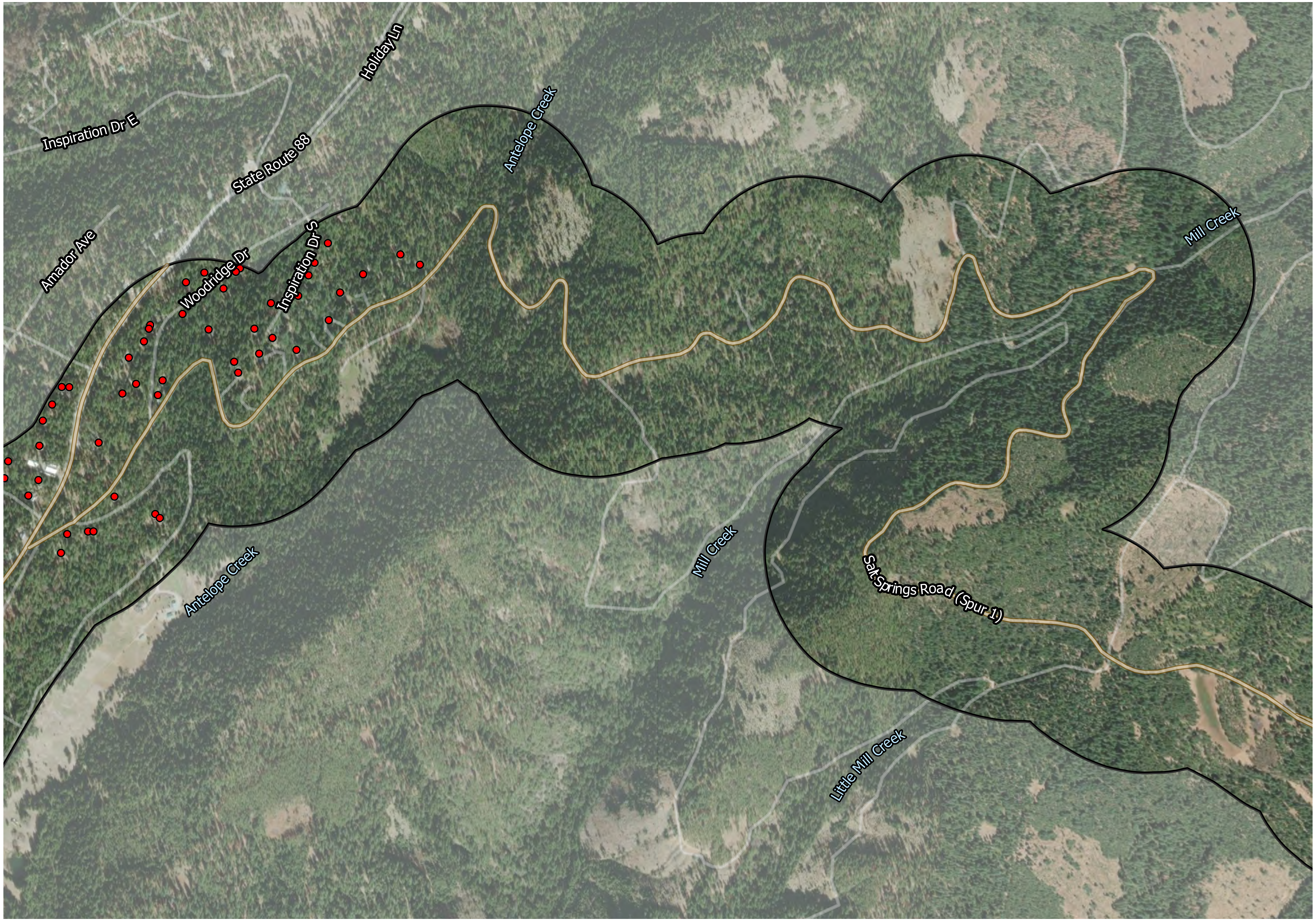
1:12,000

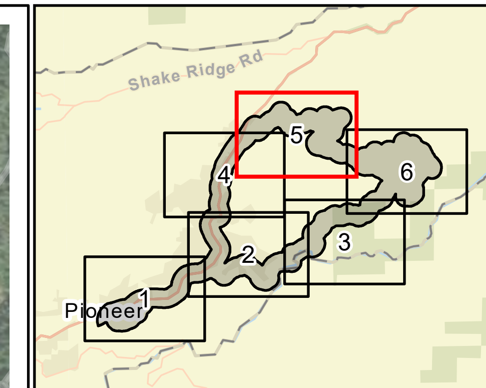
Figure 3.6-1
Sensitive Receptors within 1,000 Feet of the Proposed Project Area and Access Roads



Source: Homeland Security Infrastructure Program, FEMA Region 9, PG&E, ICF 2013

Figure 3.6-1
Sensitive Receptors within 1,000 Feet of the Proposed Project Area and Access Roads





Legend

- Roads
- 1,000-ft Buffer
- Residence (48)

Source: Homeland Security Infrastructure Program, FEMA Region 9, PG&E, ICF 2013

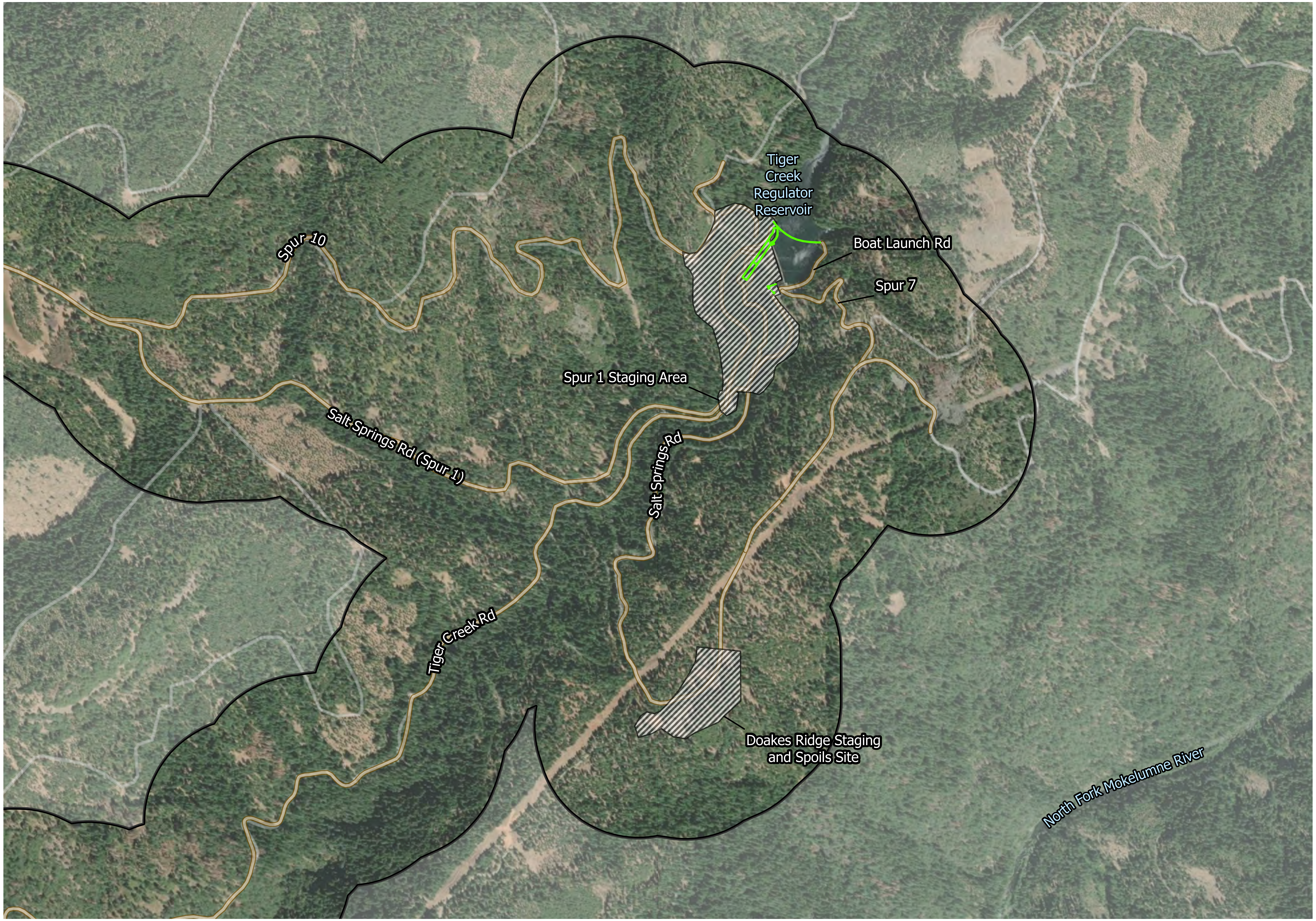
ICF

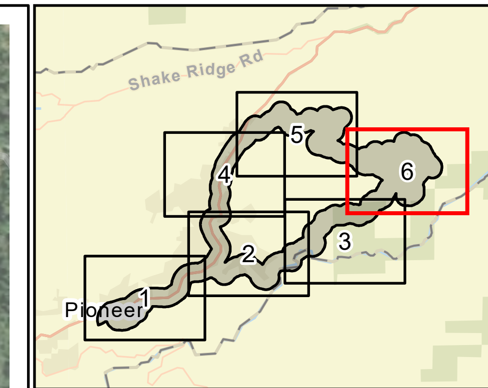
N

0 0 0 0 Miles

1:12,000

Figure 3.6-1
Sensitive Receptors within 1,000 Feet of the Proposed Project Area and Access Roads





Legend

- Roads
- Proposed Spillway, Log Boom, and Existing Spillway Abandonment
- Project Area
- 1,000-ft Buffer

Source: Homeland Security Infrastructure Program, FEMA Region 9, PG&E, ICF 2013

N

0 0 0 0 Miles

1:12,000

Figure 3.6-1

Sensitive Receptors within 1,000 Feet of the Proposed Project Area and Access Roads

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would be controlled through adherence to AAD rules and implementation of BMP-6: *Implement Fugitive Dust Abatement Measures*. As shown in Table 3.6-3, construction of the Proposed Project would not generate fugitive dust (PM) emissions above the analysis thresholds. Moreover, as previously indicated, there are no sensitive receptors within 1,000 feet of the Dam spillway and staging areas. Thus, construction dust emissions would be reduced at the nearest receptor location and would not substantially affect sensitive receptors.

Concrete mixing operations at the Cedar Mill mobile batch plant would generate fugitive dust emissions. Sources of fugitive dust would include sand transfer, aggregate transfer, cement unloading, cement supplement unloading, weight hopper loading, truck mix loading, and wind erosion of the onsite stockpile. These activities have the potential to cause elevated particulate matter concentrations at nearby residential areas. A quantitative ambient air quality analysis (AAQA) was conducted to assess the potential for concrete batching to cause violations of the health protective NAAQS and CAAQS (see Table 3.6-1). Particulate matter concentrations were modeled using the mass emissions modeling results for concrete batching (see Table 3.6-3) and the USEPA's AERMOD dispersion model. The AAQA considers both annual and short-term (i.e., 24-hour) concentrations during construction.

Table 3.6-5 presents the estimated maximum daily and annual particulate matter concentrations. Please refer to Appendix D, *Air Quality Calculations and Assumptions*, for model outputs. Three-year average (2019–2021) background concentrations of 24-hour PM2.5 and PM10 and annual PM10 currently exceed the NAAQS or CAAQS (California Air Resources Board 2023b). A substantial contribution to these existing violations is defined based on the applicable significant impact level (SIL) established by the USEPA under 40 CFR 51.165(b)(2) and in USEPA's supporting guidance (United States Environmental Protection Agency 2018:17). The USEPA SILs define when emissions changes are not meaningful and do not contribute to a violation of the ambient air quality standards under the Prevention of Significant Deterioration program. For all other standards, the total pollutant concentration, which reflects the incremental Proposed Project contribution plus the existing concentration, is compared to the CAAQS or NAAQS to determine if construction would cause a new ambient air quality violation. The incremental Proposed Project contribution was modeled along the property boundary of the Cedar Mill staging area to represent the closest point to which the public may be exposed to batching emissions.

Table 3.6-5. Estimated Maximum Daily and Annual Particulate Matter Concentrations from Concrete Batching (μg/m³)

Analysis	Project Increment [a]	Background [b]	Total Concentration [c]	Standard (Threshold)
24-hour PM10 CAAQS	1.24	- [d]	- [d]	5.00
24-hour PM10 NAAQS	0.93	128.77	129.70	150.00
Annual PM10 CAAQS	0.02	- [d]	- [d]	1.00
24-hour PM2.5 NAAQS	0.10	- [d]	- [d]	1.20
Annual PM2.5 CAAQS	0.02	8.50	8.52	12.00
Annual PM2.5 NAAQS	0.02	8.83	8.85	12.00

μg/m³ = microgram per cubic meter; PM10 = particulate matter less than 10 microns in diameter; PM2.5 = particulate matter less than 2.5 microns in diameter; NAAQS = national ambient air quality standard; CAAQS = California ambient air quality standard.

[a] Represents the highest modeled concentration.

[b] Background concentrations were obtained from CARB (2023b).

[c] Represents the maximum project-level incremental contribution plus background concentration.

[d] Background pollutant concentrations exceed the standard. Consequently, the potential for the project to contribute to the existing violation is analyzed by comparing the project increment to the SIL.

As shown in Table 3.6-5, concrete batching at the Cedar Mill staging area would not cause violations of the health protective NAAQS and CAAQS. Accordingly, the Proposed Project would not expose sensitive receptors to substantial fugitive dust concentrations. Potential impacts would be less than significant.

Localized Carbon Monoxide

Engine exhaust from offsite Proposed Project traffic may elevate CO concentrations at local intersections, resulting in hotspots. Receptors exposed to CO hotspots may have a greater likelihood of developing health effects such as fatigue, headaches, confusion, dizziness, and chest pain. Assuming concurrent activities, construction would require a maximum of 106 one-way employee, vendor, and haul trips in a single day. These few vehicle trips would not substantially worsen intersection congestion such that CO hotspots would occur. Accordingly, the Proposed Project would not expose sensitive receptors to substantial CO concentrations. Potential impacts would be less than significant.

Diesel Particulate Matter

DPM is a TAC generated by diesel-fueled equipment and vehicles operating at the Dam spillway site. Exposure to DPM can increase the risk of developing some cancers. While construction would involve the use of diesel equipment, diesel combustion would be limited to equipment and vehicle use during the roughly 2-year construction period. This duration is substantially lower than the 30-year exposure period typically associated with chronic cancer health risks (Office of Environmental Health Hazard Assessment 2015). Moreover, as previously noted, there are no sensitive receptors within 1,000 feet of the Dam spillway and staging areas. While there are residences near the mobile concrete batch plant, diesel emissions would be limited to those generated by one loader operating 3 days per week for just over one year. The concentration of DPM decreases dramatically as a function of distance from the source (California Air Resources Board 2005:9). Consequently, DPM concentrations, and thus health risks, would be reduced at the nearest receptor location.

Diesel-fueled trucks would be used to transport materials and equipment along access roads. While exposure to DPM from truck trips is transitory (i.e., it only occurs when a vehicle passes by a specific point), there are residential receptors within 1,000 feet of SR 88, Tiger Creek Road, and Spur 1. A quantitative health risk assessment was conducted to assess potential impacts associated with public exposure to DPM from construction haul trucks. The USEPA's AERMOD dispersion model was used to quantify annual average DPM concentrations at receptor locations within 1,000 feet of SR 88, Tiger Creek Road, and Spur 1 where construction hauling would occur. Cancer and noncancer health impacts at these locations were calculated based on the results of the dispersion modeling and the Office of Environmental Health Hazard Assessment's (2015:1-1–9-17) guidance on risk calculations.

Table 3.6-6 presents the estimated maximum health risks from construction hauling. The AAD does not have adopted thresholds of significance to determine significant increases in human health risk from exposure to DPM. Accordingly, risks are compared using the public notification and public meeting thresholds set under the Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill 2588). These thresholds, which are likewise recommended by SMAQMD (2020), are a probability exceeding 10 in 1 million of contracting cancer from exposure to DPM, and a ground-level noncancer hazard index greater than 1.0 for the maximum exposed individual. As shown in Table 3.6-6, maximum cancer and noncancer health hazards are not modeled to exceed the analysis thresholds. Accordingly, the Proposed Project would not expose sensitive receptors to substantial DPM concentrations. Potential impacts would be less than significant.

Table 3.6-6. Estimated Maximum Excess Cancer and Noncancer Health Risks from Construction Hauling on Local Access Roads

Location [a]	Maximum Modeled Excess Cancer (potential cases per million) [b]	Maximum Modeled Chronic Hazard Index
State Route 88	<1	<0.01
Tiger Creek Road	<1	<0.01
Spur 1	<1	<0.01
Threshold	10	1.0

[a] Only the highest modeled risk is presented for access road. Risks would be lower at all other modeled locations.
[b] Excess cancer risk represents the incremental increase in the number of cancers in a population of one million. Risks are cumulative of inhalation, dermal, soil, mother's milk, and crop pathways.

d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant. The generation and severity of odors is dependent on several factors, including the nature, frequency, and intensity of the source; wind direction; and the location of the receptor(s). Odors rarely cause physical harm, but can cause discomfort, leading to complaints to regulatory agencies. CARB (2005:34) identifies sewage treatment plants, landfills, waste transfer stations, recycling facilities, petroleum refineries, biomass and livestock operations, autobody shops, fiberglass manufacturing plants, painting/coating operations, rendering plants, and foundries as potential odor-emitting facilities. The Proposed Project would not result in the addition of such facilities associated with odors.

Potential sources of odor during construction activities include diesel exhaust from equipment. Odors from these sources would be localized and generally confined to the immediate area surrounding the Project Area. These odors would only occur during active equipment and vehicle use. Moreover, because there are no receptors within 1,000 feet of the Dam spillway and staging areas, and diesel combustion at the Cedar Mill mobile batch plant would be limited to one piece of equipment, any odors generated by equipment and vehicles would be localized, and few (if any) people would be exposed to odors. Construction of the Proposed Project is therefore not likely to result in nuisance odors that would violate AAD Rule 205 nuisance standards. This potential impact would be less than significant.

3.7 Greenhouse Gas Emissions

3.7.1 Introduction

This section analyzes the Proposed Project's potential impacts related to greenhouse gas (GHG) emissions. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for GHGs, and it analyzes the potential for the Proposed Project to affect these resources. The analysis focuses on the primary GHGs that would be generated by construction of the Proposed Project, which are carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), and hydrofluorocarbons (HFC) (from vehicle air conditioning). Please refer to Section 3.6 *Air Quality* for a discussion of criteria pollutants and potential air quality impacts.

3.7.2 Area of Analysis

Climate change is a global problem, and GHGs are global pollutants. Given the long atmospheric lifetimes of GHGs, the GHGs emitted by many sources worldwide accumulate in the atmosphere. No single emitter of GHGs is large enough to trigger global climate change. Rather, climate change is the result of the individual contributions of countless past, present, and future sources. Thus, GHG impacts are inherently cumulative, and the GHG Area of Analysis includes the entire state and global atmosphere.

3.7.3 Existing Conditions

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of GHGs have a broader, global impact. Global warming associated with the "greenhouse effect" is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global warming and associated climate change are CO_2, CH_4, N_2O, and fluorinated compounds. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors.

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC estimates that human-induced warming reached approximately one degree Celsius above preindustrial levels in 2017, increasing at 0.2 degree Celsius per decade. Under the current nationally determined contributions of mitigation from each country until 2030, global warming is expected to rise three degrees Celsius by 2100, with warming to continue afterward (Intergovernmental Panel on Climate Change 2018:4). Large increases in global temperatures could have substantial impacts on the natural and human environments worldwide and in California.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most accepted method to compare GHG emissions is the global warming potential (GWP) methodology. IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalent (CO_2e), which compares the gas in question to that of the same mass of CO_2 (CO_2 has a GWP of 1 by definition).

Table 3.7-1 lists the GWPs of CO_2, CH_4, N_2O, and HFC-134a and their lifetimes in the atmosphere. The GWPs are from the IPCC's (2007) fourth assessment report and are consistent with statewide GHG emissions reporting protocol (California Air Resources Board 2023).

Table 3.7-1. Lifetimes and Global Warming Potentials of Principal Greenhouse Gases

Greenhouse Gas	Global Warming Potential (100 years)	Lifetime (years)
Carbon dioxide	1	-
Methane	25	12
Nitrous oxide	298	114
Hydrofluorocarbon-134a	1,430	14

Source: California Air Resources Board 2023.

3.7.4 Regulatory Setting

3.7.4.1 Federal

Several federal executive orders (EO) have recently been signed by President Joe Biden related to GHG emissions and climate resiliency. EO 13990, signed in January 2021, set a national goal to achieve a 50 to 52 percent reduction from 2005 levels in economy-wide net GHG pollution in 2030. EO 14057, signed in December 2021, requires federal agencies to develop strategic processes for achieving, among other things, carbon-free electricity by 2030 and 100 percent zero-emission vehicle acquisitions by 2035. President Biden has also signed two bills—the Infrastructure Investment and Jobs Act and the Inflation Reduction Act—that provide funding for infrastructure improvements that will reduce GHG emissions and bolster resilience to climate change. Despite these actions, there is currently no federal law or legislatively mandated national GHG reduction target. However, USEPA and the National Highway Traffic Safety Administration have adopted standards for CO_2 emissions and fuel consumption from heavy- and medium-duty vehicles.

3.7.4.2 State

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. Of particular importance are Senate Bill (SB) 32 and Assembly Bill (AB) 1279, which outline the state's GHG reduction goals of achieving a 40 percent reduction below 1990 emissions levels by 2030 and net zero GHG emissions (i.e., reach a balance between the GHGs emitted and removed from the atmosphere) no later than 2045. AB 1279 also mandates an 85 percent reduction in statewide GHG emissions (from 1990 levels) by 2045. *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan) and the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) provide a framework for achieving the 2030 and 2045 reduction targets, respectively, leveraging and enhancing many efforts and programs already adopted by the state (California Air Resources Board 2017, 2022). Many of these programs establish standards or limits to reduce GHG emissions from mobile sources (e.g., Advanced Clean Cars II, Advanced Clean Truck Regulation), energy and water consumption (e.g., Renewables Portfolio Standard, CALGreen Code), waste generation and management (e.g., SB 1383), natural and working lands (e.g., SB 1386), and other sources.

3.7.4.3 Local

At the local level, the AAD has air quality management jurisdiction in Amador County. Some construction materials may originate from neighboring Sacramento County, where the SMAQMD has local air quality management authority. The Conservation Element of the *Amador County General Plan* outlines the following policies to reduce GHG emissions (Amador County 2016:C-29):

- **Policy C-10.1:** Evaluate the potential effects of climate change on the county's human and natural systems and prepare strategies that allow the County to appropriately respond and adapt;
- **Policy C-10.2:** Develop and adopt a comprehensive strategy to reduce GHGs within Amador County by at least 15 percent from current levels by 2020;

- **Policy C-10.3:** Guide new development to areas where pedestrian and bicycle access to existing activity centers is possible, in order to reduce the need for automobile travel and vehicle miles traveled (VMT);
- **Policy C-10.4:** Work with service providers to ensure that transit offerings in the county are stable or expanding, and that transit is tailored to meet residents' needs;
- **Policy C-10.5:** Require new development projects to incorporate building placement and design features to increase energy efficiency in new structures;
- **Policy C-10.6:** Support green building through incentives for Leadership in Energy and Environmental Design (LEED) certification of new commercial, industrial, public, and multi-family residential buildings. Promote incentives for compliance with this standard as a way to increase the energy efficiency of new structures. Promote increased energy efficiency and green building practices through the County's use of these practices;
- **Policy C-10.7:** Support parcel-scale energy generation, including addition of solar panels for residential structures and cogeneration for larger commercial or industrial uses; and
- **Policy C-10.8:** Expand recycling and waste minimization efforts, including recycling of construction and demolition materials.

3.7.5 Environmental Effects

Potential impacts of the Proposed Project related to greenhouse gas emissions are discussed in the context of State CEQA Guidelines Appendix G checklist. Checklist section VIII, Greenhouse Gas Emissions, asks whether the Proposed Project would result in any of the following conditions.

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

Less than Significant with Mitigation Incorporated. Proposed Project construction would generate GHG emissions through use of heavy-duty equipment, worker vehicle trips, truck hauling trips, and vegetation removal. GHG emissions generated by these sources were quantified using information provided by PG&E and CalEEMod (version 2022.1) (McGuckin pers. comm.). Table 3.7-2 summarizes emissions that would be generated by construction of the Proposed Project in Amador County and material hauling through Sacramento County. Emissions would be generated over multiple construction phases between July 2024 and May 2026. Table 3.7-2 also includes emissions from lost annual carbon sequestration as the result of tree removal. Please refer to Appendix D, *Air Quality Calculations and Assumptions*, for all modeling assumptions and outputs.

Table 3.7-2. Estimated GHG Emissions from Proposed Project Construction and Material Hauling (metric tons)

Year	CO_2	CH_4	N_2O	HFC	CO_2e
2024	891	<1	<1	<1	909
2025	717	<1	<1	<1	734
2026	95	<1	<1	<1	98
Total construction [a]	1,704	<1	<1	1	1,742
Vegetation removal [b]	3,733	0	0	0	3,733
Total with vegetation removal	5,437	<1	<1	1	5,475

Source: See Appendix D, *Air Quality Calculations and Assumptions*
CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; HFC = hydrofluorocarbon; CO_2e = carbon dioxide equivalent, which includes the relative warming capacity (i.e., global warming potential) of each GHG.
[a] The analysis accounts for all emissions directly and indirectly generated by construction activities associated with the Proposed Project. Emissions generated upstream (e.g., material manufacturing) and downstream (e.g., recycling) of construction, otherwise known as "lifecycle emissions," are not included in the analysis, consistent with guidance from the California Natural Resources Agency (2018:41–42). While the origin of most raw materials is not known, and thus an emissions analysis would be speculative, construction of the project would require concrete from on- and off-site batch plants. Lifecycle emissions for cement and aggregate manufacturing, which is upstream of the concrete batching process, have been studied in various literature. Accordingly, for the purposes of disclosure, upstream CO_2 emissions resulting from cement and aggregate manufacturing were quantified using emissions factors from Marceau et al. (2007:Tables E1b and G1b). The analysis indicates that cement and aggregate manufacturing would generate 1,049 metric tons CO_2e. These emissions would be generated upstream of construction and through activities for which the State Water Board has no practical control. Furthermore, CARB directly regulates the industrial emissions associated with cement manufacturing, and thus those emissions would be regulated by CARB consistent with overall meeting of California GHG reduction targets over time. The emissions associated with cement manufacturing are therefore disclosed for informational purposes only.
[b] Lost sequestration potential over the design life expectancy of the Dam upgrades (100 years). Annualized, these emissions equate to 38 metric tons CO_2e per year.

Following construction, operations and maintenance at the Reservoir would continue as was done prior to the Proposed Project activities. All equipment and surplus materials would be removed from the Project Area. While there would be some minor differences in the approach to operations and maintenance, these differences would not materially increase the use or intensity of equipment and vehicles. Accordingly, there would be no change in operational emissions from equipment and vehicles relative to existing conditions. However, the Proposed Project would install additional lighting for enhanced safety in the Project Area, which would increase electricity consumption from existing usage by about 2,608 kilowatt-hours (kWh) per year. Indirect GHG emissions from increased electricity consumption were quantified using emission factors from CalEEMod (version 2022.1) and equal less than 0.5 metric ton of CO_2e in 2026. These emissions would decline annually and eventually reach zero because of SB 100, which requires that zero-carbon resources comprise 100% of electric retail sales to end-use customers by 2045.

The AAD has not developed quantitative GHG emissions thresholds for CEQA evaluations. In the absence of specific CEQA thresholds, the AAD recommends using applicable guidance from adjacent air districts (Perry pers. comm.). As discussed in Section 3.7.3 *Regulatory Setting*, SMAQMD has local air quality authority in Sacramento County, which borders Amador County and through which construction materials would be hauled. SMAQMD (2020) recommends a construction and operational screening threshold of 1,100 metric tons CO_2e per year. However, unlike SMAQMD's criteria pollutant thresholds, which were developed based on regional air quality conditions that consider cumulative ambient sources (see Section 3.6 *Air Quality*), this GHG threshold was developed based on emissions levels generated by land use development projects (i.e., commercial and residential). Recognizing that land use development projects in Sacramento County may differ from construction activities required for a spillway replacement project in Amador County, this IS/MND uses a two-pronged approach for analyzing the significance of Proposed Project-generated GHGs. First, emissions are compared to SMAQMD's threshold to assess their magnitude for informational purposes. Second, the analysis evaluates the extent to which the Proposed Project complies with applicable plans and policies adopted to reduce construction GHG emissions. Compliance with regulatory programs is recognized by the California Supreme Court as a potential pathway for evaluating GHG emissions consistent with CEQA (*Center for Biological Diversity v. Department of Fish and Wildlife*).

Table 3.7-2 indicates that construction of the Proposed Project would result in an estimated annual maximum of 909 metric tons CO_2e in 2024. Operational lighting emissions would not exceed one metric ton CO_2e per year. These emissions are less than SMAQMD's screening threshold of 1,100 metric tons CO_2e per year.

As discussed in Section 3.7.4 *Regulatory Setting*, the federal government has adopted standards for CO_2 emissions and fuel consumption from heavy- and medium-duty vehicles. CARB has also adopted the Advanced Clean Cars II and Advanced Clean Truck regulations, which will accelerate the use of zero-emission vehicles and trucks in California. The CALGreen Code contains mandatory requirements aimed at reducing construction waste and reducing environmental impacts during and after construction. For example, nonresidential projects must recycle and/or salvage for reuse a minimum of 65 percent of nonhazardous construction and demolition debris or meet local construction and demolition waste management ordinance requirements, whichever is more stringent (sections 4.4081.1 and 5.408.1). In addition, 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing for nonresidential projects must be reused or recycled (section 5.408.3). The Proposed Project would comply with these mandatory requirements.

The state's near-term (2030, within which the Proposed Project would be constructed) GHG strategy is defined by SB 32. The 2017 Scoping Plan identifies increasing sequestration as crucial to achieving the state's long-term climate change strategy (California Air Resources Board 2017:82). It outlines objectives to maintain natural lands as a resilient carbon sink and sets a goal to reduce GHG emissions from natural and working lands by at least 15 to 20 million metric tons of CO_2e by 2030. SB 1386 also identifies the protection and management of natural and working lands as a key strategy towards meeting the state's 2030 GHG reduction target. As noted above, the Proposed Project construction would involve tree removal that would result in a total lost sequestration potential of 3,733 metric tons CO_2 (see Table 3.7-2). This loss of carbon sequestration potential would conflict with the state's land use and sequestration goals, resulting in a potentially significant impact before mitigation.

With respect to operational lighting electricity, the 2017 Scoping Plan identifies energy efficiency as a key component for meeting the state's energy goals. While the Proposed Project would increase operational electricity use by about 2,608 kWh per year, all new fixtures would be LED and photo activated, which would minimize unnecessary energy usage. The Proposed Project would also modernize existing lighting fixtures to incorporate energy-efficiency features (e.g., LED bulbs, switch-controls, photo- and motion-activation). Accordingly, the proposed lighting changes are consistent with the 2017 Scoping Plan to increase energy efficiency.

Beyond sequestration and energy efficiency, the 2017 Scoping Plan includes broad policy objectives to help meet the state's 2030 target across the California economy. While the 2017 Scoping Plan does not have explicit regulatory requirements related to construction equipment, actions undertaken to achieve some policies will reduce GHG emissions in the construction sector. Table 3.7-3 analyzes consistency of the Proposed Project with the policy objectives of the 2017 Scoping Plan.

Table 3.7-3. Consistency of the Proposed Project with Scoping Plan Policies

Policy	Primary Objective	Consistency Analysis
Senate Bill 350	Reduce GHG emissions in the electricity sector by implementing the 50% Renewables Portfolio Standard, doubling energy savings, and taking other actions as appropriate to achieve the GHG emissions reductions planning targets in the Integrated Resource Plan process.	This policy is a state program that requires no action at the local or project level. Nonetheless, the Proposed Project new and replacement lighting incorporates energy-efficiency features.
Low-Carbon Fuel Standard	Transition to cleaner/less-polluting fuels that have a lower carbon footprint.	This policy is a state program that requires no action at the local or project level. Nonetheless, GHG-MM-1 prioritizes alternatively or renewably fueled vehicles/equipment.
Mobile-Source Strategy (Cleaner Technology and Fuels Scenario)	Reduce GHGs and other pollutants from the transportation sector by transitioning to zero-emission and low-emission vehicles, operating cleaner transit systems, and reducing vehicle miles traveled.	This policy is a state program that requires no action at the local or project level. Nonetheless, GHG-MM-1 prioritizes alternatively or renewably fueled vehicles/equipment.
Senate Bill 1383	Approve and implement short-lived climate pollutant strategy to reduce highly potent GHGs.	The Proposed Project does not include any new or expanded sources of high global warming potential GHGs.
California Sustainable Freight Action Plan	Improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California's freight system.	The Proposed Project does not include a freight component.

Policy	Primary Objective	Consistency Analysis
Post-2020 Cap-and-Trade Program	Reduce GHGs across largest GHG emissions sources.	The Proposed Project does not propose any major sources of GHG emissions (i.e., sources with annual emissions greater than 25,000 metric tons of CO_2e).

Source: California Air Resources Board 2017.

Mitigation Measure GHG-MM-1: *Implement Best Management Practices to Mitigate Tree Loss and Reduce Construction Generated Greenhouse Gas Emissions* is required to replace all removed trees at a 1:1 ratio or compensate for the lost sequestration potential through the purchase of GHG offsets. The measure also requires BMPs recommended by CARB for the reduction of construction-generated GHGs. With implementation of Mitigation Measure GHG-MM-1, this potential impact would be less than significant.

Mitigation Measure GHG-MM-1: Implement Best Management Practices to Mitigate Tree Loss and Reduce Construction Generated Greenhouse Gas Emissions

PG&E shall reduce GHG emissions generated during short-term construction by implementing the following measures.

Tree Removal

PG&E will employ a two-tiered approach to compensate for the GHG emissions impact resulting from tree removal.

1. All trees removed during Proposed Project construction shall be replaced at a 1:1 ratio (for every tree removed, a deepot 40 or similar-sized containerized tree will be planted). Deepot 40 containers generally measure 2.5 inches in diameter and 10 inches deep. Trees may be planted at the construction site, within the Project Area, or throughout PG&E's service territory. PG&E shall prioritize tree plantings of the same species as the trees removed. The final planting location and species shall be selected to maximize tree survivability and growth.
2. Given the number of affected trees, if replacement of all individuals is not desired by PG&E or deemed infeasible by PG&E, PG&E will purchase GHG offsets equal to the number of emissions from lost carbon sequestration of the removed trees. Emissions from lost sequestration from removal of all affected trees over the design life expectancy of the Dam upgrades have

been quantified as part of this IS/MND and total 3,733 metric tons CO_2 (see Table 3.7-2). This yields a maximum offset performance standard of 3,733 metric tons CO_2. If trees are replaced according to (1) above, PG&E may recalculate the number of required offsets based on the remaining trees that have been removed and will not be replaced. An updated emissions analysis conducted for the Proposed Project will be performed using approved emissions models and methods available at the time of the reanalysis. Consistent with the methodology used in this IS/MND, lifetime emissions from lost sequestration must be quantified over the design life expectancy of the Dam upgrades (100 years).

All GHG offsets must be created through a CARB-approved registry. These registries are currently the American Carbon Registry, Climate Action Reserve, and Verra, although additional registries may be accredited by CARB in the future. These registries use robust accounting protocols for all GHG offsets created for their exchange, including the six currently approved CARB protocols. This mitigation measure specifically requires GHG offsets created for the Proposed Project to originate from a CARB-approved protocol or a protocol that is equal to or more rigorous than CARB requirements under title 17 of the California Code of Regulations, section 95972. The selected protocol must demonstrate that the reduction of GHG emissions is real, permanent, quantifiable, verifiable, enforceable, and additional, as defined in California Code of Regulations, title 17, section 95802, subdivision (a).

GHG offsets from reduction projects in geographies closest to the Proposed Project (i.e., Northern California) will be prioritized before projects in larger geographies (i.e., Southern California, California, United States, internationally). PG&E will inform brokers of the required geographic prioritization for the procurement of GHG offsets. GHG offsets from reduction projects identified in Northern California that are of equal or lesser cost compared to the settlement price of the latest cap-and-trade auction must be included in the transaction. GHG offsets from reduction projects in larger geographies may be purchased if adequate credits cannot be found in Northern California or they exceed the price maximum identified above.

All GHG offsets will be verified by an independent verifier accredited by the American National Standards Institute's National Accreditation Board or CARB, or an expert with equivalent qualifications to the extent necessary to assist with the verification. All offsets must be retired before December 31 of the year during which tree removal occurs. Copies of the offset retirement verification must be made available to the public no later than June 30 of the following year.

Construction

1. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.
2. Encourage construction contractors to operate vehicles with the highest tier engines commercially available.
3. Prioritize use of alternative fuel (e.g., biodiesel, electric) or renewable diesel in Proposed Project construction vehicles/equipment.

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

Less than Significant with Mitigation Incorporated. There are no adopted local climate action plans or policies for the reduction of GHG emissions. The 2017 Scoping Plan is the state's plan for reducing GHG emissions to achieve the 2030 GHG reduction target outlined by SB 32. The Proposed Project's consistency with SB 32 (including the 2017 Scoping Plan) and other applicable state regulations is assessed below to determine the significance of this potential impact. Consistency with AB 1279 and the 2022 Scoping Plan is not specifically reviewed because all emissions generated by construction of the Proposed Project are expected to occur between 2024 and 2026, which is well before the AB 1279 target year (2045).

Senate Bill 32

SB 32 codified the state's GHG emissions reduction target for 2030. CARB adopted the 2017 Scoping Plan as a framework for achieving the 2030 GHG emissions target. As discussed under checklist item *a*, removal of existing trees would conflict with the scoping plan's objective to maintain natural lands as a resilient carbon sink. This is a potentially significant impact before mitigation. Mitigation measure GHG-MM-1 requires 1:1 replacement ratio of all removed trees, or compensation for the lost sequestration potential through the purchase of GHG offsets. This measure also outlines BMPs for the reduction of construction-generated GHG emissions, which is consistent with the broad policy objectives of the 2017 Scoping Plan. With implementation of Mitigation Measure GHG-MM-1, there would not be a conflict with SB 32, and this potential impact would be less than significant.

Other State Regulations

California has adopted statewide legislation addressing various aspects of GHG emissions reduction. Regulations, such as the SB 100/1020-mandated 100 percent carbon-free electricity by 2045 and new vehicle mandates and emission standards, will be necessary to attain the magnitude of reductions required for the state's 2030 GHG target. The Proposed Project would comply with all regulations applicable to new infrastructure construction or would be directly affected by the outcomes (e.g., vehicle travel would be less carbon intensive due to the increasingly stringent zero-emission standards). Unlike the 2017 Scoping Plan, which explicitly calls for additional emissions reductions from local governments and new projects, none of these state regulations identify specific requirements or commitments for new development beyond what is already required by existing regulations or will be required in forthcoming regulation. Therefore, there is no conflict or inconsistency.

3.8 Energy

3.8.1 Introduction

This section analyzes the Proposed Project's potential impacts related to energy. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for energy, and it analyzes the potential for the Proposed Project to affect these resources.

3.8.2 Area of Analysis

The Area of Analysis for energy includes the Project Area in Amador County and the material haul roads through Amador and Sacramento Counties. This analysis evaluates construction fuel and electricity energy consumption and the potential electricity energy use associated with proposed new and replacement lighting for enhanced safety in the Project Area.

3.8.3 Existing Conditions

The Proposed Project would consume energy in the forms of transportation fuels (i.e., gasoline and diesel) for off-road equipment, trucks, and employee traffic during construction as well as electricity use during construction and operations.

Gasoline is the most used transportation fuel in California, with 13.6 billion gallons sold in 2022 (California Energy Commission 2023a). More than 4 billion gallons of diesel were sold in 2015, making it the second most used transportation fuel in the state (California Energy Commission 2023b). Within Amador and Sacramento Counties, gasoline and diesel are consumed as the primary transportation fuels. Electricity, propane, and natural gas are the most used fuels within the built environment of Amador County (i.e., by buildings) (Sierra Business Council 2016).

Electricity in the Project Area is provided by PG&E and is used for existing electrical infrastructure, including lighting. As described in Chapter 2, *Project Description*, there are seven outdoor lights around the existing left Dam abutment. These lights are controlled by photocells and operate dusk-to-dawn, or approximately 12 hours per day. PG&E estimates that these lights operate at 60 percent power for 11 hours per day and at full power for only 1 hour per day, with an approximate electrical energy use of 1,553 kWh per year.

3.8.4 Regulatory Setting

This section summarizes key federal, state, and local regulations, laws, and policies relevant to energy in the Area of Analysis. This section identifies regulations applicable to renewable energy use and energy efficiency. Please also see Sections 3.6 *Air Quality*, and 3.7 *Greenhouse Gas Emissions*, for more information regarding the regulations controlling and governing emissions. Vehicle fuel economy regulations are included in this section because they are relevant to construction vehicles and equipment that would be required for the Proposed Project.

3.8.4.1 Federal

Energy Policy and Conservation Act of 1975 and Corporate Average Fuel Standards

The Energy Policy and Conservation Act of 1975 established the first fuel economy standards for on-road motor vehicles sold in the United States. The National Highway Traffic Safety Administration (NHTSA) is responsible for establishing vehicle standards and revising existing standards. Its Corporate Average Fuel Economy program was created to determine vehicle manufacturers' compliance with the fuel economy standards. The USEPA administers the testing program that generates the fuel economy data.

Energy Policy Act of 2005

The Energy Policy Act of 2005 establishes a comprehensive, long-term federal energy policy and is implemented by the United States Department of Energy. The act addresses energy production in the United States, including oil, gas, coal, and alternative forms of energy and energy efficiency and tax incentives. Energy efficiency and tax incentive programs include credits for the construction of new energy-efficient homes, production or purchase of energy-efficient appliances, and loan guarantees for entities that develop or use innovative technologies that avoid the production of GHG emissions.

Energy and Independence Security Act of 2007

The Energy Independence and Security Act of 2007 was passed to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve the energy performance of the federal government; and increase energy security in the United States, develop renewable fuel production, and improve vehicle fuel economy. The act included the first increase in fuel economy standards for passenger cars since 1975, a new energy grant program for use by local governments in implementing energy-efficiency initiatives, and a variety of green building incentives and programs.

3.8.4.2 State

Senate Bill 1389 (2002) and California Integrated Energy Policy Report

SB 1389 requires the California Energy Commission (CEC) to develop an integrated energy plan for electricity, natural gas, and transportation fuels. The CEC adopts an integrated energy policy report (IEPR) every two years and an update every other year. The IEPR covers a broad range of topics, including environmental performance of the electricity generation system, landscape-scale planning, transportation fuel supply reliability, climate adaptation activities, and climate and sea level rise scenarios intended to support improvements to the California energy system that reduce air pollution, congestion, and wasteful energy use. The 2022 IEPR was adopted in February 2023.

Renewables Portfolio Standard Program—Senate Bills 1078 (2002), 107 (2006), 2 (2011), 100 (2018), and 1020 (2022)

In 2002, California established its Renewables Portfolio Standard (RPS) Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2010. The goals of the RPS have been revised overtime by several senate bills. Pursuant to the latest revisions under SBs 100 and 1020, eligible renewable energy resources and zero-carbon resources must supply 60 percent of all retail sales of electricity to California end-use customers by December 31, 2030; 90 percent of all retail sales of electricity by December 31, 2035; 95 percent of all retail sales by December 31, 2040; and 100 percent of all retail sales by December 31, 2045. All electricity procured to serve state agencies must be provided by 100 percent eligible renewable energy resources and zero-carbon resources by December 31, 2035.

Clean Energy and Pollution Reduction Act of 2015—Senate Bill 350 (2015)

SB 350 was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. While the bill includes provisions for the RPS, these have been superseded by subsequent bills, SB 100 and SB 1020 (described under section 3.8.4.2 *State*, in the subsection *Renewables Portfolio Standard Program—Senate Bills 1078 (2002), 107 (2006), 2 (2011), 100 (2018), and 1020 (2022)*). With respect to energy efficiency, SB 350 requires a doubling of energy efficiency (electrical and natural gas) by 2030, as well as improvements to the efficiency of existing buildings. These mandates will be implemented by future actions of the California Public Utilities Commission and CEC.

3.8.4.3 Local

Local plans with a focus on or policies related to energy resources relevant to the Proposed Project include the *Amador County Energy Action Plan* and the Conservation Element of the *Amador County General Plan*.

Sacramento County does not have an energy action plan. The Energy Element of the *Sacramento County General Plan* contains policies intended to ensure energy conservation is considered in policy-making that guides the growth of the county. Although some construction materials for the Proposed Project may originate in Sacramento County, activities would be limited to material hauling and associated fuel-based energy use; there are no policies or action items specifically related to this short-term activity.

Amador County Energy Action Plan

Amador County adopted the *Amador County Energy Action Plan* on May 26, 2015. The *Amador County Energy Action Plan*, produced by the Sierra Business Council and supported by PG&E, provides a roadmap for expanding existing energy-efficiency and renewable-energy efforts underway in the county. The plan builds on energy-efficiency efforts that began in 2009, including the *Amador County Government Operations Energy Use and Greenhouse Gas Emissions Inventory*, and the 2011 Sierra Business Council GHG inventory of emissions from community activities, which included residential and non-residential sectors.

Amador County General Plan

The Reservoir provides water via the Lower Tiger Creek Conduit for power generation at the Tiger Creek Powerhouse. The Tiger Creek Powerhouse is one of several hydroelectric facilities in Amador County. The Conservation Element of the *Amador County General Plan* contains the following policies that support and encourage further development of hydroelectric facilities and use of renewable and locally sourced energy resources: (Amador County 2016:C-8 to C-9, C-25.)

- **Policy C-6.3:** Promote increased energy efficiency and green building practices through the County’s use of these practices and through use of incentives;
- **Policy C-6.4**: Encourage development of renewable energy generation options; and
- **Policy C-6.5**: Support use of renewable and locally-available sources of energy where feasible.

3.8.5 Environmental Effects

Potential impacts of the Proposed Project related to energy are discussed in the context of the State CEQA Guidelines Appendix G checklist. Checklist section VI, *Energy*, asks whether the Proposed Project would result in any of the following conditions.

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Proposed Project Construction

Less than Significant. Construction would involve consumption of gasoline and diesel fuels associated with operation of on-road vehicles and off-road equipment. Additionally, electricity would be used for mobile batch plant operations and at the construction office trailers.

Activities that consume gasoline and diesel also contribute to other related impacts. GHG emissions, such as CO_2, are linked to energy consumption. Energy consumption from the combustion of fossil fuels (i.e., gasoline and diesel) can therefore be quantified from predicted CO_2 levels based on the rate of CO_2 emissions emitted per gallon of combusted diesel (22.4 pounds/gallon) and gasoline (19.6 pounds/gallon) (Climate Registry 2023).

This evaluation of fuel consumption uses the same assumptions of construction equipment and vehicle numbers, horsepower ratings, and load factors used to estimate construction CO_2 emissions (see Section 3.7 *Greenhouse Gas Emissions*) to calculate construction-related fuel use. Estimated CO_2 emissions were used to characterize gallons of fuel consumed based on the carbon content of the fuel (Climate Registry 2023). Construction would consume approximately 28,000 kWh of electricity between 2024 and 2026.

Table 3.8-1 summarizes annual and total fuel and electricity consumption for construction of the Proposed Project in Amador County and material hauling through Sacramento County. Refer to Appendix D, *Air Quality Calculations and Assumptions*.

Table 3.8-1. Construction-Period Energy Consumption Estimates (2023 to 2026)

Year	Gasoline/Diesel (gallons)	Electricity (kWh)
2024	87,297	5,750
2025	70,230	19,750
2026	9,345	2,500
Total	166,873	28,000

Sources: Section 3.7 *Greenhouse Gas Emissions*, Section 3.7.5 *Environmental Effects* under checklist item *a*; and Appendix D, *Air Quality Calculations and Assumptions*, Section 5.8, *Construction Electricity Consumption and Emissions Factors*.
kWh = kilowatt hours.

Construction-related fuel and electric energy consumption in the Area of Analysis would be temporary and short-term, lasting only while construction is ongoing. Additionally, as discussed in Chapter 2, *Project Description*, Section 2.6 *Best Management Practices*, PG&E will develop and implement a traffic control plan under BMP-4: *Implement Traffic Control Plan*. BMP-4 specifies that the traffic control plan shall include the following measures; these measures will minimize energy consumption from construction activities in addition to reducing emissions and providing stormwater pollution control.

- The construction contractor will comply with Title 13 of the CCR, which includes idling restrictions on construction vehicles and equipment to no more than five minutes.
- Construction equipment and vehicles will be properly tuned and maintained.
- To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

Implementation of the above measures required in the traffic control plan would help conserve energy, consistent with state and local policies to reduce energy consumption. The Proposed Project would, therefore, not result in the inefficient, wasteful, or unnecessary consumption of fuel or electricity. Accordingly, construction-related energy consumption would have a less-than-significant potential impact.

Proposed Project Operation

Less than Significant. Under the Proposed Project, the existing outdoor light fixtures would be replaced, and new lighting would be added along the existing Dam crest, across the new spillway pedestrian footbridge to the LLO, and adjacent to the permanent access road turnaround and parking area. The electrical energy use estimate for the Proposed Project lighting would be approximately 4,161 kWh per year, an increase of approximately 2,608 kWh per year. This level of electricity use is substantially less than annual levels for an average household.[1] Overall, although the electricity consumption for the Proposed Project would increase over existing conditions, as described in Chapter 2, *Project Description*, the lighting configuration incorporates modern energy-efficiency features (e.g., LED bulbs, switch-controls, photo- and motion-activation). Electricity for the new lighting would use the existing electrical infrastructure and power source. No new infrastructure or distribution lines would be required.

The proposed lighting changes are needed to modernize the lighting fixtures and improve safety conditions in the Project Area and would consume less than the average annual California or United States household energy use. Therefore, although the Proposed Project would result in an increase in electricity consumption compared with existing conditions, the Proposed Project would not result in the inefficient, wasteful, or unnecessary consumption of energy resources during operation. The potential impact would be less than significant.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less than Significant. Proposed Project construction and operations activities would not require the use of energy in appreciable quantities (see checklist item *a*) and would not directly result in a need to construct new energy generation or supply facilities. There would be only minimal changes to existing operational activities and a small increase in existing operational electrical energy use for additional lighting at the Dam. The Proposed Project would not involve investor-owned utilities or retail sellers of electricity subject to the requirements of the state and local energy plans or regulations. The Proposed Project would not affect PG&E's ability to provide renewable energy resources and would not obstruct implementation of the RPS or result in energy consumption that would require installation of more energy production facilities.

The *Amador County Energy Action Plan* contains measures to increase energy efficiency in existing structures, new buildings, and municipal structures and

[1] The average annual United States household electricity consumption is approximately 11,000 kWh, although use in the western United States, including California, is less with an average annual household electricity consumption of approximately 8,525 kWh and (United States Energy Information Administration 2019).

operations. Additionally, the *Amador County Energy Action Plan* focuses on renewable energy efforts and reducing energy associated with water and waste. Those measures are associated with the operational aspects of new or existing projects. The Proposed Project would not construct any new buildings and is only modifying the Dam to replace the spillway with minimal changes to existing operational energy use; therefore, these measures and the energy action plan are not applicable to the Proposed Project.

The Proposed Project new and replacement lighting incorporates energy-efficiency features consistent with policies of Conservation Element of the *Amador County General Plan*. The Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This potential impact would be less than significant.

3.9 Noise

3.9.1 Introduction

This section analyzes the Proposed Project's potential impacts related to noise. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for noise, and it analyzes the potential for the Proposed Project to affect these resources.

3.9.1.1 Fundamentals of Noise and Sound

Overview of Noise and Sound

Noise is commonly defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. As noise is an environmental pollutant that can interfere with human activities, an evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water. Sound is characterized by various parameters, including the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor for characterizing the loudness of an ambient (existing) sound level. Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called "A-weighting," written as "dBA" and referred to as "A-weighted decibels." Table 3.9-1 defines sound measurements and other terminology used in this section, and Table 3.9-2 summarizes typical A-weighted sound levels for different noise sources.

In general, human sound perception is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level as it increases or decreases, respectively.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (such as L_{10}, L_{20}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). L_{dn} and CNEL values differ by less than one dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such. These measurements are defined in Table 3.9-1.

Table 3.9-1. Noise and Vibration Terminology

Sound Measurements	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude with respect to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
C-Weighted Decibel (dBC)	The sound pressure level in decibels as measured using the C-weighting filter network. The C-weighting is very close to an unweighted or “flat” response. C-weighting is used only in special cases (i.e., when low-frequency noise is of particular importance). A comparison of the measured A- and C-weighted level gives an indication of low-frequency content.
Maximum Sound Level (L_{max})	The maximum sound level measured during the measurement period.
Minimum Sound Level (L_{min})	The minimum sound level measured during the measurement period.
Equivalent Sound Level (L_{eq})	The equivalent steady-state sound level that in a stated period of time would contain the same acoustical energy.
Percentile-Exceeded Sound Level (L_{xx})	The sound level exceeded X% of a specific time period. L_{10} is the sound level exceeded 10% of the time, and L_{90} is the sound level exceeded 90% of the time. L_{90} is often considered to be representative of the background noise level in a given area.
Day-Night Level (L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to

Sound Measurements	Definition
	the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Vibration Velocity Level (or Vibration Decibel Level, VdB)	The root-mean-square velocity amplitude for measured ground motion expressed in dB.
Sound Exposure Level (SEL)	Sound Exposure Level is similar to the L_{eq} in that the total sound energy is averaged over the measurement period. The difference is that L_{eq} is averaged over the measurement period, whereas SEL is averaged over a reference duration of one second. For example, a noise level of 90 dBA lasting 1 second would have a SEL of 90 dBA, but if the event lasted 2 seconds the SEL would be 93 dBA.
Peak Particle Velocity (Peak Velocity or PPV)	A measurement of ground vibration, defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. PPV is usually expressed in inches per second (in/sec).
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

Table 3.9-2. Typical A-weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock band
Jet flyover at 1,000 feet		
	—100—	
Gas lawnmower at 3 feet		
	—90—	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	—80—	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower at 100 feet	—70—	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	—60—	
		Large business office
Quiet urban daytime	—50—	Dishwasher in next room
Quiet urban nighttime	—40—	Theater, large conference room (background)
Quiet suburban nighttime		
	—30—	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	—20—	
		Broadcast/recording studio
	—10—	
	—0—	

dBA = A-weighted decibels; mph = miles per hour.
Source: Federal Transit Administration. 2018. Transit Noise and Vibration Impact Assessment. FTA Report 0123. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: March 15, 2023.

For a point source, such as a stationary compressor or a piece of construction equipment, sound attenuates (lessens in intensity) based on geometry at a rate of six dB per doubling of distance. For a line source, such as free-flowing traffic on a freeway, sound attenuates at a rate of three dB per doubling of distance perpendicular to the source (California Department of Transportation 2013). Atmospheric conditions, including wind, temperature gradients, and humidity, can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travels over a hard surface such as pavement. The increased attenuation is typically in the range of one to two dB per doubling of distance. Barriers such as buildings or topographic features that block the line of sight between a source and receiver also increase the attenuation of sound over distance.

Community noise environments are generally perceived as quiet when the 24-hour average noise level is below 45 dBA, moderate in the 45 to 60 dBA CNEL range, and loud above 60 dBA CNEL. Very noisy urban residential areas are usually around 70 dBA CNEL. Along major thoroughfares, roadside noise levels are typically between 65 and 75 dBA CNEL. Incremental changes of three to five dB in the existing one-hour L_{eq}, or the CNEL, are commonly used as thresholds for an adverse community reaction to a noise increase. However, there is evidence that incremental thresholds in this range may not be sufficiently protective in areas where noise-sensitive uses are located and CNEL is already high (i.e., above 60 dBA). In these areas, limiting noise increases to three dB or less is recommended (Federal Transit Administration 2018).

Noise from Multiple Sources

As sound pressure levels in decibels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. Adding a new noise source to an existing noise source, with both producing noise at the same level, will not double the noise level. If the difference between two noise sources is 10 dBA or more, the higher noise source will dominate, and the resultant noise level will be equal to the noise level of the higher noise source. In general, if the difference between two noise sources is zero to one dBA, the resultant noise level will be three dBA higher than the higher noise source, or both sources if they are equal. If the difference between two noise sources is two to three dBA, the resultant noise level will be two dBA above the higher noise source. If the difference between two noise sources is 4 to 10 dBA, the resultant noise level will be 1 dBA higher than the higher noise source. Table 3.9-3 demonstrates the result of adding noise from multiple sources.

Table 3.9-3. Rules for Combining Sound Levels by Decibel Addition

When two decibel values differ by…	…add the following amount to the higher decibel value	Example
0 to 1 dB	3 dB	60 dB + 61 dB = 64 dB
2 to 3 dB	2 dB	60 dB + 63 dB = 65 dB
4 to 9 dB	1 dB	60 dB + 69 dB = 70 dB
10 dB or more	0 dB	60 dB + 75 dB = 75 dB

Source: California Department of Transportation 2020.

Attenuation of Noise

A receptor's distance from a noise source affects how noise levels attenuate (i.e., how noise levels decrease). Transportation noise sources tend to be arranged linearly such that roadway traffic attenuates at a rate of 3.0 to 4.5 dBA per doubling of distance from the source, depending on the intervening surface (paved or vegetated, respectively). Point sources of noise, such as stationary equipment or construction equipment, typically attenuate at a rate of 6.0 to 7.5 dBA per doubling of distance from the source, depending on the intervening surface.[1] For example, a sound level of 80 dBA at 50 feet from the noise source will be reduced to 74 dBA at 100 feet, 68 dBA at 200 feet, and so on, based on the 6 dB point-source reduction over a non-absorptive surface (e.g., pavement instead of vegetation). Noise levels can also be attenuated by "shielding" or providing a barrier between the source and the receptor. With respect to interior noise levels, noise attenuation effectiveness depends on whether windows are closed or open. Based on the USEPA's national average, closed windows reduce noise levels by approximately 25 dBA, and open windows reduce noise levels by about 15 dBA.[2]

[1] The 1.5 dBA variation in attenuation rate (six dBA vs. 7.5 dBA) can result from ground-absorption effects, which occur as sound travels over soft surfaces such as soft earth or vegetation (7.5 dBA attenuation rate) versus hard surfaces such as pavement or very hard-packed earth (six dBA rate) (United States Department of Housing and Urban Development. 1985. *The Noise Guidebook*, p. 24. Available: https://www.hudexchange.info/onecpd/assets/File/Noise-Guidebook-Chapter-4.pdf. Accessed: May 20, 2023.)

[2] United States Environmental Protection Agency. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Appendix B, Table B-4, p. B-6. March.

Noise-Sensitive Land Uses

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically may include but are not limited to single- and multi-family residential areas, health care facilities, churches, lodging facilities, and schools. Noise-sensitive land uses where people typically sleep are typically more sensitive to noise during nighttime hours (when people are typically sleeping). Recreational areas where quiet is an important part of the environment, as well as some commercial areas, such as outdoor restaurant seating areas, can also be considered sensitive to noise, but are generally not as sensitive to noise as places where people typically sleep.

Overview of Ground-borne Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Construction-related vibration primarily results from the use of impact equipment such as pile drivers (both impact and vibratory), hoe rams, vibratory compactors, and jack hammers, although heavily loaded vehicles may also result in substantial ground-borne vibration. Operations-related vibration results primarily from the passing of trains, buses, and heavy trucks. Vibration is measured by peak particle velocity (PPV), defined as the maximum instantaneous peak of the vibration signal in inches per second. PPV is the metric typically used to describe vibration from sources that may result in structural stresses in buildings (Federal Transit Administration 2018). Ground-borne vibration can also be quantified by the root-mean-square velocity amplitude, which is useful for assessing human annoyance. The root-mean-square amplitude is expressed in terms of VdB, a metric that is sometimes used in evaluating human annoyance resulting from ground-borne vibration. Vibration traveling through typical soil conditions may be estimated at a given distance by the following formula, where LV_{ref} is the reference VdB vibration level at 25 feet and D is the distance at which the vibration level is being estimated (Federal Transit Administration 2018):

$$LV_{(distance)} = LV_{ref} - 30 \times \log (D/25)$$

The operation of heavy construction equipment, particularly pile-drivers and other heavy-duty impact devices (such as pavement breakers), creates seismic waves that radiate along the surface of the ground and downward. These surface waves can be felt as ground vibration and result in effects that range from annoyance for people to damage to structures. Ground-borne vibration generally attenuates rapidly with distance from the source of the vibration. This attenuation is a complex function of how energy is imparted into the ground as well as the subsurface soil and/or rock conditions through which the vibration is traveling. Variations in geology can result in different vibration levels, with denser soils generally resulting in more rapid attenuation over a given distance. The effects of ground-borne vibration on buildings include movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Ground-borne noise is the rumbling sound generated by the vibration of building surfaces such as floors, walls, and ceilings that radiate noise from the motion of the room surfaces. Ground-borne noise can also occur because of the low-frequency components from a specific source of vibration, such as a rail line.

Vibration traveling through typical soil conditions may be estimated at a given distance by the following formula, where PPV_{ref} is the reference PPV at 25 feet (Federal Transit Administration 2018).

$$PPV = PPV_{ref} \times (25/\text{distance})^{1.5}$$

The background vibration velocity level in residential areas is usually 50 VdB or lower. The vibration velocity level of perception for humans is approximately 65 VdB, and human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, the movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are heavy construction equipment, steel-wheeled trains, and vehicular traffic on rough roads. Ground-borne noise and vibration are the most significant problems for tunnels that are under residential areas or other noise-sensitive structures.

3.9.2 Area of Analysis

The Area of Analysis for noise and vibration encompasses the areas that would be directly and indirectly affected by construction activities for the Proposed Project. Specifically, it includes portions of the Proposed Project near the Dam area, near the proposed batch plant, and areas near haul roads that will be used during Proposed Project construction (see Figures 1-2, *Project Location*, and 2-1, *Project Area*). In general, the local Area of Analysis for noise and vibration is the construction footprint and haul roads plus areas within approximately 1,000 feet.

3.9.3 Existing Conditions

3.9.3.1 Existing Uses at the Project Area

The Dam area of the Proposed Project is currently developed with the existing Dam and spillway. The sites for the proposed spillway alignment and plunge pool are located northwest of the existing spillway on the western side of the existing Dam. The batch plant site would be located at the Cedar Mill property adjacent to SR 88, and approximately 8.5 miles from the Dam area. There are approximately 40 acres of previously developed space at this site, most of which is flat. No additional development would be required to use this site for the Proposed Project with the exception of some possible minor vegetation management.

3.9.3.2 Existing Noise-sensitive Uses in the Vicinity

The Dam area of the Proposed Project is located over two miles from the nearest noise-sensitive land uses. However, some noise-sensitive uses (residences) are located as close as approximately 150 feet from the perimeter of the proposed batch plant. In addition, some noise-sensitive land uses (primarily residences) are located along the expected haul routes (Tiger Creek Road and Spur 1) for Proposed Project construction vehicles.

3.9.3.3 Existing Noise Levels

Existing ambient noise levels in the Area of Analysis for the Proposed Project are characterized primarily by noise sources associated with natural/undeveloped areas, property maintenance, and vehicle noise. Noise sources associated with natural areas include the rustling of leaves, flowing water of a river, and birds. During site visits, noise from property maintenance activities was heard in the general vicinity of the Proposed Project and nearest sensitive land uses, included distant chainsaws for tree trimming and small tractors for moving brush piles and ashes associated with fire prevention activities. Traffic noise was the dominant noise source along major roadways in the Project Area, such as SR 88 and Tiger Creek Road. Additionally, distant aircraft were noted during site visits.

Eight noise measurements were conducted between Tuesday, June 22, 2023, and Friday, June 23, 2023, to document existing noise levels in the Project Area and at nearby sensitive land uses. These included both short-term (ST) measurements, conducted over a period of 10- to 15-minutes, and long-term (LT) noise measurements which logged hourly data over a period of at least 24 hours. The measurement locations were distributed throughout the Area of Analysis for the Proposed Project, with an emphasis on locations that are representative noise-sensitive receptors in the Area of Analysis (i.e., residential dwellings) or locations near Proposed Project components (i.e., the Dam area, the batch plant, and/or haul or access routes for the Proposed Project). The measurement locations are indicated in Figure 3.9-1. The short- and long-term noise measurement results are summarized in Tables 3.9-4 and 3.9-5.

Table 3.9-4. Short-Term Noise Level Measurement Results

Site	Site Description	Measurement Start Time	dBA L_{eq}	dBA L_{max}	dBA L_{min}	Dominant Noise Source
ST-1	Tiger Creek Spillway/Regulator (38.476860°, -120.452430°)	06/20/2023 1:10 p.m.	60.3	61.6	59.5	Spillway water noise.
ST-2	Tiger Creek Road (38.446078°, -120.503593°)	06/23/2023 11:50 a.m.	52.0	74.2	36.2	Occasional vehicle pass-by and propeller planes overhead.

Note: Refer to Appendix E-1, *Long-Term Measurement Data*; Appendix E-2, *Short-Term Measurement Data*; Appendix E-3, *Field Sheets*; and Appendix E-4, *Field Pictures*, for full noise measurement data, additional noise measurement information, and field photos.
ST = short-term (10- to 15-minute) ambient noise measurement.
dBA = A-weighted decibels.

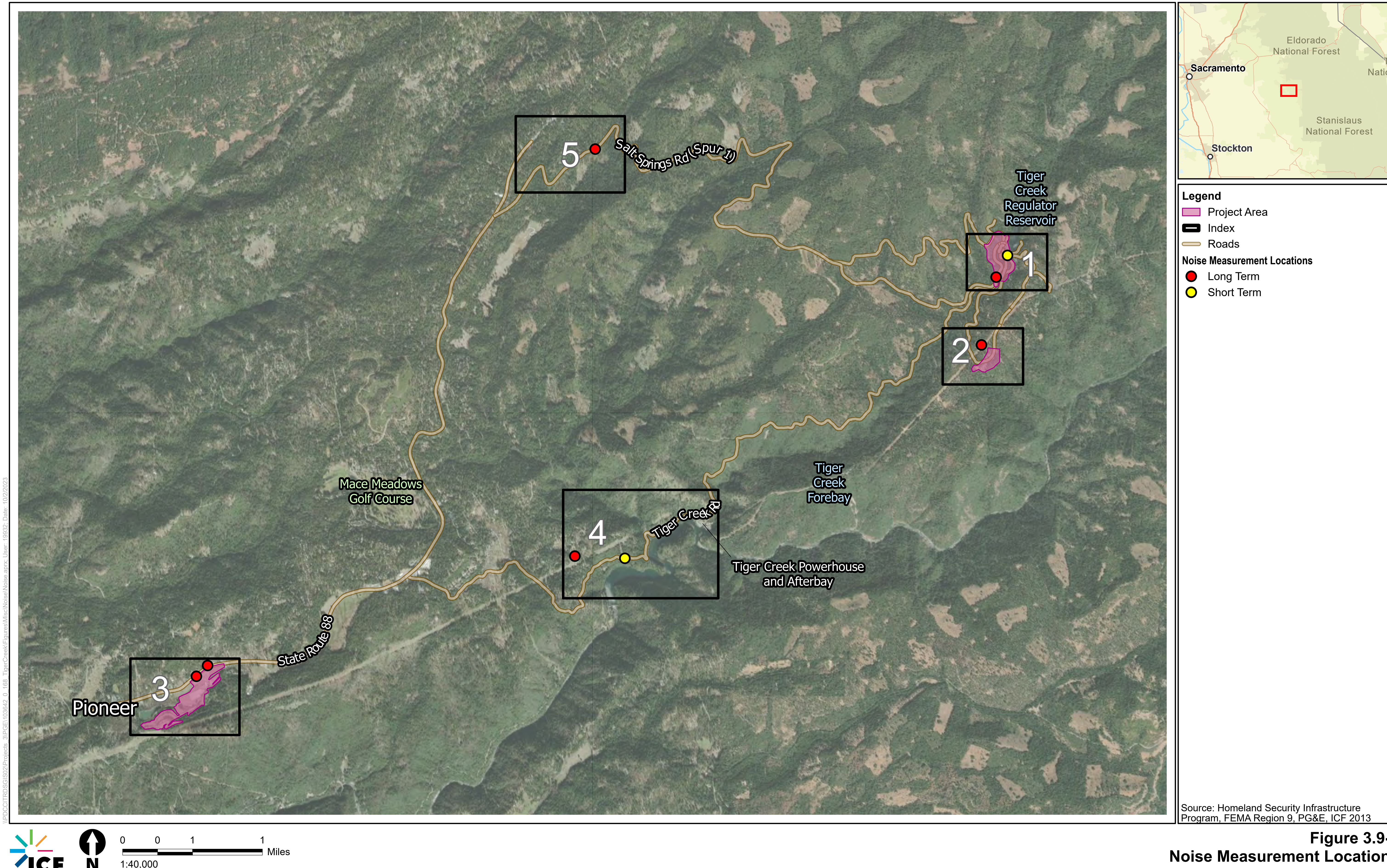
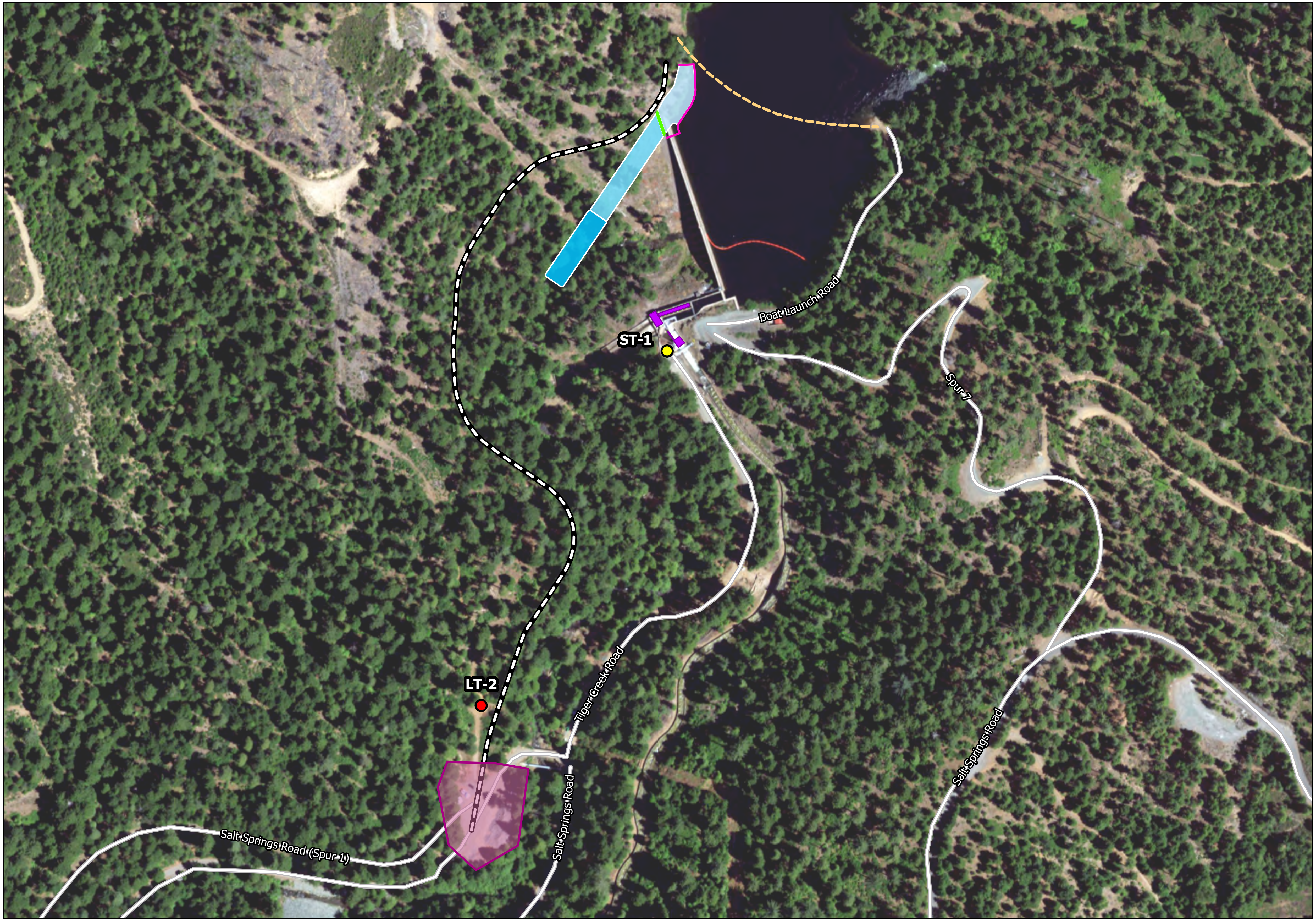
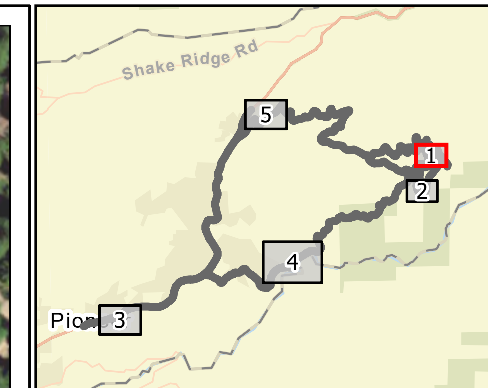


Figure 3.9-1
Noise Measurement Locations Index





Legend

- Spur 1 Staging Area
- Access Road

Proposed Project Features

- Dam Notch and Foot Bridge
- Existing Spillway Abandonment
- Crest Structure
- Chute and Flip Bucket
- Plunge Pool
- Cofferdam
- Log Boom
- Permanent Access Road (centerline)

Noise Measurement Locations

- Long Term
- Short Term

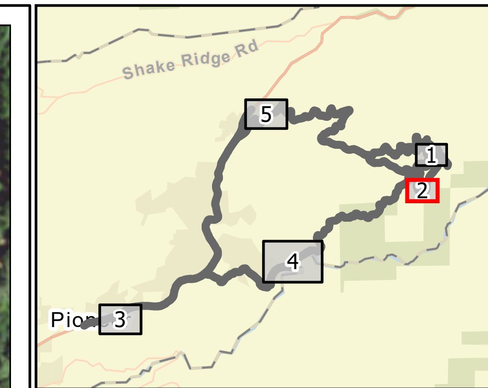
Source: Homeland Security Infrastructure Program, FEMA Region 9, PG&E, ICF 2013, NAIP 2020

ICF

N

0 95 190 380 Feet
1:2,800

Figure 3.9-1
Noise Measurement Locations
Page 1 of 5



Legend

Doakes Ridge Staging and Spoils Site

Access Road

Noise Measurement Locations

Long Term

Source: Homeland Security Infrastructure Program, FEMA Region 9, PG&E, ICF 2013, NAIP 2020

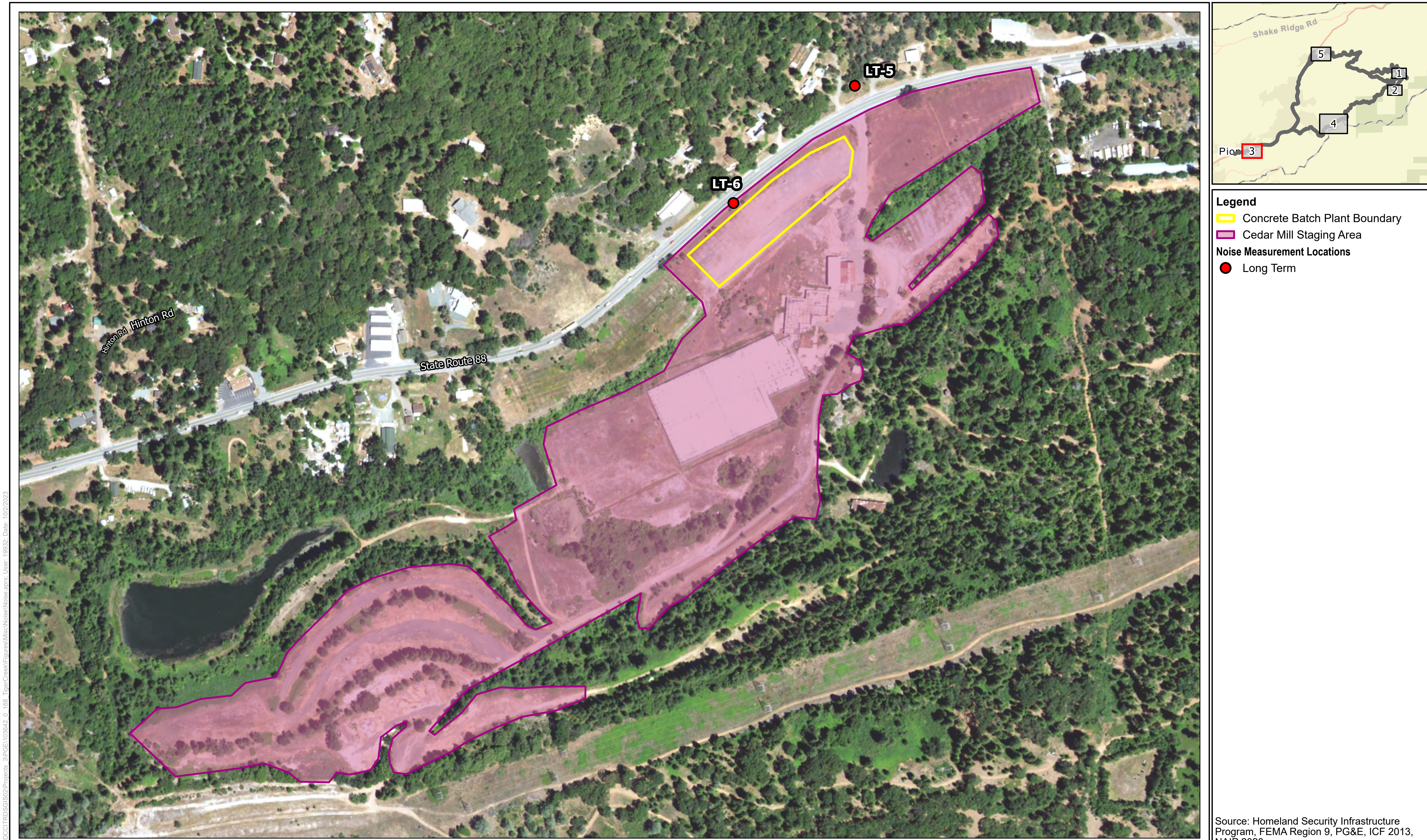
ICF

N

0 95 190 380 Feet

1:2,800

Figure 3.9-1
Noise Measurement Locations
Page 2 of 5



ICF

Figure 3.9-1
Noise Measurement Locations
Page 3 of 5

Legend

Access Road

Noise Measurement Locations

Long Term

Short Term

Source: Homeland Security Infrastructure Program, FEMA Region 9, PG&E, ICF 2013, NAIP 2020

0 188 375 750 Feet

1:5,400

Figure 3.9-1
Noise Measurement Locations
Page 4 of 5

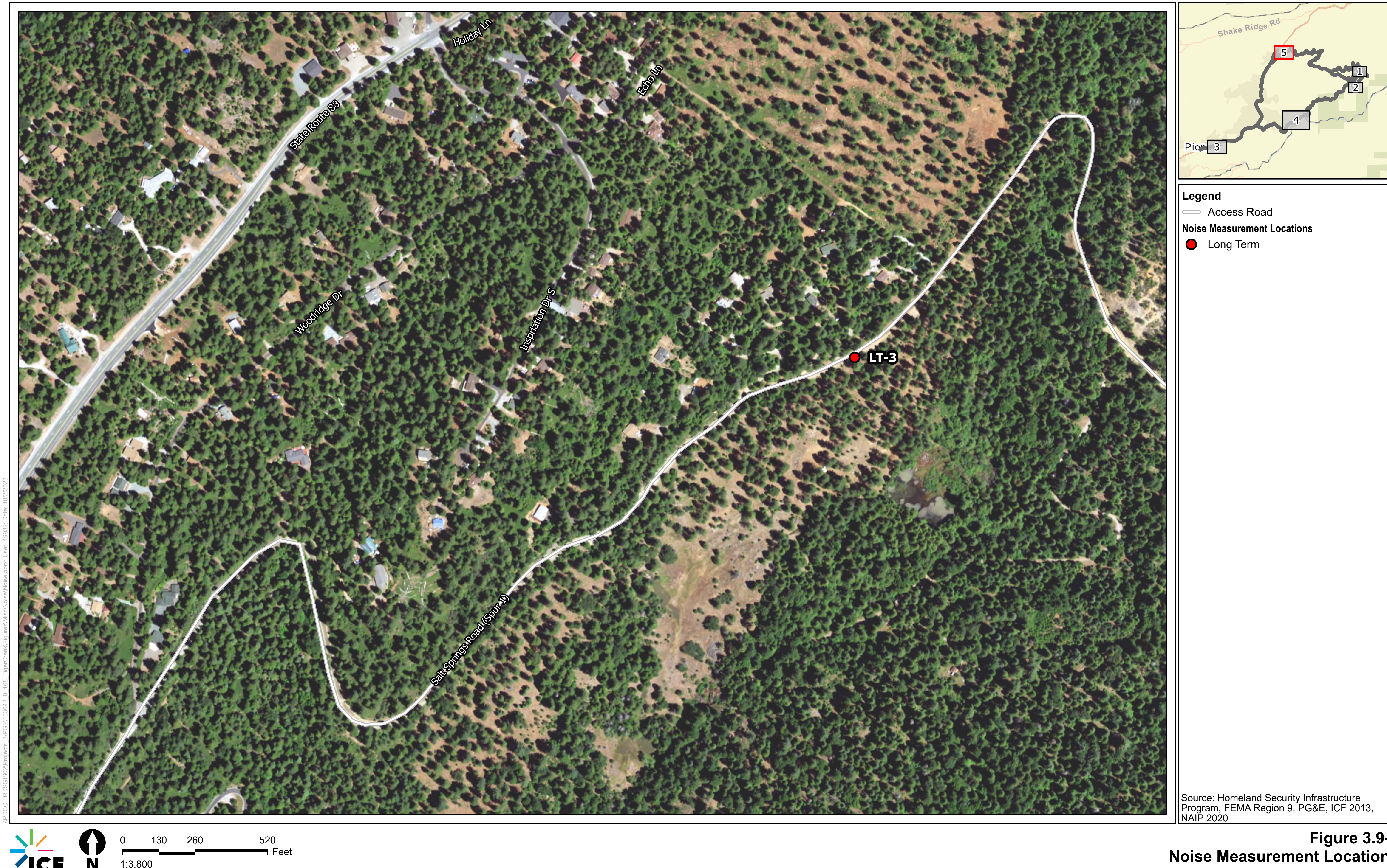


Figure 3.9-1
Noise Measurement Locations
Page 5 of 5

Table 3.9-5. Long-Term Noise Level Measurement Results

Site	Site Description	Wednesday (6/21/2023) CNEL	Thursday (6/22/2023) CNEL	Lowest L_{eq} Time of Occurrence	Lowest Daytime[a] L_{eq} Time of Occurrence	Wednesday Average Daytime [a] L_{eq}	Thursday Average Daytime [a] L_{eq}	Noise Measurement Notes [b]
LT-1	Doakes Ridge, powerline alley. (38.467611°, -120.456068°)	45.7	46.0	30.1 06/22/2023 9:00 p.m.	34.2 06/22/2023 8:00 a.m.	43.6	43.3	Natural/background noises (i.e., wind rustling plants, etc.). Occasional distant firearm sounds
LT-2	Tiger Creek Road, southwest of Spillway/Regulator (38.474622°, -120.453986°)	54.8	54.5	45.8 06/21/2023 12:00 p.m.	45.8 06/21/2023 12:00 p.m.	47.3	47.3	Vehicles on Tiger Creek Road, flowing water
LT-3	Approximately 1 mile down Salt Springs Road, from SR 88	61.8	61.9	36.4 06/21/2023 3:00 a.m.	40.5 06/21/2023 5:00 p.m.	56.1	57.6	Natural/background noises and private property fire

Site	Site Description	Wednesday (6/21/2023) CNEL	Thursday (6/22/2023) CNEL	Lowest L_{eq} Time of Occurrence	Lowest Daytime[a] L_{eq} Time of Occurrence	Wednesday Average Daytime [a] L_{eq}	Thursday Average Daytime [a] L_{eq}	Noise Measurement Notes [b]
	(38.488612°, -120.506620°)							prevention/ maintenance activities
LT-4	McKenzie Drive, north of Carolyn Way (38.446389°, -120.510186°)	54.8	54.9	36.4 06/22/2023 11:00 p.m.	47.3 06/22/2023 7:00 a.m.	56.2	54.4	Natural/background noises and distant tree work along McKenzie Drive
LT-5	North side of SR 88, across from old Cedar Mill (38.435651°, -120.558867°)	73.1	73.4	57.7 06/22/2023 1:00 a.m.	70.3 06/21/2023 8:00 a.m.	71.2	71.6	Vehicular traffic on CA-88, equipment staging at Cedar Mill
LT-6	South side of SR 88, near old Cedar Mill (38.434546°, -120.560368°)	76.7	77.0	61.4 06/21/2023 2:00 a.m.	74.0 06/2/2023 8:00 a.m.	74.7	75.2	Vehicular traffic on CA-88, equipment staging at Cedar Mill

Data collected from Wednesday, June 21, 2023, through Thursday, June 22, 2023.
Refer to Appendix E-1, *Long-Term Measurement Data*; Appendix E-2, *Short-Term Measurement Data*; Appendix E-3, *Field Sheets*; and Appendix E-4, *Field Pictures*, for the complete noise measurement data, additional noise measurement information, and field photos.
LT = long-term (48-hour) ambient noise measurement.
CNEL = Community Equivalent Noise Level.
All noise levels are reported in A-weighted decibels (dBA).
[a] Construction for the Proposed Project would occur between 7:00 a.m. and 5:30 p.m. Average daytime L_{eq} is calculated using the hours of 7:00 a.m. to 6:00 p.m.
[b] These measurements were not manned by a field engineer during the duration of the recording period. Observations noted here were made during sound level meter set up and retrieval.

As shown in Tables 3.9-4 and 3.9-5, measured noise levels varied based on the measurement location, and based on the presence of varying surrounding noise sources. For example, noise measurements near the existing spillway were measured to be 47 dBA L_{eq} (average daytime), and 55 dBA CNEL (24-hour). Near Doakes Ridge, noise was measured to be between approximately 43 dBA L_{eq} (average daytime) and 46 dBA CNEL (24-hour). Along access roads, such as Tiger Creek Road and Spur 1, measured noise levels ranged between 54 and 58 dBA L_{eq} (average daytime) and between 55 and 62 dBA CNEL (24-hour). Noise was also measured near the Cedar Mill staging area and proposed batch plant. In this area the dominant source of noise was vehicular traffic along CA-88; noise was measured to be between 71 and 75 dBA L_{eq} (average daytime), and 73 and 77 dBA CNEL (24-hour). Refer to Appendix E-1, *Long-Term Measurement Data*; Appendix E-2, *Short-Term Measurement Data*; Appendix E-3, *Field Sheets*; and Appendix E-4, *Field Pictures* for the complete set of noise measurement data, including field sheets and photographs of measurement locations.

3.9.4 Regulatory Setting

This section provides a summary of noise and vibration plans and policies that are relevant to the Proposed Project. Federal, state, and local agencies regulate different aspects of environmental noise.

Generally, the federal government sets noise standards for transportation-related noise sources that are closely linked to interstate commerce. These sources include aircraft, locomotives, and trucks. No federal noise standards are directly applicable to the Proposed Project. The state government sets noise standards for transportation noise sources such as automobiles, light trucks, and motorcycles. No state standards are directly applicable to the Proposed Project either.

Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies. Local general plans provide principles that are intended to guide and influence development plans. The following sections describe policies and regulations that are related to the Proposed Project.

3.9.4.1 State

Caltrans Vibration Guidance

There are no state vibration standards that apply directly to the Proposed Project. As noted in the next section, there are also no quantitative local standards that can be used to assess Proposed Project-related vibration. However, the California

Department of Transportation (Caltrans) has published guidance that provides ground-borne vibration criteria that are useful in establishing thresholds for the analysis of vibration impacts. Specifically, Caltrans' widely referenced *Transportation and Construction Vibration Guidance Manual* (California Department of Transportation 2020) provides guidance for two types of potential impacts: (1) damage to structures and (2) annoyance to people. Guideline criteria for each are provided in Tables 3.9-6 and 3.9-7. Although the Proposed Project would not be subject to Caltrans oversight, these criteria are used for purposes of this analysis, in the absence of other applicable regulatory requirements.

Table 3.9-6. Vibration Damage Potential Threshold Criteria Guidelines

	Maximum PPV (inches per second)	
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation. 2020. *Transportation and Construction Vibration Guidance Manual*. April. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf. Accessed May 20, 2023.
Note: Transient sources create a single, isolated vibration event (e.g., blasting or the use of drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 3.9-7. Vibration Annoyance Potential Criteria Guidelines

	Maximum PPV (inches per second)	
Human Response	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation. 2020. *Transportation and Construction Vibration Guidance Manual*. April. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf. Accessed May 20, 2023.

Note: Transient sources create a single, isolated vibration event (e.g., blasting or the use of drop balls). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

3.9.4.2 Local

Amador County Code

The Amador County Code does not include ordinances specifically related to noise. However, section 9.44.010, *Public nuisance noise*, of the code does include a discussion of noise sources that are considered to be a nuisance. According to the code, “it shall be unlawful for any person to make, continue, or cause to be made or continued, within the limits of the unincorporated county, any disturbing, excessive, or offensive noise which causes discomfort or annoyance to any reasonable person of normal sensitivity.” Note that this only applies to residential uses and does not apply to the operation of commercial or industrial uses. In addition, this does not apply to construction activities.

Amador County General Plan

The Noise Element of the Amador County General Plan, adopted in 2016, includes land use compatibility standards that outline acceptable indoor and outdoor noise levels for various land use categories in the county. In general, the purpose behind land use compatibility standards is to help jurisdictions determine if the existing ambient noise level in a given area would be compatible with a particular developed use. Table 3.9-8 summarizes the compatibility standards in the Amador County General Plan (Table N-3 of the Noise Element).

Table 3.9-8. Land Use Compatibility for Community Noise Environments

Uses	CNEL (dBA) Interior [1,2]	CNEL (dBA) Exterior [3]
Active and passive agricultural operations	N/A	75
Single-family and duplex	45	60
Mobile home park	N/A	60
Multiple-family	45	65
Mixed-Use	45	70
Transient lodging—motels, hotels	45	65
Sports arenas, outdoor spectator sports	N/A	N/A[5]
Auditoriums, concert halls, amphitheaters	45	N/A[5]
Office buildings, business, commercial and professional	N/A	70
Manufacturing, utilities, processing, distribution, storage	N/A	75
Schools, nursing homes, day care facilities, hospitals, convalescent facilities, dormitories	45	65
Government Facilities—offices, fire stations, community buildings	45	N/A
Places of Worship, Churches	45	N/A
Libraries	45	N/A
Playgrounds, neighborhood parks	N/A	70
Utilities	N/A	75
Cemeteries	N/A	75
Mining, managed forestry	N/A	75
Passive Recreation	N/A	75
Golf courses, riding stables, water recreation, cemeteries	N/A	N/A

Notes: N/A = Not Applicable to specified land use category
[1] Interior habitable environment excludes bathrooms, closets and corridors.
[2] Interior noise standards shall be satisfied with windows in the closed position. Mechanical ventilation shall be provided per Uniform Building Code (UBC) requirements.
[3] Exterior noise level standard to be applied at outdoor activity areas. Where the location of an outdoor activity area is unknown or not applicable, the noise standard shall be applied inside the property plane of the receiving land use.

[4] Within the Town Center, Regional Service Center, and SPA land use designations, exterior space standards apply only to common outdoor recreational areas.
[5] Mitigation will be determined on an as-needed basis and to achieve interior noise standards and noise standards of adjacent uses.

As shown in Table 3.9-8, exterior noise levels for single-family and multi-family residential uses are considered compatible with an exterior noise level of 60 and 65 dBA CNEL, respectively.

The Amador County General Plan applies a second set of standards to stationary sources of noise (e.g., HVAC, loading dock activities). These hourly and maximum performance standards (expressed in L_{eq} and L_{max}) for stationary noise sources are designed to protect noise-sensitive land uses adjacent to stationary sources from excessive and continuous noise. Table 3.9-9 (Table N-4 of the Noise Element) summarizes the stationary source noise standards in the Amador County General Plan. These standards represent the acceptable exterior noise levels at the sensitive receptor's property line.

Table 3.9-9. Noise Level Performance Standards for Non-Transportation Noise Sources

Noise Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly Average Level (Leq)	60 dBA	45 dBA
Maximum equivalent Levels (lmax)	75 dBA	65 dBA

Note: Each of the noise levels specified shall be lowered by five decibels for simple tone noises, noises consisting primarily of speech, or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). The noise standard is to be applied at the property planes of the affected land use.

Note that limits or noise standards pertaining to construction noise are not included in the Amador County General Plan. However, the EIR for the Amador County General Plan evaluated potential impacts of construction noise in the county (County of Amador 2016). For the Amador County General Plan EIR noise analysis, a 10-dB over ambient threshold was applied to evaluate the potential for construction noise to result in a substantial temporary increase in noise (noting that a 10-dB increase is perceived as a doubling of loudness). This threshold can reasonably be applied to evaluate construction noise impacts from other projects in the county.

3.9.5 Environmental Effects

Potential impacts of the Proposed Project related to noise are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section XIII, *Noise*, asks whether the Proposed Project would result in any of the following conditions.

a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?

Less than Significant. The following discussion provides supporting information for the determination that the potential noise impacts from construction and operation of the Proposed Project would be less than significant.

Proposed Project Construction

Construction activities generate temporary noise that can increase overall noise levels in the vicinity of a project. Noise generated by construction is generally short-term and varies depending on the type of equipment used, how many pieces of equipment are operating at any one time, the proximity of the equipment to a noise-sensitive receptor, and the duration of the equipment use. The construction period for the Proposed Project is anticipated to be from July 2024 to May 2026, and is proposed to occur between 7:00 a.m. and 5:30 p.m., Monday through Saturday. During the winter months (December through March), construction would only occur for five days per week.

The analysis of construction noise for the Proposed Project considers the equipment that would be required for demolition and construction as identified by PG&E based on the best available information at the time of preparation of this IS/MND. Estimates of combined construction and demolition noise levels are based on reference noise levels from the Federal Highway Administration (FHWA) roadway construction noise model (RCNM) (Federal Highway Administration 2006), and information provided by PG&E.

To estimate reasonable worst-case construction noise (i.e., combined noise from multiple pieces of equipment at a project site), the Federal Transit Administration recommends calculating a combined construction noise level for a given construction phase by combining noise levels from the two loudest pieces of equipment expected to operate simultaneously in roughly the same location. For this analysis, and to ensure a conservative evaluation, noise from the three loudest pieces of equipment expected to operate for a given work activity at a given location and during a given construction phase was combined (assuming simultaneous operation). This combined noise analysis represents a reasonable worst-case scenario.[3] Estimated combined construction noise levels from the reasonable worst-case scenario are compared to measured ambient noise levels near noise-sensitive receptors to predict if construction noise from the proposed project would be expected to exceed applicable thresholds. The nearest sensitive land uses to the Project Area are single-family and multi-family residences. They are located over 2 miles from the Dam area and the Doakes Ridge staging and spoils area, and over 140 feet from the proposed batch plant location. There is also a school (Pioneer Elementary School) located approximately 2,800 feet east of the concrete batch plant site.

The FHWA noise source data used in the construction noise analysis include the A-weighted maximum sound levels (L_{max}) measured at a distance of 50 feet from the construction equipment, as well as the usage factors for the equipment. The usage factor is the percentage of time each piece of construction equipment is typically operating at full power and used to estimate L_{eq} values from L_{max} values. For example, the L_{eq} value for a piece of equipment that operates at full power over 50 percent of the time is three decibels (dB) less than the L_{max} value (Federal Highway Administration 2006).

Project Area

The Proposed Project would be constructed in eight phases and is comprised of five primary work activities. The five primary work activities include tree removal, laydown area development, access road construction, spillway/Dam demolition, and spillway/Dam construction. This construction noise analysis evaluates each activity separately to ensure construction noise impacts to the nearest sensitive use for each area are evaluated. Table 3.9-10 shows a summary of modeled reasonable worst-case construction noise levels by work activity at a reference distance of 50 feet.

Table 3.9-10. Construction Noise Levels by Activity and Construction Area at a Reference Distance of 50 Feet.

Construction Activity	Three Loudest Equipment	Combined Noise level at 50 feet (dBA L_{eq})[a,b]
Tree Removal	Chainsaws (2), Woodchipper	90
Laydown Area Development[c]	Dozer, Telehandler[d], Front-End Loader	81

[3] Overlapping phases occurring within the same area, such as activities that may occur concurrently in the Dam area, were assessed together to determine the worst-case combined equipment noise levels for Proposed Project construction.

Construction Activity	Three Loudest Equipment	Combined Noise level at 50 feet (dBA L_{eq})[a,b]
Access Road Construction	Dozer, Excavator, Compactor	82
Activities for Spillway/Dam Demolition	Concrete Saws (2), Hydraulic Breaker on Excavator	88
Activities for Spillway/Dam Construction	Drill Rig, Generator, Excavator	82

Source: Federal Highway Administration 2006.
Notes:
[a] Noise levels are rounded to the nearest whole number.
[b] Noise levels are based on source noise levels and default utilization rates from the FHWA Roadway Construction Noise Model.
[c] Laydown Area Development includes activities for both the Doakes Ridge staging and spoils site, and Spur 1 staging area.
[d] Noise levels for a telehandler are based on a front end loader.

The five primary construction activities would take place at varying distances from the nearest noise-sensitive receptors, but all would be located over two miles from the nearest receptor. Table 3.9-11 shows the estimated distance from each construction area to the nearest noise-sensitive land use, along with estimated construction noise levels at the nearest sensitive land use from these five areas. More details (including model outputs) of the construction noise modeling for each subphase can be found in Appendix E-5, *Construction Noise Modeling*.

Table 3.9-11. Construction Noise Levels for Main Work Area Activity at the Nearest Sensitive Receptors

Construction Activity/Area	Distance to the Nearest Receptor (miles)	Combined Noise level at the Nearest Receptor [a,b,c]	Combined Noise level at the Nearest Receptor [a,b,d]
Tree Removal	2.3	43	33
Laydown Area Development	2.2	34	24
Access Road Construction	2.7	33	23
Spillway/Dam Demolition	2.9	38	28
Spillway/Dam Construction	2.8	33	23

Notes:
[a] Noise levels are rounded to the nearest whole number.
[b] Geometric attenuation based on a six dB per doubling of distance.
[c] This calculation does not include the effects, if any, of local shielding or ground attenuation from walls, topography, dense vegetation or other barriers that may reduce sound levels further.
[d] This estimated noise levels assumes 10 decibels of reduction from the presence of substantial topography and vegetation existing in the 2+ miles between construction areas and the nearest sensitive land uses.

The loudest construction activity evaluated for the Proposed Project was tree removal activities, based on the construction details and equipment list provided. Regarding tree removal, the three loudest pieces of equipment that would be required during this work would include two chainsaws and a woodchipper. At a reference distance of 50 feet, combined noise from this equipment would be 90 dBA L_{eq}. At the nearest sensitive receptors to this activity (located over 2 miles away), noise from this equipment would be 43 dBA L_{eq} without accounting for attenuation from intervening topography and dense vegetation. These features would likely reduce noise by at least 10 dB, if not more. When accounting for this estimated attenuation, noise from tree removal could be in the range of 33 dBA at the residences over 2 miles from the proposed tree removal areas.

Other construction activities in the Project Area (i.e., at the various locations where Proposed Project construction would occur) would result in lower noise levels at the nearest sensitive uses. For example, the development of the two laydown areas (the Doakes Ridge staging and spoils site, and Spur 1 staging area) would result in an estimated combined noise at 50 feet of approximately 81 dBA L_{eq}.[4] At the nearest

[4] The three loudest pieces of equipment required for the development of these laydown areas include a dozer, telehandler, and front-end loader.

sensitive receptors (located more than 2 miles from the proposed laydown areas), noise from this equipment would be 34 dBA L_{eq}, without accounting for attenuation from intervening topography and dense vegetation. When accounting for the estimated vegetative and topographic attenuation previously described, noise from laydown area development could be in the range of 24 dBA at the residences over 2 miles from the proposed laydown sites.

Construction of access roads (permanent access road to connect Tiger Creek Road and temporary access road to the plunge pool and lower end of the spillway chute) was modeled to result in an estimated noise level of 82 dBA L_{eq}[5] at a reference distance of 50 feet. This noise level would be reduced to an estimated 33 dBA L_{eq} at the nearest residences located approximately 2.7 miles from these sites without accounting for the attenuation from intervening topography and dense vegetation). When accounting for the estimated vegetative and topographic attenuation previously described, noise from access road construction could be in the range of 23 dBA L_{eq} at the residences over 2 miles from this construction area.

Proposed Project-related demolition (which would take place along the existing Dam and proposed temporary cofferdam) was modeled to result in a combined noise level of 88 dBA L_{eq}[6] at a reference distance of 50 feet. This noise level would be reduced to approximately 38 dBA L_{eq} at the nearest sensitive receptors located approximately 2.9 miles away (without accounting for the attenuation from intervening topography and dense vegetation). When accounting for the estimated vegetative and topographic attenuation previously described, noise from Proposed Project demolition could be in the range of 28 dBA L_{eq} at the residences over 2 miles from this construction area.

Construction of the Proposed Project would also include the development of the new spillway structure, crest structure, spillway chute and flip bucket, plunge pool, and temporary cofferdam. At a reference distance of 50 feet, combined noise construction of these features was modeled to be approximately 82 dBA L_{eq}[7]. At the nearest sensitive receptors (over 2.8 miles from this construction area), noise from this equipment would be reduced to approximately 33 dBA L_{eq}.

[5] The three loudest pieces of equipment required for access road construction include a dozer, an excavator, and a compactor.

[6] The three loudest pieces of equipment required during this work include two concrete saws, and a hydraulic breaker attached to an excavator.

[7] The three loudest pieces of equipment required for this work, that would operate simultaneously, include a drill rig, a generator, and an excavator.

As previously described, estimated construction noise levels from Proposed Project construction phases and areas were modeled to be in the range of 23 to 33 dBA L_{eq} at the nearest sensitive receptors when accounting for distance attenuation, and when including approximately 10 dB of reduction for dense vegetation and topography over a 2-mile distance. Ambient noise levels near the closest residences were measured to be as low as 47 dBA L_{eq}[8] with average daytime noise levels in the range of 54 to 56 dBA L_{eq}. As noise from Proposed Project construction activities at the various construction areas would be approximately 14 to 24 dB lower than the lowest daytime hourly L_{eq} measured near these residences, construction noise from the Proposed Project is not expected to result in a 10-dB or greater increase in ambient noise levels at the closest noise-sensitive land uses. Therefore, potential construction noise impacts would be less than significant.

Mobile Batch Plant

Noise associated with the mobile batch plant at the Cedar Mill laydown area was estimated based on measured source noise levels at other concrete batch plants and standard noise modeling equations. The mobile batch plant would be operational three days per week and up to six hours per day from November 2024 to February 2026. Batch plant operations would typically begin at 8:00 a.m.; on a worst-case day, the batch plant may begin operations at 7:00 a.m. The batch plant would never operate during nighttime or early morning hours.

Based on source noise data for concrete batch plants, it is assumed that the batch plant equipment would have a sound level of 85 dBA 1-hour L_{eq} at 50 feet[9] assuming up to 100 percent equipment use during operational hours. The perimeter of the batch plant is located more than 150 feet from the nearest noise-sensitive land use (a residential structure across SR 88). Most batch plant activities would take place farther from this residence and from other noise-sensitive land uses. Therefore, batch plant noise is estimated at the acoustical average distance from the nearest off-site residence.

The acoustical average distance is used to represent noise sources that are mobile or distributed over an area (such as the proposed batch plant). It is calculated by

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[8] Lowest daytime ambient noise measurement for LT-4 (47.3 dBA L_{eq}). Construction is proposed to occur between 7:00 a.m. and 5:30 p.m., Daytime L_{eq} noise levels are defined as the hours of 7:00 a.m. to 6:00 p.m.

[9] Based on reference noise measurement data for a concrete batch plant conducted on August 15, 2006. Measurement conducted at an operational concrete batch plant in the City of Gardena. Refer to Appendix E-7, *Batch Plant Noise Data and Modeling*, for additional details regarding the concrete batch plant source noise level.

multiplying the shortest distance between the receiver and the noise source area (the closest edge of the batch plant site) by the farthest distance (the furthest corner of the site), and then taking the square root of the product. The acoustical average distance between the batch plant site and the nearest receptors (the residences to the east) is approximately 280 feet.[10]

Using the acoustical average distance of 280 feet between batch plant activities and the nearest residence, daytime batch plant construction noise could be up to approximately 70 dBA L_{eq} at the nearby residence. Refer to Table 3.9-12 for estimated batch plant noise levels at varying distances. Noise levels at residences or other sensitive uses (such as the Pioneer Elementary School) located farther from the Cedar Mill staging area would be lower.

Table 3.9-12. Batch Plant Noise by Distance

Distance	Calculated Leq Sound Level (dBA)
50	85
100	79
150	76
200	73
275	**70**
300	70
500	65
1000	59
2000	53
3,100[a]	49

Bold text denotes the acoustical average distance used in this analysis to assess construction noise at the nearest residences.
[a] The acoustical average distance between the Cedar Mill laydown area (concrete batch site) and Pioneer Elementary School is approximately 3,100 feet.

The existing average daytime ambient noise level near the residences across SR 88 from the Cedar Mill staging area (LT-5 in Table 3.9-5) was measured to be between 71 and 72 dBA L_{eq} (average daytime). Therefore, the estimated batch plant noise

[10] The acoustical average distance was calculated by multiplying the shortest distance between the nearest receiver (residential property) and the batch plant (150 feet) by the farthest distance (the southwestern corner of the batch plant site, approximately 522 feet), and then taking the square root of the product. The acoustical average distance was calculated to be 280 feet.

level of up to 70 dBA L_{eq} would have the potential to increase this existing ambient noise level by approximately 3 dB, resulting in an overall (existing ambient plus batch plant) noise level of approximately 74 dBA L_{eq} (refer to Table 3.9-3 for the rules for combining sound levels and information regarding decibel addition). As a 10-dB or greater increase over ambient is not predicted to occur at nearby noise-sensitive land uses due to batch plant activities, and because batch plant activities would only take place for six hours per day on three days per week during daytime hours only, temporary batch plant noise during Proposed Project construction would be less than significant.

Haul Truck Noise

Construction heavy truck (haul, tree, or vendor truck) noise was also analyzed for the Proposed Project. The Amador County Code does not include a specific threshold that pertains to construction heavy truck noise. Therefore, heavy truck noise was assessed by modeling haul truck noise along Proposed Project haul routes, adding modeled heavy truck noise to existing baseline (measured) noise levels along haul routes, and comparing the baseline noise to baseline plus heavy truck noise. Heavy truck noise impacts are identified if the addition of Proposed Project haul truck trips on roadway segments with residential uses in the Project Area would result in a three-dB increase (considered to be “barely perceptible”) in noise. PG&E provided the anticipated number of worst-case daily heavy truck trips by segment, as well as route information for these trips. All haul truck and heavy truck trips would take place during daytime hours.

Based on provided Proposed Project construction information from PG&E, construction would involve up to 38 one-way heavy truck trips per worst-case day. These would most likely be split between Spur 1 and Tiger Creek Road, with an estimated 28 one-way heavy truck trips per worst-case-day on Spur 1 and up to 10 one-way heavy truck trips per worst-case day on Tiger Creek Road. However, to ensure a conservative analysis, this evaluation assumed up to 38 (or all) one-way heavy truck trips could occur on Spur 1 and 10 could occur on Tiger Creek Road. In addition, note that during many construction days, there would be fewer truck trips. However, the worst-case day is evaluated to provide a conservative analysis. The temporary addition of up to 38 one-way haul trucks per day on Spur 1 and up to 10 one-way heavy truck trips per day on Tiger Creek Road was conservatively evaluated to determine if heavy truck activity would result in substantial increases to the ambient noise levels. Modeling assumed the nearest sensitive use could be within 50 feet of the roadway centerline for proposed haul routes, which is a conservative assumption as most residences are located more than 50 feet from the roadway centerline along proposed haul routes. Refer to Table 3.9-13 for the results of the haul truck noise modeling results.

Table 3.9-13. Existing (Measured) and Existing plus Haul Truck Noise Levels

Roadway	Segment	Assumed Speed (mph)	Truck Trips on Segment (per day)	Representative Noise Measurement	Approximate Measured Noise levels (dBA CNEL)	Haul Truck Noise Only (dBA Ldn)	Existing plus Haul Truck Trip Noise Level (dBA Ldn)	Haul Truck–Related Increase
Tiger Creek Road	West of Power House	25	10	LT-4	55	46.6	55.6	0.6
Tiger Creek Road	East of Power House	15	10	LT-4	55	47.9	55.8	0.8
Spur 1	West of PG&E Gate	25	38	LT-3	56	50.3	57.0	1.0
Spur 1	East of PG&E Gate	15	38	LT-3	56	51.7	57.4	1.4

Refer to Appendix E-6, *Construction Haul Truck Noise Modeling*, for more details related to heavy truck noise modeling.

As shown in Table 3.9-13, heavy truck noise modeling results demonstrated that truck traffic could result in temporary increases in ambient noise along haul routes in the range of 0.6 to 1.4 dB. As all haul/heavy truck-related noise increase would be below the three-dB “barely perceptible” criteria applied to truck noise, potential impacts related to heavy truck trips during Proposed Project construction would be less than significant.

Proposed Project Operations

After construction of the Proposed Project, PG&E would continue to operate the Reservoir as was done prior to the Proposed Project. In addition, there would be no new noise-generating stationary equipment installed. The only subtle difference in Proposed Project operations and maintenance that could be relevant to noise is that maintenance access for the Dam, spillway, and log boom could occur from either the existing access roads at the south side of the Dam, or the new permanent access road at the north side of the Dam.

However, note that the new permanent access road is over 2.5 miles from the nearest noise-sensitive land use. Therefore, once construction is complete, noise from Proposed Project operations and maintenance at the nearest sensitive land uses would be similar to noise from operations and maintenance prior to Proposed Project implementation, and would likely be inaudible. Potential operational noise impacts from the Proposed Project would be less than significant.

b. Generate excessive groundborne vibration or groundborne noise levels?

Less than Significant. The following discussion provides supporting information for the determination that the potential vibration-related damage and annoyance impacts from implementation of the Proposed Project would be less than significant.

Vibration from construction-related activities at the Dam area and laydown areas along with the batch plant is evaluated to determine if potential impacts related to structural damage or human annoyance/sleep disturbance would be expected to occur. Vibration levels at nearby receptors from construction activities are calculated using the source vibration levels and attenuation equation of $PPV = PPV_{ref} \times (25/distance)^{1.5}$ from the Federal Transit Administration guidance.[11] The calculated values are then compared to the Caltrans structural damage criteria, which vary according to structure type, and the Caltrans annoyance criteria. These criteria are shown in Table 3.9-6 and 3.9-7 (presented previously). Typical vibration levels associated with heavy-duty construction equipment that may be used for the Proposed Project are shown in Table 3.9-14 at a reference distance of 25 feet, and other distances.

[11] *Ibid*.

Table 3.9-14. Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 Feet	PPV at 50 Feet	PPV at 100 Feet	PPV at 200 Feet	PPV at 500 Feet	PPV at 750 Feet
Vibratory roller	0.210	0.074	0.026	0.009	0.002	0.001
Auger drill	0.089	0.031	0.011	0.004	0.001	0.001
Hoe ram[a]	0.089	0.031	0.011	0.004	0.001	0.001
Large bulldozer	0.089	0.031	0.011	0.004	0.001	0.001
Loaded trucks	0.076	0.027	0.010	0.003	0.001	0.000
Jackhammer	0.035	0.012	0.004	0.002	0.000	0.000
Small bulldozer	0.003	0.001	0.000	0.000	0.000	0.000

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, FTA Report No. 0123, 2018, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed March 15, 2023.
[a] Representative of a hydraulic hammer.

Tiger Creek Regulator Dam Area, New Access Roads, and Laydown Areas

There are no off-site structures located near the Dam area, new access road areas, or laydown areas. As shown in Table 3.9-14, vibration from all proposed construction equipment would be below the Caltrans damage criteria for all building types shown in Table 3.9-6 at a distance of 200 feet. In addition, it is unlikely that any “extremely fragile historic buildings, ruins, ancient monuments” or “fragile buildings” would be present in the Area of Analysis. Most nearby buildings would be categorized as either “historic and some old buildings,” “older residential structures” or “modern industrial/commercial buildings.” In addition, the nearest off-site structures are located much farther than 200 feet from the Dam area, new access roads, and laydown areas; the nearest residence is located over 2 miles from these Proposed Project features. Therefore, because vibration would be well below any damage impact criteria at the nearest off-site existing structures, the potential vibration-related damage impacts from construction activities near the Dam area, new access roads, and laydown areas would be less than significant.

Regarding annoyance impacts, vibration-related annoyance from construction is typically considered significant if it would be “strongly perceptible” (0.1 PPV in/sec, as shown in Table 3.9-7) during nighttime hours, when people generally sleep. All construction activities for the Proposed Project would take place during daytime hours. In addition, the nearest residential structure is located over two miles from the Dam area, new access roads, and laydown areas. As shown in Table 3.9-14, vibration levels from Proposed Project construction equipment would be below the strongly perceptible level at distances of approximately 200 feet and greater. Therefore, because Proposed Project construction would only take place during daytime hours and would result in vibration levels well below the perceptibility criteria in Table 3.9-7, the potential vibration-related annoyance impacts from construction activities near the Dam area, new access roads, and laydown areas would be less than significant.

In conclusion, construction equipment proposed for use at the Dam area, new access road areas, and laydown areas would not be expected to result in vibration levels in excess of any damage or annoyance criteria, and the potential impacts for vibration-related annoyance and damage from construction at these areas would be less than significant.

Mobile Batch Plant Site

Regarding the batch plant, the most vibration-intensive equipment proposed for use at this site would be a loader. Although other noise-generating equipment would be located at this site, most equipment used at the batch plant location would not impart energy in the ground (in the same way a pile driver, auger drill, or excavator would) and would not generate perceptible levels of vibration. A loader also does not impart substantial energy into the ground and generates relatively low vibration levels. Conservatively assuming a loader could generate vibration levels similar to a small bulldozer, the vibration level from activities at the batch plant can be estimated. The closest off-site structure is 150 feet from the proposed batch plant location. At this distance, the vibration level from a small bulldozer would be below 0.0002 PPV in/sec. The estimated vibration level of 0.0002 PPV in/sec is orders of magnitude below the damage impact criteria for all building types shown in Table 3.9-6. Therefore, the potential vibration-related damage impacts from the batch plant site would be less than significant.

Regarding annoyance impacts, vibration-related annoyance from construction is typically considered significant if it would be “strongly perceptible” (0.1 PPV in/sec, as shown in Table 3.9-7) during nighttime hours, when people generally sleep. All construction activities for the Proposed Project, including all batch plant activities, would take place during daytime hours. In addition, the estimated vibration level from batch plant activities previously cited (0.0002 PPV in/sec) is well below the strongly perceptible level of 0.1 PPV in/sec. Therefore, because batch plant activities would only take place during daytime hours and would result in vibration levels well below the perceptibility criteria contained in Table 3.9-7, the potential vibration-related annoyance impacts from the batch plant site would be less than significant.

In conclusion, batch plant equipment would not be expected to result in vibration levels in excess of any damage or annoyance criteria, and would not be used during nighttime hours when people are more sensitive to vibration. The potential vibration-related annoyance and damage impacts from the batch plant would be less than significant.

c. Be 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 and expose people residing or working in the project area to excessive noise levels?

No Impact. There are no private airstrips or public use airports in the vicinity of the Project Area. The nearest airport or airstrip to the Project Area is the Amador County Airport, which is located 12.5 miles east of the proposed batch plant and 19.5 miles east of the Dam area. In addition, the Proposed Project would not result in the development of any new residential land uses, nor would it result in increases in aircraft noise in the area. For these reasons, there would be no potential impact related to the exposure of persons to excessive aircraft noise.

3.10 Hazards and Hazardous Materials

3.10.1 Introduction

This section analyzes the Proposed Project's potential impacts related to hazards and hazardous materials. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for hazards and hazardous materials, and it analyzes the potential for the Proposed Project to affect these resources.

3.10.2 Area of Analysis

The Project Area is characterized as remote and is situated in a narrow valley in the Sierra Nevada foothills surrounded by mixed conifer forest. The Area of Analysis for hazards and hazardous materials is divided into two parts of the Project Area. The spillway construction area of analysis encompasses the Dam area and Doakes Ridge staging and spoils site (Parts A and B, respectively, on Figure 2-1, *Project Location*). The Cedar Mill area of analysis consists of the Cedar Mill staging area (Part C in Figure 2-1). The Area of Analysis includes a 0.5-mile-wide buffer zone for potential impacts not associated with airports. To evaluate potential impacts related to airports, the buffer zone width was extended to two miles.

3.10.3 Existing Conditions

This section discusses the existing conditions related to hazards and hazardous materials in the Area of Analysis.

3.10.3.1 Schools

No schools are located within or near the spillway construction area of analysis. The nearest school, Pioneer Montessori School in the community of Pioneer, is more than 7.5 miles southwest of the Dam. However, the westernmost portion of the Cedar Mill area of analysis is located approximately 0.25 mile east of Pioneer Montessori School. The proposed mobile batch plant would be located approximately 0.54 mile east of the school. No new schools are planned. On May 24, 2022, the Amador County Unified School District Board of Trustees voted to approve combining two high schools into one consolidated high school and two junior high schools into one consolidated junior high school. (Amador County n.d.).

3.10.3.2 Known Sources of Hazardous Materials

The California Department of Toxic Substances Control's EnviroStor database provides access to detailed information on hazardous waste facilities in California, including permitted activities, and corrective actions for site cleanup. According to the EnviroStor database, the nearest potentially hazardous site to the Reservoir is a leaking underground storage tank (LUST) cleanup site at Sierra Trading Post-Buckhorn Station in Pioneer, approximately five miles southwest of the Reservoir (California Department of Toxic Substances Control 2023). Another LUST cleanup site, P&M Cedar, is located on SR 88 adjacent to the Cedar Mill area of analysis. This site involved a gasoline discharge from a leaking tank in 1992. The spill has since been cleaned up and the case was closed on January 10, 2003 (California Department of Toxic Substances Control 2023).

3.10.3.3 Airports

The nearest public airports are the county-owned, public-use Amador County Airport, which is more than 20 miles west of the Project Area, and the Placerville Airport, located 23 miles northwest of the Project Area. The closest private airport is Howard Airport in the city of Ione located approximately 29 miles southwest of the Project Area. The Project Area is not in the plan area for an airport land use plan.

3.10.3.4 Wildland Fires

CAL FIRE identifies fire hazard severity zones (FHSZ) within both State Responsibility Areas (SRA) and Local Responsibility Areas (LRA) and maps these severity zones based on modeling of expected fire behavior over a 30–50 year period. The categories of FHSZs are "very high," "high," and "moderate." The Area of Analysis, including staging areas, falls within an SRA categorized as a very high FHSZ (California Department of Forestry and Fire Protection 2007). Additional information regarding existing conditions for wildland fires is presented in Section 3.15 *Wildfire*.

3.10.4 Regulatory Setting

3.10.4.1 Local

Amador County General Plan

Amador County has adopted goals and policies related to hazards and hazardous materials. The Amador County General Plan Safety Element addresses hazards that are known to have potential for causing injury to people or damaging property, including fire and hazardous materials (Amador County 2016). The following relevant goals and policies address natural and human-made hazards:

- **Goal S-2:** Reduce fire risks to current and future structures;
  - **Policy S-2.1:** Consistent with state regulations and local code requirements, require new buildings to be constructed to provide fire-defensible spaces, separated from property lines and other buildings on the same or adjacent properties by adequate building setbacks clear of brush and fuel. Require new buildings in areas of moderate to high fire risk to be constructed using building materials and designs that increase fire resistance;
  - **Policy S-2.3:** Incorporate fire safety site planning techniques within new development applications in high- or very-high fire risk areas. Encourage building envelope or cluster development techniques to increase defensible areas;
- **Goal S-7:** Respond appropriately and efficiently to natural or human-caused emergencies;
  - **Policy S-7.2:** Continue to coordinate with other local public safety and law enforcement agencies to ensure effective emergency response;
  - **Policy S-7.3:** Work with other agencies to designate evacuation routes for various natural or human-caused emergencies; and
  - **Policy S-7.4:** Maintain the operational integrity of essential public facilities during emergencies, including flood emergencies.

Amador County Emergency Operations Plan

The Amador County Emergency Operations Plan is the primary document that discusses how disasters will be managed. This plan is currently under revision (Amador County 2018). The Project Area is outside the designated Amador County Evacuation Routes (Amador County Transportation Commission 2021).

3.10.5 Environmental Effects

Potential impacts of the Proposed Project related to hazards and hazardous materials are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section IX, Hazards and Hazardous Materials, asks whether the Proposed Project would result in any of the following conditions.

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

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant. Activities associated with the Proposed Project would involve use of hazardous materials, such as fuels and lubricants, for the operation of equipment and vehicles, primarily during construction. Fuels and lubricants have the potential to be released into the environment at construction sites and along haul routes, causing potential environmental and human exposure to these hazards. Although the types and quantities of hazardous materials that would be used during Proposed Project construction are not considered acutely hazardous and would not pose a risk to human health or safety, release of hazardous materials without subsequent containment could create a hazardous condition for the environment. Implementation of a SWPPP, described in Section 2.6 *Best Management Practices*, under BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans*, and BMP-2: *Implement Hazardous Materials Control Measures*, will ensure that hazardous materials are properly used and contained and that any spills are promptly cleaned up. This potential impact would be less than significant.

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

Less than Significant. As described in Section 3.10.3 *Existing Conditions*, the spillway construction area of analysis is not near an existing or proposed school. The nearest school is more than 7.5 miles from the Dam spillway but is located within 0.25 mile of the Cedar Mill area of analysis and just over 0.5 mile from the proposed mobile batch plant. Construction activities at the Cedar Mill staging area could result in the release of hazardous emissions or entail the use of hazardous materials, substances, or waste. In particular, the mobile batch plant would also generate dust and particulate matter from diesel trucks hauling materials and equipment. However, as discussed in Section 3.6 *Air Quality*, analysis showed the risk of dust and particulate matter posing a significant health risk to sensitive receptors (including schools) was less than significant.

Additionally, due to the distance from the mobile batch plant (0.5 mile) it is unlikely that emissions or hazardous materials generated during use of the Cedar Mill staging area would travel 0.25–0.5 mile to reach the nearest school. Lastly, implementation of BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans;* BMP-2: *Implement Hazardous Materials Control Measures;* and BMP-6: *Implement Fugitive Dust Abatement Measures*, will further reduce the potential of the Proposed Project to emit emissions or hazardous materials near a school. This potential impact would be less than significant.

d. Be located on a site that 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. As described in Section 3.10.3 *Existing Conditions*, the nearest known hazardous materials site is approximately five miles from the spillway construction area of analysis. One site near the Cedar Mill area of analysis involved a gasoline spill that was cleaned up, and the case was closed as of 2003. Thus, the Proposed Project would not be on a site included on a list of hazardous materials sites. There would be no potential impact.

e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. As described in Section 3.10.3 *Existing Conditions*, the Project Area is not in an airport land use plan area or within two miles of a public or public use airport. There would be no potential impact.

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

Less than Significant. As described in Section 3.10.4 *Regulatory Setting*, the Project Area is not covered in Amador County’s adopted or proposed community evacuation plans. During construction, PG&E will implement BMP-4: *Implement Traffic Control Plan*, which would reduce potential conflicts on roadways by notifying the public of construction activities and keeping roadways as clear as possible to ensure adequate traffic flow for emergency vehicles. This potential impact would be less than significant.

g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Less than Significant. The Project Area is in a very high FHSZ and, therefore, the risk of wildfire does exist. However, public access to the Project Area would be closed during construction of the Proposed Project. There are no residences within or adjacent to the Project Area. The most likely source of wildland fire ignition from the Proposed Project would be associated with operation of construction vehicles or welding equipment in the Project Area under dry conditions. As part of the Proposed Project, PG&E will implement BMP-3: *Implement Fire Hazard Prevention Measures*, which would ensure that the potential for wildland fire caused by the project is minimized or eliminated. This potential impact would be less than significant.

For further discussion about the Proposed Project's potential impacts related to wildfire, see Section 3.15 *Wildfire.*

3.11 Cultural Resources

3.11.1 Introduction

This section analyzes the Proposed Project's potential impacts related to cultural resources. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for cultural resources, and it analyzes the potential for the Proposed Project to affect these resources.

3.11.2 Area of Analysis

The Area of Analysis for the Proposed Project was established in consultation with Starla Lane (PG&E Senior Cultural Resources Specialist).

The Area of Analysis for built-environment resources includes only those project construction activities that have the potential to affect built-environment resources shown in Figure 3.11-1. The built-environment Area of Analysis includes the existing spillway and the right abutment spillway construction area, which includes the intake, the Dam notch, the spillway chute, the flip bucket, and plunge pool. The Proposed Project activities in the potential staging areas include temporary staging and parking on already cleared or paved areas. The staging areas have no potential to affect built-environment resources.

The Area of Analysis for archaeology consists of both the horizontal and vertical maximum potential extent of direct impacts resulting from the Proposed Project. The horizontal Area of Analysis encompasses the project footprint and includes those areas of new construction, easements, and construction staging of the Proposed Project as shown in Figure 3.11-1. The vertical Area of Analysis is the maximum extent of ground disturbance within the horizontal Area of Analysis (i.e., ground surface to maximum depth of soil disturbance) and varies by project component.

3.11.3 Existing Conditions

3.11.3.1 Archaeological Context

Five periods of prehistory have been described for the Mokelumne Watershed, each characterized by distinct settlement and subsistence patterns and technological innovation (Table 3.11-1).

Table 3.11-1. Chronology of the West-Central Sierra Nevada

Period	Age Range (Calendar Years Before Present)
Recent Prehistoric II	610–100
Recent Prehistoric I	1,100–610
Late Archaic	3,000–1,100
Middle Archaic	7,000–3,000
Early Archaic	11,500–7,000

3.11.3.2 Ethnographic Context

The primary group associated with the region in which the Area of Analysis is located is the Northern Sierra Miwok. The term Sierra Miwok designates a separate linguistic group within the Eastern Miwok that also includes the Bay and Plains Miwok. The Eastern Miwok is one of the two major divisions in the Miwokan subgroup of the Utian language family. According to Levy (1978) the Eastern Miwok originally spoke the same language; however, due to years of separation and expansion, the Plains Miwok language separated from the Bay Miwok language approximately 2,500 years ago, and the Sierra Miwok separated from the Plains Miwok language 500 years ago. It is believed that the Miwok in the eastern end of the Sierra Nevada were some of the more recent occupants and speakers of the Miwok language, speaking the Eastern Miwok language for a span of 800 years (Levy 1978).

The following is summarized from Levy (1978). Broken down into the separate regions, the Northern Sierra Miwok inhabited the area between the Cosumnes and Calaveras Rivers, the Central Sierra Miwok were between the Calaveras and Tuolumne Rivers, and the Southern Sierra Miwok were located just north of the Merced River, down to the Fresno River. All three territories spanned approximately 40 miles from the foothills in the west to the central portion of the Sierra Nevada.

The primary political unit of the Miwok was the tribelet. Composed of several semisedentary settlements and numerous seasonally occupied camps, the tribelet represented an independent, sovereign nation that defined and defended a territory. Lineage was also of political significance, consisting of local groups named for a specific geographic locality, usually a permanent settlement. However, the names and numbers of such lineage settlements remain for the most part unknown, largely because of the depopulation or relocation of the Miwok during the nineteenth century.

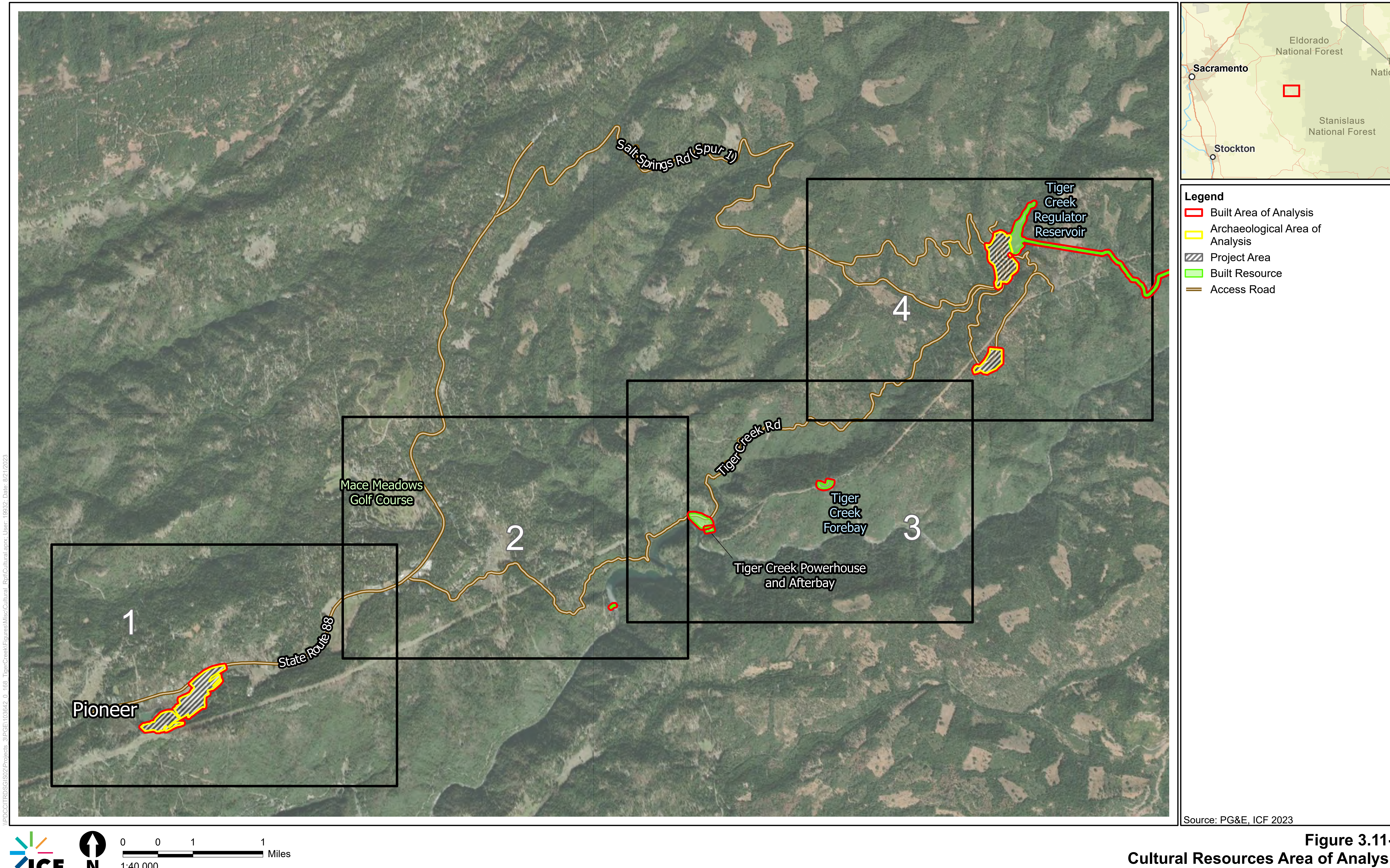

Figure 3.11-1
Cultural Resources Area of Analysis Index

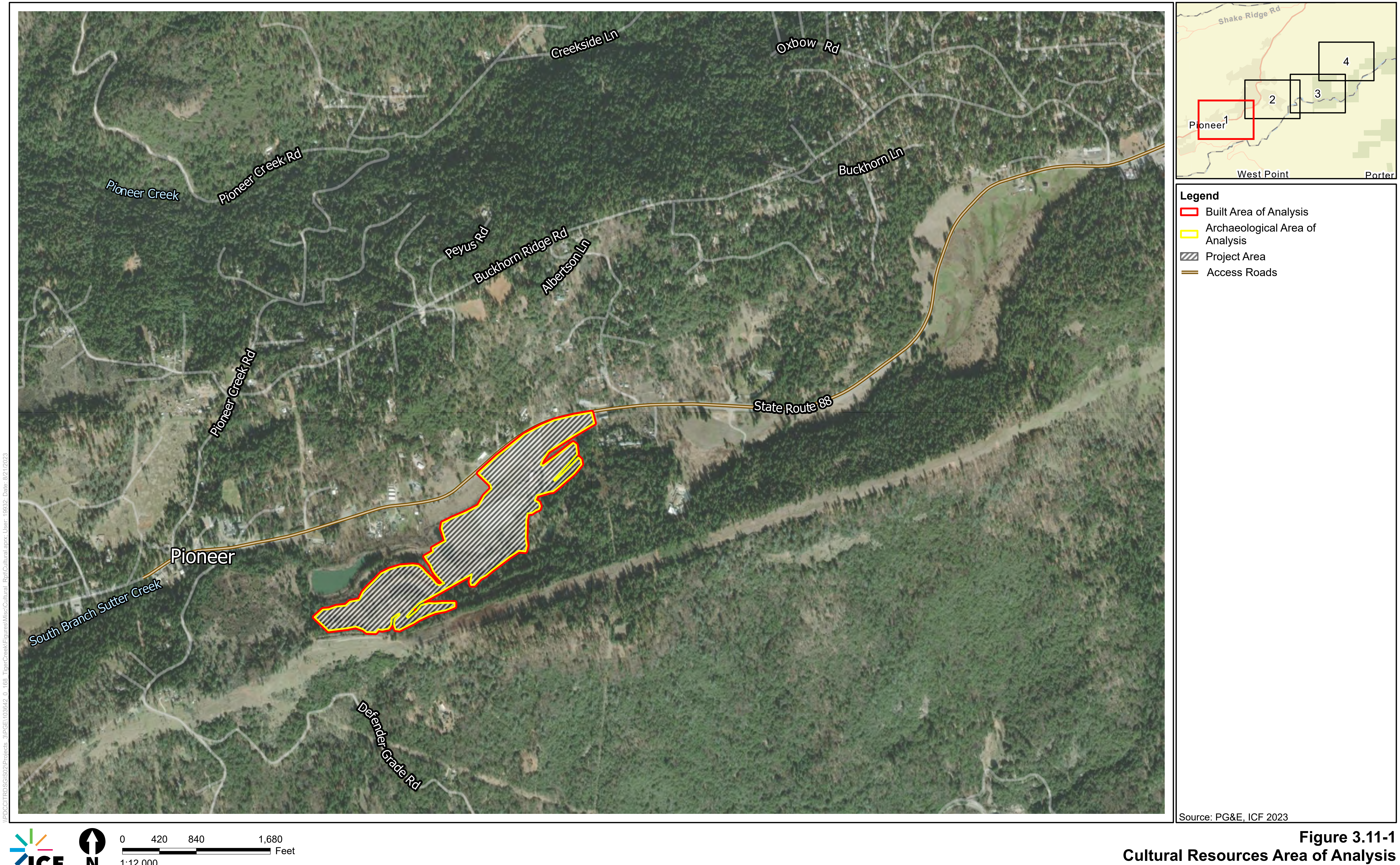

Figure 3.11-1
Cultural Resources Area of Analysis
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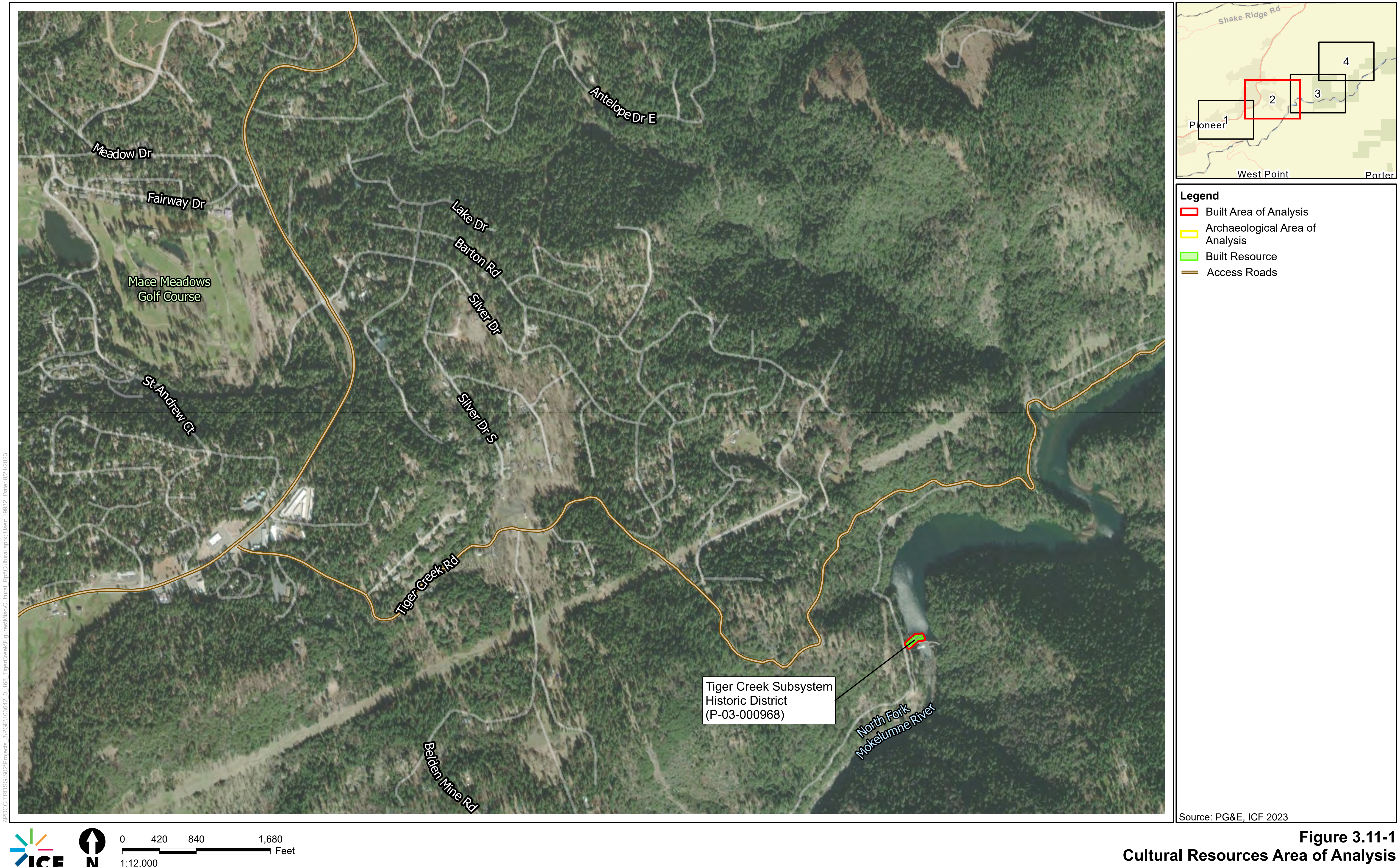

Figure 3.11-1
Cultural Resources Area of Analysis
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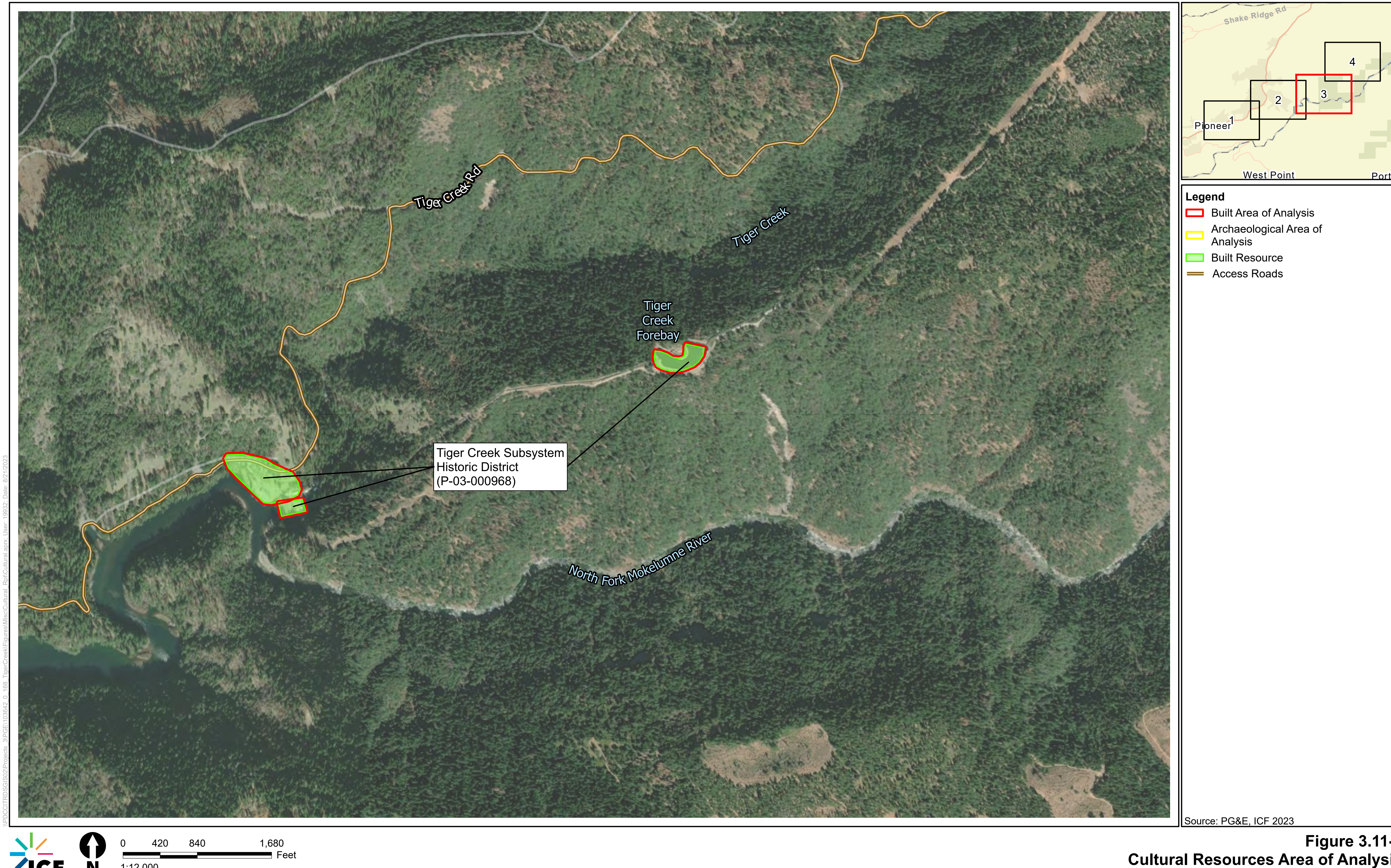

Figure 3.11-1
Cultural Resources Area of Analysis
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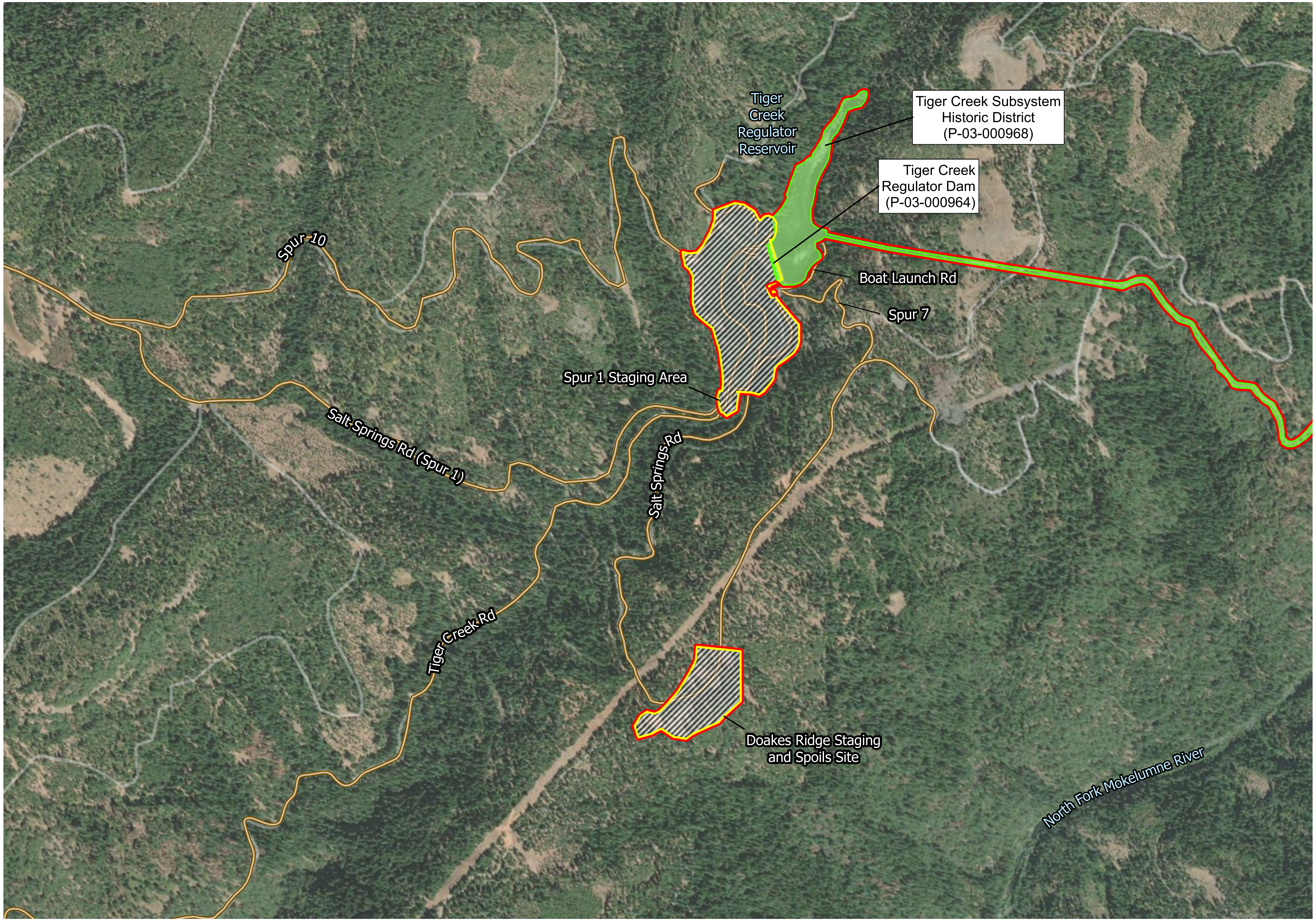

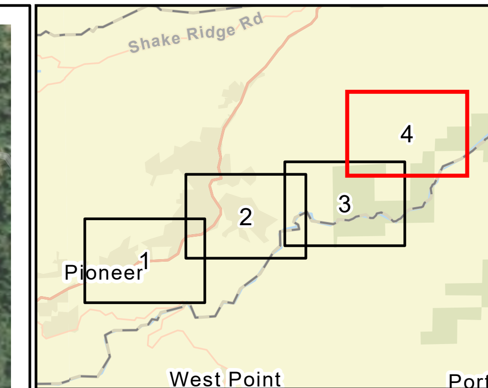

Legend

- Built Area of Analysis
- Archaeological Area of Analysis
- Project Area
- Built Resource
- Access Roads

Source: PG&E, ICF 2023

0 420 840 1,680 Feet
1:12,000

N

ICF

Figure 3.11-1
Cultural Resources Area of Analysis
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The basic subsistence strategy of the Sierra Miwok was mobile hunting and gathering. This strategy was motivated by seasonal variations in resource availability, which forced the Miwok to exploit resources outside the immediate vicinity of their permanent settlements. Of the vegetal resources gathered, numerous varieties of acorns were highly sought after and widely harvested. Nuts such as buckeye, sugar pine, and foothill pine nuts were collected and stored to augment any unexpected poor acorn harvest. Seeds, roots, and various green plants served to round out the bulk of the vegetal resources exploited by the Miwok.

The Miwok hunted, trapped, and fished for numerous varieties and combinations of resources throughout the mountain regions, foothills, and plains. Because the Miwok tended to live in geographically distinct regions, each group placed higher premiums on more locally obtainable resources. Some of the more prized game animals hunted by the Sierra Nevada groups were bear species and, at lower elevations, deer and elk. The Miwok also hunted and trapped smaller mammals (e.g., rodents) as well as waterfowl and other birds to supplement their diet.

Miwok technology included bone, stone, antler, wood, and textile tools. Hunting was accomplished using the bow and arrow as well as traps and snares. Basketry items included seed beaters; cradles; sifters; rackets used in ball games; and baskets for storing, winnowing, parching, and carrying burdens. Other textiles included mats and cordage.

The Sierra Miwok constructed four types of structures. Conical structures of bark were used in the mountains, whereas those built from tule matting were more common in the lower elevations of the central Sierra Nevada. Semisubterranean earth-covered dwellings served as winter homes. Also located within Miwok settlements were acorn granaries, menstrual huts, sweathouses, conical grinding huts over bedrock mortars, and two types of assembly houses. Large semisubterranean structures were the focal point of ritual and social gatherings. Circular brush structures were used for mourning ceremonies in summer months.

With the arrival of trappers, gold miners, and settlers to the region, the Miwok suffered exposure to new varieties of introduced diseases. Although this early contact with settlers had a destructive impact on the Miwok population, relationships with settlers varied. Although there was some hostility between the Sierra Miwok and miners, some of the Plains Miwok became involved in agricultural operations on the large land grants then being established. After the United States annexed California, some of the Miwok were displaced to Central Valley locations, yet many remained on the rancherias located in the Sierra Nevada foothills. During the final decades of the nineteenth century and the early twentieth century, the Miwok living on the foothill rancherias adapted to a new lifestyle. Subsistence through hunting and gathering was now augmented by seasonal wage labor on ranches and farms. As the reliance on cash income increased, traditional subsistence practices suffered. Numerous people of Miwok descent still survive and maintain strong communities and action-oriented organizations.

3.11.3.3 History

The history of the Mokelumne River hydroelectric system began in mining, not electric power generation. Water rights acquired during the early gold and silver booms in the Sierra Nevada established the foundation of a system of dams and canals whose purpose evolved from local mining to city water consumption to hydroelectric generation. From the early basic foundation, engineers spent the next 150 years expanding the system to wrest every drop out of their rights to the watershed. The complete engineering plan for the system dates to 1930, when PG&E engineer A. H. Mark Wart set forth the path for future development. His plans for Bear River, Electra, and West Point Powerhouses were subsequently realized by his protégées, I. C. Steele, Walter Dreyer, T. J. Corwin, and G. C. Green. The Mokelumne is somewhat unique among PG&E’s projects in California simply for the number of diversions from small tributaries to the Mokelumne River, including diversions from the Bear River, Deer Creek, Tiger Creek, and Cole Creek (PAR Environmental Services, Inc. 2003:17).

The Tiger Creek portion of the Mokelumne River Hydroelectric System stands alone as an independent entity from the system as a whole, possessing its own storage reservoir, dams, conduit, and powerhouses. The Tiger Creek Subsystem extends from the eastern shore of Salt Springs Reservoir in Amador County to the afterbay of the Tiger Creek Powerhouse in Amador and Calaveras Counties. PG&E started planning construction in the late 1920s, with actual groundbreaking beginning in 1930, a time during the Great Depression when most construction in the United States was put on hold. This massive project entailed two powerhouses and camps, four dams, and a complex conduit system. The canal and conduit system diverts water from Cole Creek, Bear River, East Panther Creek, West Panther Creek, and Tiger Creek, including upstream reservoirs. The Tiger Creek Subsystem was an ambitious building project implemented during a time of great economic uncertainty. It employed hundreds of men and numerous subcontractors and materials suppliers, helping relieve the financial stress in the region and exuding confidence in a time of doubt. Electricity from the Salt Springs and Tiger Creek Powerhouses began reaching San Francisco by 1932. Since then, PG&E has performed regular maintenance and upgrades on the subsystem (PAR Environmental Services, Inc. 2002a:1).

The Dam is an Ambursen reinforced concrete slab and buttress dam. Its crest structure is 100 feet high and 470 feet long. The Reservoir provides regulation flows to Tiger Creek Powerhouse approximately 3 miles to the southwest via an open canal (the Lower Tiger Creek Conduit) to Tiger Creek Forebay. The unusual spillway arrangement consists of a 20-foot by 24-foot concrete open channel leading to three siphons and an open weir. In 1987, the three spillway siphons were modified to prevent air from breaking the siphoning effect. A sheet metal hood was added to the siphon breaker air inlet to lower the air inlet elevation and prevent the siphon breaker operation of alternating flows of air and water causing structure vibration and a decrease in the siphon's discharge. A gate valve was also added at the outlet to provide better control of the Dam's discharge (PAR Environmental Services, Inc. 2002b:1–2).

3.11.4 Regulatory Setting

3.11.4.1 Federal

The following federal regulation related to cultural resources would apply to the Proposed Project.

National Historic Preservation Act

Section 106 of the NHPA (16 USC 470f) requires federal agencies to evaluate the effects of their undertakings on historic properties, which are those properties listed or eligible for listing on the National Register of Historic Places (NRHP). Implementing regulations at 36 CFR Part 800 require that federal agencies, in consultation with the SHPO, identify historic properties within the area of potential effect of a proposed project and make an assessment of effects if any are identified. If a project is determined to have an adverse effect on historic properties, the federal agency is required to consult further with SHPO and the Advisory Council on Historic Preservation (ACHP) to develop methods to resolve the adverse effects. USACE's issuance of a CWA section 404 permit for the Proposed Project constitutes an undertaking as defined by 36 CFR 800.16(y) and triggers compliance with section 106 of the NHPA. Other federal regulations applicable to the Proposed Project could also require compliance with section 106 of the NHPA, including CWA section 401 permits and FERC license amendments.

FERC, ACHP, SHPO, USFS, PG&E and other interested parties adopted a programmatic agreement (PA) that requires PG&E to develop and implement a historic properties management plan (HPMP) for operations and maintenance of the Mokelumne River Project. Pursuant to stipulations of the PA, PG&E has developed and implemented an HPMP in accordance with the Secretary of the Interior's

Standards for the Treatment of Historic Properties (Standards) and guidelines to manage historic properties within the area of potential effect established for the Mokelumne River Project. The HPMP guides programmatic compliance with section 106 of the NHPA and directs PG&E to consult with stakeholders on behalf of FERC when activities associated with License 137 have the potential to affect historic properties. As a project subject to FERC approval, the Proposed Project is subject to the provisions of the PA and HPMP.

In a letter dated September 11, 2018, USACE formally designated FERC as the lead federal agency for compliance with section 106 of the NHPA (Fancher pers. comm.). As such, FERC is addressing section 106 compliance for the Proposed Project pursuant to the requirements of the Mokelumne River Project PA and HPMP.

The Proposed Project is a part of the FERC Project No. 137 (Mokelumne River Project). PG&E is in the process of drafting a *Cultural Resources Inventory and Evaluation Report and Finding of Effect for the PG&E Tiger Creek Regulator Dam Spillway Replacement Project* (ICF 2023).

3.11.4.2 State

The following state regulations related to cultural resources would apply to the Proposed Project.

California Environment Quality Act

Two categories of cultural resources are specifically called out in the CEQA Guidelines. The categories are *historical resources* (CEQA Guidelines section 15064.5[b]) and *unique archaeological sites* (CEQA Guidelines section 15064.5[c]; Public Resources Code section 21083.2). Different legal rules apply to the two different categories of cultural resources. However, the two categories sometimes overlap where an archaeological historical resource also qualifies as a unique archaeological resource. In such an instance, the more stringent rules for unique archaeological resources apply, as explained below. In most situations, resources that meet the definition of a unique archaeological resource also meet the definition of a historical resource. As a result, it is current professional practice to evaluate cultural resources for significance based on their eligibility for listing in the California Register of Historical Resources (CRHR).

Historical resources are those meeting the following requirements:

- Resources listed in or determined eligible for listing in the CRHR (CEQA Guidelines section 15064.5[a][1]);
- Resources included in a local register as defined in Public Resources Code section 5020.1(k), "unless the preponderance of evidence demonstrates" that the resource "is not historically or culturally significant" (CEQA Guidelines section 15064.5[a][2]);
- Resources that are identified as significant in surveys that meet the standards provided in Public Resources Code section 5024.1(g) (CEQA Guidelines section 15064.5[a][3]); and
- Resources that the lead agency determines are significant, based on substantial evidence (CEQA Guidelines section 15064.5[a][3]).

Unique archaeological resources, on the other hand, are defined in Public Resources Code section 21083.2 as a resource that meets at least one of the following criteria:

- Contains information needed to answer important scientific research questions and 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 process for identifying historical resources is typically accomplished by applying the criteria for listing in the CRHR (CCR, tit. 14, § 4852). This section states that a historical resource must be significant at the local, state, or national level under one or more of the following four criteria.

1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. It is associated with the lives of persons important in our past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important in prehistory or history.

To be considered a historical resource for the purpose of CEQA, the resource must also have integrity. *Integrity* is the authenticity of a resource's physical identity, evidenced by the survival of characteristics that existed during the resource's period of significance.

Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling and association. It must also be judged with reference to the particular criteria under which a resource is eligible for listing in the CRHR (CCR, tit. 14, section 4852[c]). Integrity assessments made for CEQA purposes typically follow the National Park Service guidance used for integrity assessments for NRHP purposes.

Even if a resource is not listed or eligible for listing in the CRHR, in a local register of historical resources, or identified in an historical resource survey, a lead agency may still determine that the resource is an historical resource as defined in Public Resources Code sections 5020.1j or 5024.1 (CEQA Guidelines section 15064.5[a][4]).

Resources that meet the significance criteria and integrity considerations must be considered in the impacts analysis under CEQA. Notably, a project that causes a substantial adverse change in the significance of an historical resource is a project that may have significant impact under CEQA (CEQA Guidelines section 15064.5[b]). A substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired. The significance of an historical resource is materially impaired if the project demolishes or materially alters any qualities as follows:

- Qualities that justify the inclusion or eligibility for inclusion of a resource on the CRHR (CEQA Guidelines section 15064.5[b][2][A],[C]); and
- Qualities that justify the inclusion of the resource on a local register (CEQA Guidelines section 15064.5[b][2][B]).

California Health and Safety Code and Public Resources Code

Broad provisions for the protection of Native American cultural resources are contained in California Health and Safety Code, Division 7, Part 2, Chapter 5 (sections 8010 through 8030).

Several provisions of the Public Resources Code also govern archaeological finds of human remains and associated objects. Procedures are detailed under Public Resources Code sections 5097.98 through 5097.996 for actions to be taken whenever Native American remains are discovered. Furthermore, section 7050.5 of the California Health and Safety Code states that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in section 5097.99 of the Public Resources Code. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under California Health and Safety Code section 7100 has committed a public offense that is punishable by imprisonment.

Public Resources Code Chapter 1.7, sections 5097.5–5097.9 define any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor and specify that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources.

3.11.4.3 Local

No local regulations concerning cultural resources apply to the Proposed Project.

3.11.5 Methods and Results

3.11.5.1 Methods

Research

PG&E conducted a record search from the Information Center for Amador County on September 15, 2019, and ICF received the results of an additional records search of PG&E’s combined cultural resources database on June 29, 2023.

ICF received PG&E’s research documents from Starla Lane (PG&E Senior Cultural Resources Specialist) for review and incorporation into the current study. A total of two reports and three California Department of Parks and Recreation Form Sets have been completed that address cultural resources in the Area of Analysis; three cultural resources have been documented previously in the Area of Analysis (Table 3.11-2 and Table 3.11-3).

Table 3.11-2. Previous Studies and Reports in the Area of Analysis and Records Search Study Area

Author	Date	Report Title
PAR Environmental Services, Inc.	April 2003	*National Register of Historic Places Evaluation, Mokelumne River Hydroelectric System, FERC No. 137 Alpine, Amador, and Calaveras Counties, California*
Applied EarthWorks, Inc.	September 2007	*Historic Properties Management Plan for the Mokelumne River Project (FERC No. 137) in Alpine, Amador, and Calaveras Counties, California*
Far Western Anthropological Research Group, Inc.	September 2020	*Archaeological Resources Inventory Report for the PG&E Tiger Creek Regulator Dam Project (Work Order No. 74029542), Amador County, California*

Table 3.11-3. Previously Recorded Cultural Resources in the Area of Analysis

Resource Name	Resource Attributes	NRHP Status	Concurrence Date
Tiger Creek Hydroelectric Subsystem Historic District (P-3-968-1-1)	HP4. Ancillary building; HP8. Industrial building; HP11. Engineering structure; HP21. Dam; HP22. Reservoir; HP30. Trees/vegetation	Eligible	May 2003
Tiger Creek Regulator Dam (P-3-964-1-1)	HP21. Dam; HP22. Reservoir	Eligible (individually and as a historic district contributor)	May 2003

Additional resources were evaluated as part of the Tiger Creek Subsystem Historic District. In addition to the Dam, six other elements/features were determined as contributors to the historic district. The Cole Creek Diversion Dam (1931, 1971) and the Tiger Creek Forebay Dam (1931, modified 1967) were deemed non-contributors to the historic district due to modifications that affected integrity (PAR Environmental Services, Inc. 2002a).

Built Environment Field Investigation

The scope of field investigation for built-environment resources included the pedestrian survey of the entire Area of Analysis, inclusive of areas around the Reservoir as well as the potential staging areas.

Two ICF architectural historians surveyed the Dam and appurtenant structures around the southern end of the Reservoir. The architectural historians conducted a field investigation of the Area of Analysis on June 2, 2022. Field personnel had permission to enter the Area of Analysis at the Dam site and potential staging areas.

ICF's architectural historians conducted a pedestrian survey of accessible areas of the Area of Analysis that had not received a previous adequate survey. The survey included the Dam and appurtenant structures around the southern end of the Reservoir. The survey also covered the landscape and built resources at the Cedar Mill staging area and the Doakes Ridge staging and spoils site.

The surveyed area of the Reservoir was approximately 3.5 acres (0.36-mile perimeter) and included the Dam, existing spillway, proposed spillway location, intake structure, chute and flip bucket, plunge pool, and ancillary resources. The southern end of the Reservoir was approached from Tiger Creek Road to the south. The graveled and graded surfaces to the south and east, the bridge across the existing spillway, and the span atop the Dam were traversed by foot. The dense hillside area to the west and north, including the proposed spillway location, were observed from atop the Dam and the immediate, sloped and grassy area at the Dam's northern end.

The architectural historians surveyed two potential staging areas, although the built resources associated with the parcels are outside the area of analysis: the Cedar Mill staging area and the Doakes Ridge staging and spoils site.

The Cedar Mill staging area is an approximately 51.7-acre (0.1-square-mile area, 2.8-mile perimeter) area located on SR 88 in Pioneer, California. A portion of the area is used by PG&E and is accessible through a private gate. The area consists of three storage structures, one greenhouse, two residences, and scattered ancillary buildings and structures which were partially extant by 1962. One storage structure and one residence are older than 50 years and therefore meet the threshold for potential evaluation. Much of the area consists of graveled and graded surfaces along service roads south and west of the greenhouses. Areas that were not accessible by foot were observed from a vehicle to cover all built resources. Cedar Mill staging area is approximately 6.5 miles southwest of the Dam.

The Doakes Ridge staging and spoils site is an approximately 14.8-acre (0.7-mile perimeter) area located on an unmarked service road between Tiger Creek Road and Salt Springs Road. The area has limited accessibility within a public recreation area. The Doakes Ridge staging and spoils site consists of two buildings that pre-date 1962, one of which is partially obscured from the public right-of-way by a surrounding chain link fence. Both buildings are older than 50 years and therefore meet the threshold for potential evaluation. Surrounding areas to the west and south were graveled with graded surfaces and dense tree coverage. Doakes Ridge staging and spoils site is approximately 0.75 mile south of the Dam.

Archaeological Field Investigation

The scope of field investigation for archaeological resources included a pedestrian survey of the entire Area of Analysis, inclusive of areas around the Reservoir and the Doakes Ridge staging and spoils site. Two ICF archaeologists conducted a pedestrian survey of accessible areas of the Area of Analysis that had not received a previous adequate survey. The archaeological survey of the Area of Analysis was conducted on July 10, 2023. Field personnel had permission to enter the Area of Analysis at the Dam site and at Cedar Mill staging area and Doakes Ridge staging and spoils cite. Archaeologists walked 15-meter transects to ensure maximum ground coverage in a timely manner. Areas that were covered by previously adequate surveying (Far Western Anthropological Research Group 2020) and areas deemed unsafe due to extreme slope were not surveyed as part of this effort.

Native American Consultation

Consultation efforts undertaken as part of the Proposed Project are summarized in Section 3.12.5.2 *Sacred Lands File Search and Correspondence with Native American Representatives.*

3.11.5.2 Results

Archaeological Resources

Based on records search results, no previously recorded archaeological resources were identified in the Area of Analysis. However, three archaeological resources were identified as a result of the pedestrian survey. All three are historic-era resources. Descriptions of these resources are as follows (ICF 2023:4-1, 4-4–4-7):

ICF-CUL-01 is a concrete foundation and an associated stacked rock retaining wall. The resource is approximately 25 feet long by 15 feet wide. No associated artifact deposits were noted. Historic-era map research and PG&E records indicate that the structure was built in or shortly after 1956 and was demolished between 2001 and

2012. According to the PG&E project engineer, the foundation is the remains of a ditch tender's cabin. This resource does not appear to be eligible for listing in the NRHP.

ICF-CUL-02 is a concrete slab in Tiger Creek that may have been a creek crossing for vehicles. The slab is approximately 15 feet long by 8 feet wide and is badly eroded and cracked. No associated artifacts or features were noted. This resource does not appear to be eligible for listing in the NRHP.

ICF-CUL-03 is a stacked rock retaining wall along the east side of the access road to the spillway. The wall is approximately 12 feet long and 4 feet high. No associated artifacts or features were noted. This resource does not appear to be eligible for listing in the NRHP.

Archaeological Sensitivity

PG&E conducted a record search from the Information Center for Amador County on September 15, 2019, and ICF received the results of an additional records search of PG&E's combined cultural resources database on June 29, 2023. No known archeological resources were identified within a 0.25-mile radius of the Area of Analysis; all identified archaeological resources within 0.50 mile date to the historic era. There are no previously identified areas of tribal concern or Native American–affiliated archaeological resources within a 0.50-mile radius. The pedestrian survey identified three historic-era features; however, none of the features appear to have any associated archaeological deposits. As such, the Area of Analysis has a low sensitivity for prehistoric and moderate sensitivity for historic-era archaeological resources.

Built-Environment Resources

This section presents information about what is known about cultural resources within the Area of Analysis for the Proposed Project. For built-environment cultural resources, because the Area of Analysis has been completely surveyed and evaluated for NRHP and CRHR eligibility, only the previously identified built-environment historical resources are identified in this IS/MND.

In 2003, PG&E contracted PAR Environmental Services, Inc. to conduct an NRHP evaluation for the Mokelumne River Hydroelectric Project operating system (MRHPOS). In 2003, PG&E determined that the MRHPOS as a whole was ineligible for the NRHP, but some features were individually eligible. PG&E identified one historic district and one dam for NRHP eligibility located within the Area of Analysis. The Tiger Creek Subsystem Historic District is eligible under NRHP/CRHR Criteria A/1 and C/3 with a period of significance of 1931. The Dam is individually eligible at the state level under Criterion C/3 with the construction year as the period of significance, 1931. It is also a contributing element to the Tiger Creek Subsystem Historic District (PAR Environmental Services, Inc. 2003). The SHPO concurred with the determinations of NRHP eligibility in May 2003 (Mellon 2003).

After completion of research and field investigation that was conducted for the Proposed Project's Finding of Effect for compliance under section 106 of the NHPA, two historical resources were identified in the built-environment Area of Analysis: the Dam and the Tiger Creek Subsystem Historic District (ICF 2023:5-1). The Dam is also a contributor to the historic district.

Tiger Creek Subsystem Historic District

The following properties are contributors to the Tiger Creek Subsystem Historic District:

- Salt Springs Dam (1931)[1];
- Salt Springs Powerhouse (1931);
- Salt Springs Camp (1927–1962);
- Tiger Creek Conduit (1931);
- Tiger Creek Powerhouse (1931);
- Tiger Creek Camp (1930–1932);
- Tiger Creek Afterbay Dam (1931); and
- Tiger Creek Regulator Dam (1931).

The following properties are non-contributors to the Tiger Creek Subsystem Historic District:

- Cole Creek Diversion Dam (1931, 1971); and
- Tiger Creek Forebay Dam.

National Register of Historic Places Significance

In April 2003, PG&E contracted PAR Environmental Services, Inc. to conduct an NRHP Evaluation for the MRHPOS, which included an evaluation of Tiger Creek Subsystem Historic District features (PAR Environmental Services, Inc. 2003). The

[1] In addition to serving as a contributing element to the Tiger Creek Subsystem Historic District, the Salt Springs Dam, outside of the area of analysis of the proposed project, is also individually eligible at the local level under Criterion C. The construction year, 1931, also considered the period of significance.

Tiger Creek Subsystem Historic District was determined eligible for listing in the NRHP with SHPO concurrence in May 2003. The Tiger Creek Subsystem Historic District was evaluated as significant under Criteria A and C, with a period of significance of 1931. The theme was Hydroelectric Generation. The California Department of Parks and Recreation 523 Form Set is quoted below with light editing (PAR Environmental Services, Inc. 2003:55).

> The [Tiger Creek] Subsystem [Historic District] retains a good degree of integrity from its original 1931 construction phase, its period of significance. It retains integrity of location, design, materials, setting, feeling, and association. The subsystem is eligible under Criterion A as an unusual large Depression-era construction project noted at the time as somewhat of a financial gamble for the Company in uncertain economic times and under Criterion C as a unique hydroelectric system with substantial dams and a complex system of tributary development and water conveyance features. Most of its elements lack individual eligibility but still contribute to the system's integrity. The Cole Creek Diversion is completely modern and neither individually eligible nor a district contributor. East and West Panther and Beaver Creek diversion dams divert water from small creeks to the Tiger Creek Conduit, which feeds water to the Tiger Creek Powerhouse. These dams were evaluated in 2000 for this historic significance and found ineligible to the NRHP. When constructed they were considered very modest concrete dams among the numerous similar dams in California and are not unique, nor are they eligible, nor district contributors. Also, the Company's routine maintenance has led to replacement of some equipment at the powerhouses and especially the switchyards to the extent that their integrity of materials have been compromised. As a result, the switchyards, West and East Panther, Beaver Creek, and Cole Creek Diversion dams do not appear to contribute to the Tiger Creek Subsystem Historic District.

Integrity

As a multi-component operating assemblage, the Tiger Creek Subsystem Historic District retains integrity to the period of significance. The district's contributing resources retain key physical characteristics, operational and spatial relationships, and design features that readily illustrate the historic identity and significant themes of 1930s hydroelectric development. In addition, the contributing resources largely continue to operate as designed, with the system continuing to generate hydroelectricity in the way it was envisioned. In this sense, the Tiger Creek Subsystem Historic District provides a significant portrait of early twentieth-century hydroelectric design and an illustrative model of the enduring engineering and design themes that undergird the continued operational significance of the district.

The original evaluation stated that the district retained integrity, but did not complete a detailed analysis of integrity, so this section is extrapolated from the previous documentation.

In general, the integrity of infrastructure resources depends on the continuity of the resources use and its physical presence as an element of the landscape. Moreover, for a district to retain integrity, the majority of the components that make up the district's historic character must possess integrity even if they are individually undistinguished. In addition, the relationships among the district's components must be substantially unchanged since the period of significance.

Within this general framework, discussion of all aspects of the historic district’s integrity, including location, design, setting, materials, workmanship, feeling, and association, are as follows.

Location: The placement and location of resources, both individually and as an interconnected system, are vital to the Tiger Creek Hydroelectric Subsystem Historic District. The system's dams, flowlines, and powerhouses were designed and constructed to operate as an interconnected whole, with the location of each mandated by precise environmental and engineering constraints. Within this context, the system retains strong location integrity. The district's contributing resources remain in the same location and largely exhibit the same spatial and operating relationships as developed in the period of significance.

Design: The district retains design integrity, with all contributing resources conveying significant design features through their physical form, structural and operational plan, and engineering design. Many resources have been maintained and modified over time, including repair and replacement of constituent components and upgrade of engineering and operational features, but such ongoing maintenance has exhibited a compatible industrial design and assured operational integrity. Modifications to contributing features have generally been made in-kind. Further, these functional alterations have generally left key historic period design features in place, including massing, plan, and detailing. Contributing resources display integrity through their historic period engineering and aesthetic design features.

Setting: Setting is of particular importance, as the industrial form of the system was developed and defined in relation to the surrounding physical environment. Hydroelectric resources were placed in accordance with the surrounding terrain, with the development of reservoirs dependent on the surrounding watershed and the flowlines and powerhouse placed in relation to surrounding topography and terrain conditions. In this sense, the human-made resources of the district were developed in constant interplay with the surrounding natural setting, with one informing and defining the other. In general, the contributing resources retain a high integrity of the setting. The setting has remained relatively unchanged since the period of significance, with little development other than the industrial features of the system and a flexible and largely undeveloped environmental context. While the century since development has continued to see an expansion of recreational and residential development in and around the area of analysis, this ancillary growth generally does not undermine the ability of the district to convey significance through an integrity of the setting. Most major project features remain geographically and physically isolated. In this sense, the setting remains comparable to that which defined development, and the interrelationship of project features and surrounding environmental constraints is readily discernible.

Materials: The monumental industrial form of the Tiger Creek Subsystem Historic District is comprised of a small number of core materials, all of which retain high integrity to the period of significance. The system's two powerhouses were primarily constructed of concrete and steel; tunnels and steel flowlines, concrete, dry-laid rock, blasted granite; and dams of concrete, rock, and steel. In most senses, the bulk of this original material remains, with only modest alterations to that which was initially developed. In general, material alterations are key to the continued operation of the system. They are generally compatible in form and utilitarian in design and, as such, do not diminish material integrity such that the resources cannot convey significance.

Workmanship: The Tiger Creek Subsystem Historic District's complex integration within the framing natural environment conveys a strong sense of workmanship that retains high integrity. The design and functionality harness natural forces related to hydrology and environmental terrain to generate electricity. This energy transfer was accomplished by strategically placed reservoirs and lower elevation powerhouses, which together continue to convey a sense of industrial workmanship concerning this overall task. The workmanship is evident in several individual features and have remained successful in contributing to the overall subsystem’s use.

Feeling: The historic district readily conveys significance through integrity of feeling because the Tiger Creek Subsystem Historic District has continued to operate in much the same manner as it was designed. The district's significance is derived from its association with 1930s hydroelectric development, a feeling which is conveyed by the contributing resources at present through their integrity of location, design, setting, workmanship, and materials. A strong sense of feeling is conveyed by individual resources themselves and the functional interconnectedness of all features. The subsystem evokes feelings of the period of significance, with the integration of the features readily illuminating a sense of time and place.

Association: As historic components of an operating hydroelectric system, the Tiger Creek Subsystem Historic District retains rich associations with hydroelectric generation in California. The district retains a continuity of function, physical form, and spatial layout devoted to hydroelectric generation and is therefore readily associated with many significant development themes within this context. The layout and function of the interrelated features are largely the same, expressing physical and structural associations to the development period.

Taken collectively, the Tiger Creek Subsystem Historic District and its contributors convey the system's significance.

Character-Defining Features

The Tiger Creek Subsystem Historic District retains key physical features, spatial relationships, and operational linkages that enable the district to convey significance as a significant 1930s hydroelectric generation and development. The character-defining features of the regulator district were not specifically identified in the previous evaluation (PAR Environmental Services, Inc. 2003:26-64). However, based on additional analysis and an extrapolation of the previous documentation, the character-defining features are summarized below. The unified design and interconnectedness of multiple linear features are listed here:

- Cohesive functional and operational linkages between hydroelectric resources comprising five dams, two powerhouses, two camps and a hydraulic conduit;
- Functional use as a systematic generator of hydroelectricity;
- The canal and conduit system to divert water from Cole Creek, Bear River, Beaver Creek, East Panther Creek, West Panther Creek, and Tiger Creek to the associated reservoirs;
- A surrounding terrain that is characterized by mountainous exposures, forested steep hillsides, and a generally undeveloped surrounding environment; the historic district features are integrated into that surrounding landscape;
- A sprawling engineering and operational plan that is characterized by substantial distances between resources and a linear operational relationship that extends from the Cole Creek Diversion to the Tiger Creek Afterbay Dam;

- A generally massive industrial scale, with large dams, scattered camps, and powerhouses; and
- A range of industrial property types and engineering designs, including spillways, conduits, reservoirs, and powerhouses that exhibit differing materials, massing, and structures but share a common operating framework.

The following elements and their character-defining features were identified as contributors to the Tiger Creek Subsystem Historic District:

- Salt Springs Dam (1931): the dam's location in an unspoiled area of the Sierra Nevada and the massive size and height of the rockfill structure;
- Salt Springs Powerhouse (1931): the contribution to the greater system and use as an energy generator;
- Salt Springs Camp (1927–1962): the operation camp structures that contribute to the greater system. The general collection of cabins, garages, and outbuildings, void of specific configuration, construction, and style;
- Tiger Creek Conduit (1931): 38 miles of hydraulic conduit, canal, tunnels, siphons, and arches. The operation and design of the two arches carrying the conduit across deep ravines in a "rainbow" arch construction shape common in bridges throughout the Sierran foothills and mountains from the 1910s to the 1940s. The operation and size of the two, large siphon structures;
- Tiger Creek Powerhouse (1931): the generation capability of producing 54 megawatts as part of a larger facility contributing to the greater system;
- Tiger Creek Camp (1930–1932): the contribution to the greater system and use as a generation of energy.; providing housing for the powerhouse and system maintenance personnel, as well as meeting employee spaces for conferences and classes; the size and configuration of interior common rooms for employee use and gathering;
- Tiger Creek Afterbay Dam (1931): the operation of the concrete radial arch design, the common type of dam construction in California at the time, in the greater system; and
- Tiger Creek Regulator Dam (1931): the siting and usage within a unified and interconnected subsystem of multiple linear features; the location and other features of the subsystem being a critical link to the continued usage of the greater system.

Discussion of the Tiger Creek Regulator Dam as a resource individually eligible for the NRHP can be found later in this section.

The Cole Creek Diversion Dam (1931, rebuilt 1971), and the Tiger Creek Forebay Dam (1931, modified 1967) were determined to be non-contributing features to the Tiger Creek Subsystem Historic District in the 2002 PAR Environmental Services, Inc. evaluation, in part, because they were not yet historic age. The two resources were also noted for affects to integrity due to contemporary modifications. Twenty years later, new assessments could be completed to reevaluate and determine if the now historic-age features, including the modifications, should be considered contributing features to the historic district.

Tiger Creek Regulator Dam

The Tiger Creek Regulator Dam is the second built-environment historic property identified in the Area of Analysis. The Dam is eligible as an individual property as well as a contributor to the Tiger Creek Subsystem Historic District.

National Register of Historic Places Significance

In April 2003, PG&E contracted PAR Environmental Services, Inc. to conduct an NRHP evaluation for the Mokelumne River Hydroelectric System, which included an evaluation of Tiger Creek Subsystem Historic District features (PAR Environmental Services, Inc. 2003). The Tiger Creek Regulator Dam was determined eligible for listing in the NRHP individually and as a contributor to the Tiger Creek Subsystem Historic District, with SHPO concurrence in May 2003.

In addition to contributing to the Tiger Creek Hydroelectric System, the Dam has been determined individually eligible for listing in the NRHP with a period of significance as its construction year, 1931, at the state level of significance. The Dam is individually eligible under Criterion C for its engineering design. The design is the highest and longest patented Ambursen concrete slab and buttress dam in California. As a distinctly extant and superlative engineering design representative of 1930s hydroelectric development in California, the Dam merits individual recognition in the NRHP.

Under Criterion C (CRHR Criterion 3), the Tiger Creek Regulator Dam is a significant material representative of 1930s hydroelectric engineering. Specifically, the Ambursen reinforced concrete slab and buttress dam design was the highest of its kind in the original 1931 construction. Moreover, as an early example within the state of California, the design maintains the longest patent of the Ambursen design. It is located about three miles northeast of the Tiger Creek Powerhouse. Its crest is 100 feet high and 470 feet long. The Reservoir receives canal water from a tunnel outlet structure on its northeast side. The outlet in the Dam is a slide fate measuring 80 feet by 10.5 feet leading to a concrete flume. The Reservoir provides regulation of flows to the Tiger Creek Powerhouse via an open canal (the lower Tiger Creek Conduit) to Tiger Creek Forebay.

Additionally, the Dam maintains its original exposed downstream face; nearly all other Ambursen dams in the state to have been back-filled (downstream slope) for seismic purposes. This patented dam style was popular during the 1920s and 1930s, although concrete radial arch dams superseded them for their greater seismic reliability. The spillway arrangement consists of a 20-feet by 24-feet concrete open channel leading to three siphons and an open weir. The Reservoir has a 540-acre-foot capacity and covers 14 acres at its maximum level (PAR Environmental Services, Inc. 2003:44). The sheer size, storage, and release capabilities of the features working in tandem are vital qualities of the Dam's design and functionality. In this sense, as an Ambursen concrete slab and buttress dam system, the Tiger Creek Regulator Dam has a distinct design scale, patent, and extant exposed downstream face dating to 1931 that merit recognition under the NRHP.

Integrity

The previous evaluation of NRHP eligibility for the Tiger Creek Regulator Dam by PAR Environmental Services Inc. only noted that the historic property retained integrity but did not include a detailed discussion of the Dam's integrity.

The Tiger Creek Regulator Dam retains integrity to the period of significance. The Dam retains key physical, operational, and design characteristics that readily illustrate the historic identity and significant features of 1931 construction. In addition, the Dam largely continues to operate as designed, playing an integral role within the subsystem to generate hydroelectricity in the way it was planned.

In general, the overall integrity of infrastructure resources heavily depends on the continuity of the resource and its physical presence as an element of the landscape. Infrastructure resource materials, and especially those in water management, require considerable maintenance over time and physical interventions to continue proper use. For example, the three spillway siphons were modified to prevent air from breaking the siphoning effect in 1987. Additionally, a sheet metal hood was added to the siphon breaker air inlet to lower the air inlet elevation and prevent the siphon breaker operation of alternating flows of air and water causing structure vibration and a decrease in the siphon's discharge. A gate valve was also added at the outlet to provide better control of the Dam's discharge (PAR Environmental Services, Inc. 2002b:1-2). Therefore, modifications to the resource's design to maintain continued use is contextualized when considering integrity of materials and workmanship.

Lastly, an evaluation of a resource under Criterion C for its engineering accomplishment is primarily concerned with the integrity of design. Therefore, the design, and specifically the form, configuration, and dimensions of design qualities determined as character-defining features are the primary focus of this evaluation.

Within this general framework, discussion of all aspects of the Dam's integrity, including location, design, setting, materials, workmanship, feeling, and association, are as follows.

Location: The resource placement and location are vital to the Tiger Creek Regulator Dam within the larger hydroelectric power system. Additionally, the locations and alignment of the individual components, including the Reservoir, tunnel outlet structure, and open canal contribute to the functionality of the Dam and connect to other features like the Tiger Creek Powerhouse and Tiger Creek Forebay. The relationship to the environmental and engineering constraints have remained largely unchanged. Within this context, the Dam retains integrity of location, remaining in the same location in the greater subsystem individually maintaining the same spatial and operating relationships as developed in the period of significance.

Design: The Dam retains high integrity within its significant design features, through its physical form and structural and operational plan within the larger subsystem. The Ambursen reinforced concrete slab and buttress design, a patented construction technique used in the 1920s and 1930s, is critical to the significance of engineering design and has been maintained since 1931. Moreover, retaining the exposed downstream face is distinct among other Ambursen dams in California that have been back-filled on the downstream slope for seismic protection. The retention of the slab and buttress design, a key character-defining feature, is critical to the integrity of the resource. While many components have been maintained and modified or replaced over time, such ongoing maintenance have exhibited a compatible industrial design and served to assure operational integrity. A sheet metal hood was added to the siphon breaker air inlet and a gate valve was also added at the outlet to ease operations and did not significantly impact the historic function dating to the period of significance. The change to three spillway siphons ensured functionality and did not impact the integrity of design. These functional alterations have generally left key historic period design features in place, including massing, plan, and function, displaying integrity of engineering and aesthetic design features.

Setting: The integrity of the setting is of particular importance, as the Dam was developed and defined in relation to the entire subsystem and the surrounding physical environment. In general, the components of the Dam retain high integrity of setting. While the century since development has continued to see expansion of recreational and residential development in and around the Dam, in general this ancillary growth does not undermine the ability of the district to convey significance through integrity of setting. Most major project features remain geographically and physically. In general, the setting remains comparable to the period of significance, and the interrelationship of Dam components, as well as the entire Dam in relation to the greater subsystem, is readily discernible.

Materials: The Dam is primarily constructed of concrete, rock, and steel. In most senses, the bulk of this original material remains, with only modest alterations to that which was initially developed. In general, materials are reflective of the 1931 construction and associated period of significance, and material alterations have contributed to streamlining and maintaining the functionality of the Dam in the greater subsystem operation; they are generally compatible in form and utilitarian in design and as such do not diminish material integrity such that the resource cannot convey significance.

Workmanship: The Dam's complex integration within the subsystem and surrounding landscape conveys a strong sense of workmanship that retains high integrity. Moreover, the interconnected relationship to other features maintains original functionality. Modifications to components have increased efficiency and have not deterred from character-defining features and pertinent materials or general engineering design.

Feeling: The Dam has continued to operate in much the same manner as it was designed, thus conveying significance through integrity of feeling. The significance of the regulator is derived from its association within 1931 hydroelectric development, a feeling which is consistently conveyed by the contributing resources at present through their integrity of location, design, setting, workmanship, and materials. A strong sense of feeling is conveyed by continued operational use in the design and function originally conceived within the great subsystem during the period of significance.

Association: The resource retains rich associations with hydroelectric generation in California as a continuously utilized regulator dam. Moreover, the Dam retains a continuity of function, physical form, and spatial layout that is devoted to hydroelectric generation as an Ambursen reinforced concrete slab and buttress dam design with its original exposed downstream face. As one of the last remaining Ambursen dams to maintain an exposed downstream face, the resource retains physical and structural associations to the period of significance period.

Character-Defining Features

The Dam retains distinctive physical features of the notable design that enable it to convey significance as a significant 1931 hydroelectric resource. The character-defining features of the Dam were not specifically identified in the previous documentation (PAR Environmental Services, Inc. 2003:26-64). However, based on additional analysis and an extrapolation of the previous documentation, the character-defining features are summarized here:

- The Ambursen reinforced concrete slab and buttress design, a patented construction technique used in the 1920s and 1930s;
- The massive industrial scale in both size and functionality: its crest is 100 feet high 470 feet long, and at 3,586 feet above mean sea level;
- The siting within the surrounding landscape as well as its placement in the unified and interconnectedness of multiple linear features within the subsystem; the location, among other features of the subsystem, is vital to the continued usage; the Dam is approximately three miles northeast of the Tiger Creek Powerhouse;
- The cohesive functional and operational linkages between components: the Reservoir receives canal water from a tunnel outlet structure on its northeast side; the Reservoir provides regulation of flows to the Tiger Creek Powerhouse via an open canal (the lower Tiger Creek Conduit) to Tiger Creek Forebay;
- The functional cohesion with the adjacent Reservoir, which has a 540-acre-foot capacity and covers 14 acres at its maximum level;
- The location and alignment of components to transfer water: the outlet in the Dam is a slide fate measuring 80 feet by 10.5 feet, leading to a concrete flume; and
- The spillway function and arrangement, which consists of a 20 by 24-foot concrete open channel leading to three siphons and an open weir; the siphons can release 2,100 cfs, while the weir can release an additional 1,200 cfs.

3.11.6 Environmental Effects

Potential impacts of the Proposed Project related to cultural resources are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section V *Cultural Resources* asks whether the Proposed Project would result in any of the following conditions.

a. Cause a substantial adverse change in the significance of a historical resource pursuant to section 15064.5?

Less than Significant. There are two historical resources as defined by CEQA within the Area of Analysis: the Tiger Creek Subsystem Historic District and the Tiger Creek Regulator Dam. As designed, the Proposed Project would have a less-than-significant potential impact on historical resources. The analysis for each historical resource follows.

Tiger Creek Subsystem Historic District

The Proposed Project would potentially affect the Tiger Creek Subsystem Historic District, and specifically one contributing resource to the district—the Tiger Creek Regulator Dam—but the Proposed Project would not cause a substantial adverse change in the significance of the historical resource. The Proposed Project would not diminish the integrity of the resource and would not destroy or adversely impact any qualifying characteristics of the property.

The Proposed Project includes the replacement of the service spillway in the vicinity of the existing footprint of the spillway, including the abandonment of the existing spillway and construction of a new right abutment spillway designed to be able to pass the PMF. The new right abutment spillway would call for a dam notch in the Dam and minor excavation of the steep grading, though modifications would not affect the Dam's stability, but rather prolong its use. The proposed modifications would ensure the utilization and longevity of the Dam as an integral, functioning component of the Tiger Creek Subsystem Historic District.

The Proposed Project calls for replacements that would match the property's use and functionality. The Proposed Project is necessary in order to maintain the property's historic and current use. Furthermore, if the Proposed Project is not completed, the condition of the property would continue to deteriorate through deficient capacity and structural concerns. The changes to the historic property's setting are in-kind with the area and include roadway alterations, both permanent and temporary, that are consistent with the rural setting.

While the Proposed Project activities would alter some character-defining features of the property, those changes would not destroy or damage the property in a manner inconsistent with the Standards. The Dam's Buttress 23 and the northern segment of the footbridge, face of the Dam, and top of the parapet would be removed to create a notch in the face of the Dam. However, the proposed demolition is necessary for the completion of the right abutment spillway construction to resolve water capacity deficiencies and offset existing structural concerns that will guarantee the continued use of the Dam as a part of the larger subsystem and a contributor to the historic district. Within the context of the overall Dam, this small loss of materials would help ensure its continued historic function and use. The character-defining Ambursen reinforced concrete slab and buttress design of the Dam, within the overall district, will retain its massive scale will not be significantly altered as the proposed construction affects a small portion—one buttress—of the entire face of the Dam.

The Proposed Project would not introduce new visual features to the setting of the historical resource.

Additionally, most of the proposed changes are better described as repair, maintenance, or stabilization of features. The replacement of the existing spillway does propose the abandonment of the existing spillway and construction of a new right abutment spillway within the Tiger Creek Regulator Dam system. However, the proposed construction is in compliance with the Standards. The spillway's design is a character-defining feature, but its key importance is as a working part of the Dam as a whole. As proposed, the replacement spillway will support the historic function of the Dam and minimize effect on the design and material integrity of other character-defining features.

The Proposed Project was designed in conformance with the Standards, so it would not cause a substantial adverse change in the significance of historical resources in the Area of Analysis as defined in section 15064.5 of the CEQA Guidelines. While the project activities would alter some character-defining features of the property, those changes would not destroy or damage the property in a manner inconsistent with the Standards. Most proposed changes are better described as repair, maintenance, or stabilization of features throughout construction of the Proposed Project.

The Proposed Project comprises construction of a new spillway near the Dam's right abutment, which includes a spillway intake (crest structure), a notch through the existing Dam, a concrete chute, flip bucket splitter blocks, and plunge pool. Other associated features include a permanent access road, cofferdam, new log boom, lighting, and abandonment of the existing spillway. However, the proposed work would be in compliance with the Standards. The Proposed Project's staging activities have no potential to affect the historical resource.

To demonstrate how the Proposed Project would conform with the Standards, each standard is evaluated against each feature of the Proposed Project. Rehabilitation is the most appropriate approach to the Standards. The Rehabilitation Standards are as follows.

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction would not destroy historic materials, features, and spatial relationships that characterize the property. The new work would be differentiated from the old and would be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction would be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The Proposed Project conforms with the Rehabilitation Standards. For example, the property would be used as it was historically used (Standard 1). The Proposed Project would not create a false sense of historical development (Standard 3). No previous changes to the property have acquired historic significance (Standard 4 is not applicable). No distinctive materials, features, finishes, and construction techniques would be altered as a result of the Proposed Project (Standard 5). No chemical or physical treatments are planned as part of the Proposed Project (Standard 7). Archaeological resources would be protected and preserved in place (Standard 8).

The elements of the Proposed Project require analysis to show conformance with Rehabilitation Standards 2, 6, 9, and 10. Each of the Proposed Project elements are analyzed for conformance with the applicable standards, which are included in Table 3.11-4. The Proposed Project activities that primarily have the potential to permanently alter the integrity of the Tiger Creek Subsystem Historic District and its contributor, the Tiger Creek Regulator Dam, is the abandonment of the existing spillway, a character-defining feature of the contributing resource, and the construction of a new right abutment spillway. These Proposed Project activities have the potential to most affect the integrity of materials and design.

While the eligibility evaluation of the historic district notes that the materials and design are key aspects of the district’s integrity, the evaluation of integrity acknowledges that material alterations are key to the continued operation of the system. If alterations are generally compatible in form, utilitarian in design, and maintain the existing type of materials, alterations do not diminish the integrity of materials such that the district or contributors cannot convey significance. Furthermore, in the case of the spillway, reinforced concrete is a ubiquitous material that is designed to require cyclical replacement.

Many resources within the historic district have been maintained and rehabilitated over time, including repair and replacement of constituent components and upgrade of engineering and operational features to ensure operational integrity. Further, when functional alterations leave key historic-period design features in place, including massing, plan, and detailing, the contributing resources continue to exhibit their integrity of design through their historic period engineering and aesthetic design features.

Table 3.11-4. Analysis of Proposed Project Elements' Conformance with Rehabilitation Standards 2, 6, 9, and 10 for the Tiger Creek Subsystem Historic District

Proposed Project Element	Type of Project Activity	Analysis of Conformance with Rehabilitation Standard 2	Analysis of Conformance with Rehabilitation Standard 6	Analysis of Conformance with Rehabilitation Standard 9	Analysis of Conformance with Rehabilitation Standard 10
Temporary Access Roads, Bridges, and Trails	Temporary	The existing access road—Tiger Creek Road—is not character-defining to the historic district. The existing and potential access roads will fall within the historic district boundaries but will not remove distinctive materials or alter features, spaces, and spatial relationships that characterize the historic district. The temporary bridges and trails would not cause damage to the historic property, except for the removal of trees and other vegetation. While the setting is a character-defining feature to the resource, the removal of a small number of trees would not cause a noticeable change to the setting.	Standard 6 does not apply.	The construction of the temporary bridge over the plunge pool would result in the permanent installation of rock slope protection in an area of approximately 30 feet by 20 feet on each bank. While a new feature, the proposed rock slope protection is consistent with the setting. Furthermore, the materials and the appearance of the plunge pool are not character-defining to the historic property, whereas the operation of the facility is character-defining. The rock slope protection in this area will help insure the operation of the water conveyance system.	The Proposed Project element, if removed in the future, would leave the essential form and integrity of the historic property. The project element conforms with Standard 10.
Mobilization and Site Preparation	Temporary	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 2 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 6 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 9 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 10 does not apply.
Existing Spillway Abandonment and Right Abutment Spillway Construction	Permanent	This Proposed Project element will not remove distinctive materials or alter features, spaces, and spatial relationships that characterize the historic property or its contributor. The materials that will be abandoned are no longer functional in the manner as intended.	Reinforced concrete is a ubiquitous material and the material in-and-of itself does not constitute a "distinctive feature." When deteriorated, reinforced concrete cannot be repaired such that it would remain functional as part of an engineering feature. In-kind replacement of deteriorated concrete is the best alternative to maintain the overall functionality of the spillway as a feature of the Dam: a contributor to the historic district. The construction of a new right abutment spillway will utilize in-kind materials (reinforced concrete or	The construction of the new right abutment spillway will not destroy the historic materials or spatial relationships on the Tiger Creek Regulator Dam as a contributor to the historic district. Though a segment of the Dam will be removed for construction, it is a small section that will not affect the extant use or overall Ambursen reinforced concrete slab and buttress design, both character-defining features. Additionally, the new work will be distinguished from the old with in-	The new right abutment spillway, if removed in the future, would leave the essential form, function, and integrity of the Ambursen reinforced concrete slab and buttress design.

Proposed Project Element	Type of Project Activity	Analysis of Conformance with Rehabilitation Standard 2	Analysis of Conformance with Rehabilitation Standard 6	Analysis of Conformance with Rehabilitation Standard 9	Analysis of Conformance with Rehabilitation Standard 10
			shotcrete). In addition, the construction of the new right abutment spillway will maintain similar geometry of the existing spillway by way of intake structure, chute, flip bucket, and plunge pool. Missing features will not be replaced as part of this project.	kind materials and compatible in size, scale, and proportion. Continued function within the larger subsystem is vital to the historic district, therefore, a spillway with proper capacity and integrity is necessary.	
Construction Phasing	Temporary	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 2 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 6 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 9 does not apply	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 10 does not apply.
Demobilization and Cleanup	Temporary	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 2 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 6 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 9 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 10 does not apply.
Potential Staging Areas	Temporary	This Proposed Project element will not remove distinctive materials or alter features, spaces, and spatial relationships that characterize the historic district. In some cases, this project element is outside of the historic district boundaries.	Standard 6 does not apply.	Standard 9 does not apply.	This adjacent construction is in keeping with the setting of the district. If the staging areas are changed in the future undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.
Fire Hazard Prevention	Temporary	This Proposed Project element is precautionary and would not additionally alter pre-construction conditions. Standard 2 does not apply.	This Proposed Project element is precautionary and would not additionally alter pre-construction conditions. Standard 6 does not apply.	This Proposed Project element is precautionary and would not additionally alter pre-construction conditions. Standard 9 does not apply.	This Proposed Project element is precautionary and would not additionally alter pre-construction conditions. Standard 10 does not apply.

As designed, each Proposed Project element and the overall Proposed Project conforms with the Rehabilitation Standards. The Proposed Project would not materially impair any aspects of the resource's integrity. The Proposed Project would have a less than significant potential impact on the Tiger Creek Subsystem Historic District.

Tiger Creek Regulator Dam

The Proposed Project would potentially impact the Tiger Creek Regulator Dam, but the Proposed Project would not cause a substantial adverse change in the significance of the historical resource. The Proposed Project would not diminish the integrity of the resource and would not destroy or adversely affect any qualifying characteristics of the property.

The Proposed Project includes the replacement of the service spillway in the vicinity of the existing footprint of the spillway, including the abandonment of the existing spillway and construction of a new right abutment spillway designed to be able to pass the PMF. The new right abutment spillway would call for a dam notch in the Dam and minor excavation of the steep grading, though modifications would not affect the Dam's stability, but rather prolong its use. The proposed modifications would ensure the utilization and longevity of the Dam.

The Proposed Project proposes modifications that would maintain the property's use and functionality. The Proposed Project is necessary in order to maintain the property's historic and current use. Furthermore, if the Proposed Project is not completed, the condition of the property would continue to deteriorate. The changes to the historic property's setting are in-kind with the area and include roadway alterations, both permanent and temporary, that are consistent with the rural setting.

While the Proposed Project activities would alter some character-defining features of the property, those changes would not destroy or damage the property in a manner inconsistent with the Standards. The Dam's Buttress 23 and the northern segment of the footbridge, face of the Dam, and top of the parapet will be removed to create a notch in the face of the Dam. However, the proposed demolition is necessary for the completion of the right abutment spillway construction to resolve water capacity deficiencies and offset existing structural concerns that will guarantee the continued use of the Dam as a contributing part of the subsystem. Additionally, the character-defining Ambursen reinforced concrete slab and buttress design and massive scale will not be significantly altered as the proposed construction affects a small portion—one buttress—of the entire face of the Dam.

Most of the proposed changes are better described as repair, maintenance, or stabilization of features. The replacement of the existing spillway does propose the abandonment of the existing spillway and construction of a new right abutment spillway within the Tiger Creek Regulator Dam system. However, the proposed construction is in compliance with the Standards. The spillway's design is a character-defining feature, but its key importance is a as a working part of the Dam as a whole. As proposed, the replacement spillway will support the historic function of the Dam and minimize effects on the design and material integrity of other character-defining features.

The Proposed Project would not result in the introduction of any atmospheric or audible elements that would diminish the integrity of the property's historic features.

Rehabilitation is the most appropriate approach to the Standards.

The Proposed Project conforms with the Rehabilitation Standards. The property would be used as it was historically used (Standard 1). The Proposed Project would not create a false sense of historical development (Standard 3). No previous changes to the property have acquired historic significance (Standard 4 is not applicable). No distinctive materials, features, finishes, and construction techniques would be altered as a result of the project (Standard 5). No chemical or physical treatments are planned as part of the project (Standard 7). Archaeological resources would be protected and preserved in place (Standard 8).

The Proposed Project elements require analysis to show conformance with Rehabilitation Standards 2, 6, 9, and 10. Each of the Proposed Project elements are analyzed for conformance with the applicable standards, which are included in Table 3.11-5. The project activities that primarily have the potential to permanently alter the integrity of the Tiger Creek Subsystem Historic District and its contributor, the Tiger Creek Regulator Dam, is the abandonment of the existing spillway, a character-defining feature of the contributing resource, and the construction of a new right abutment spillway. These activities of the Proposed Project have the potential to most affect the integrity of materials and design.

While the eligibility evaluation of the Tiger Creek Regulator Dam notes that the materials and design are key aspects of the district's integrity, the evaluation of integrity acknowledges that material alterations are key to the continued operation of the system. If alterations are generally compatible in form, utilitarian in design, and maintain the existing type of materials, alterations do not diminish the integrity of materials such that the district or contributors cannot convey significance. Furthermore, in the case of the spillway, reinforced concrete is a ubiquitous material that is designed to require cyclical replacement.

Many resources within the district have been maintained and rehabilitated over time, including repair and replacement of constituent components and upgrade of engineering and operational features to ensure operational integrity. Thus is the case for the Proposed Project and the need to replace the existing spillway with a compatible spillway with a greater water capacity and structural integrity. Further, when functional alterations leave key historic-period design features in place, including massing, plan, and detailing, the contributing resources continue to exhibit their integrity of design through their historic period engineering and aesthetic design features.

Table 3.11-5. Analysis of Proposed Project Elements' Conformance with Rehabilitation Standards 2, 6, 9, and 10 for the Tiger Creek Regulator Dam

Proposed Project Element	Type of Project Activity	Analysis of Conformance with Rehabilitation Standard 2	Analysis of Conformance with Rehabilitation Standard 6	Analysis of Conformance with Rehabilitation Standard 9	Analysis of Conformance with Rehabilitation Standard 10
Temporary Access Roads, Bridges, and Trails	Temporary	The existing access road—Tiger Creek Road—is not character-defining to the Dam. The existing and potential access roads will fall within the Dam boundaries but will not remove distinctive materials or alter features, spaces, and spatial relationships that characterize the historic property or its contributor. The temporary bridges and trails would not cause damage to the Dam, except for the removal of trees and other vegetation within its setting. While the setting is a character-defining feature to the resource, the removal of a small number of trees would not cause a noticeable change to the setting.	Standard 6 does not apply.	The construction of the temporary bridge over the plunge pool would result in the permanent installation of rock slope protection in an area of approximately 30 feet by 20 feet on each bank. While a new feature, the proposed rock protection is consistent with the setting. Furthermore, the materials and the appearance of the plunge pool are not character-defining to the historic property, whereas the operation of the facility is character-defining. The rock slope protection in this area will help insure the operation of the water conveyance system.	This Proposed Project element, if removed in the future, would leave the essential form and integrity of the Dam. The project element conforms with Standard 10.
Mobilization and Site Preparation	Temporary	This Proposed Project element will not remove distinctive materials or alter features, spaces, and spatial relationships that characterize the historic property.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 6 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 9 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 10 does not apply.
Existing Spillway Abandonment and Right Abutment Spillway Construction	Permanent	This Proposed Project element will not remove distinctive materials or alter features, spaces, and spatial relationships that characterize the historic property or its contributor. The materials that will be abandoned are no longer functional in the manner as intended.	Reinforced concrete is a ubiquitous material and the material in-and-of itself does not constitute a "distinctive feature." When deteriorated, reinforced concrete cannot be repaired such that it would remain functional as part of an engineering feature. In-kind replacement of deteriorated concrete is the best alternative to maintain the overall functionality of the spillway as a feature of the Dam.	The construction of the new right abutment spillway will not destroy the historic materials or spatial relationships on the Dam. Though a segment of the Dam will be removed for construction, it is a small section that will not affect the extant use or overall Ambursen reinforced concrete slab and buttress design, both character-defining features. Additionally, the new work will be distinguished from the old with in-	The new right abutment spillway, if removed in the future, would leave the essential form, function, and integrity of the Ambursen reinforced concrete slab and buttress design.

Proposed Project Element	Type of Project Activity	Analysis of Conformance with Rehabilitation Standard 2	Analysis of Conformance with Rehabilitation Standard 6	Analysis of Conformance with Rehabilitation Standard 9	Analysis of Conformance with Rehabilitation Standard 10
			The construction of a new right abutment spillway will utilize in-kind materials (reinforced concrete or shotcrete). In addition, the construction of the new right abutment spillway will maintain similar geometry of the existing spillway by way of intake structure, chute, flip bucket, and plunge pool. Missing features will not be replaced as part of this project.	kind materials and compatible in size, scale, and proportion.	
Construction Phasing	Temporary	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 2 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 6 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 9 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 10 does not apply.
Demobilization and Cleanup	Temporary	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 2 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 6 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 9 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 10 does not apply.
Potential Staging Areas	Temporary	This Proposed Project element will not remove distinctive materials or alter features, spaces, and spatial relationships that characterize the historic property. This project element is outside of the historic property boundaries.	Standard 6 does not apply.	Standard 9 does not apply.	This Proposed Project element is temporary and would be restored to pre-construction conditions. Standard 10 does not apply.
Fire Hazard Prevention	Temporary	This Proposed Project element is precautionary and would not additionally alter pre-construction conditions. Standard 2 does not apply.	This Proposed Project element is precautionary and would not additionally alter pre-construction conditions. Standard 6 does not apply.	This Proposed Project element is precautionary and would not additionally alter pre-construction conditions. Standard 9 does not apply.	This Proposed Project element is precautionary and would not additionally alter pre-construction conditions. Standard 10 does not apply.

As designed, each Proposed Project element and the overall Proposed Project conforms with the Rehabilitation Standards. The Proposed Project would not materially impair any aspects of the resource's integrity. As designed, the Proposed Project would have a less than significant potential impact on the Tiger Creek Regulator Dam.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?

Less than Significant with Mitigation Incorporated. As described in Section 3.11.5.2 *Results*, the records searches for the Proposed Project identified no known archaeological resources within the Area of Analysis and there are no previously identified areas of tribal concern or Native American-affiliated archaeological resources in the Area of Analysis. The pedestrian survey identified three historic-era features, two of which may be affected by Proposed Project activities; however, none of the features appear to have any associated archaeological deposits and do not meet the requirements of a unique archaeological resource under CEQA Guidelines section 15064.5. Any potential impacts would, therefore, be less than significant. Overall, the Area of Analysis has low sensitivity for prehistoric and moderate sensitivity for historic-era archaeological resources, and it is possible that significant buried archaeological materials are present in the Area of Analysis. Disturbance or destruction of such as yet unidentified archaeological resources may result from ground-disturbing activities associated with the Proposed Project. This potential direct effect would be significant; however, it would be reduced to a less-than-significant level with implementation of Mitigation Measures CUL-MM-1 and CUL-MM-2.

Mitigation Measure CUL-MM-1: Conduct Mandatory Cultural Resources Awareness Training for All Project Personnel

Before any ground-disturbing work commences, a qualified archaeologist shall conduct mandatory cultural resources awareness training for all construction personnel. The training shall cover the types of materials that could be encountered and the inadvertent discovery protocol to follow in such an event. If new construction personnel are added to the project, the contractor shall ensure that the new personnel receive the mandatory training before starting work.

Mitigation Measure CUL-MM-2: Stop Work if Previously Unidentified Archaeological Resources are Encountered until a Qualified Archaeologist Assesses the Find and Native American Consultation Has Been Conducted

If previously unknown buried archaeological resources, such as chipped or ground stone artifacts, historic debris, or building foundations are inadvertently unearthed during ground-disturbing activities, work shall stop at the location of the find and all areas within 100 feet of the find until a qualified archaeologist can assess the significance of the find. If avoidance is not possible and the resource is determined to be significant, a qualified archaeologist shall develop a treatment plan in consultation with project stakeholders. If the find is Native American in origin, consultation with local Native American representatives shall be reinitiated to determine appropriate treatment of the resource.

c. Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant with Mitigation Incorporated. No known human remains are present within the Area of Analysis. However, it is possible that buried human remains are present in the Area of Analysis but were not identified during the archaeological surveys. Consequently, the potential exists that human remains could be encountered during ground-disturbing activities associated with the Proposed Project. This direct potential impact would be significant; however, it would be reduced to a less-than-significant level with implementation of Mitigation Measure CUL-MM-3.

Mitigation Measure CUL-MM-3: Stop Work in Case of Accidental Discovery of Buried Human Remains until Procedures in Public Resources Code section 5097 have been Completed

In the event that human remains are discovered, all project-related ground disturbance shall halt within 100 feet of the find and the Amador County coroner shall be notified immediately. If the coroner determines the remains to be Native American in origin, the coroner shall be responsible for notifying the Native American Heritage Commission (NAHC), which shall appoint a most likely descendant (MLD) (Public Resources Code 5097.99). The project applicant and MLD shall make all reasonable efforts to develop an agreement for the dignified treatment of human remains and associated or unassociated funerary objects (CEQA Guidelines 15064.5[d]). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. The MLD shall have 48 hours after being granted access to the site to make a recommendation (Public Resources Code 5097.98). If the MLD does not agree to the treatment method, the project shall follow Public Resources Code section 5097.98(e), which states, “the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.

3.12 Tribal Cultural Resources

3.12.1 Introduction

This section analyzes the Proposed Project's potential impacts related to tribal cultural resources. It describes existing conditions in the Area of Analysis and summarizes the regulatory framework for tribal cultural resources, and it analyzes the potential for the Proposed Project to affect these resources.

3.12.2 Area of Analysis

The Area of Analysis for tribal cultural resources is the same as the Project Area, which consists of three staging areas, the log boom anchor points, and the construction area that is bounded roughly by the Dam to the east, Spur 10 to the north, and the Spur 1 staging area to the southwest.

3.12.3 Existing Conditions

The Area of Analysis is located at the Tiger Creek Regulator Reservoir on Tiger Creek, a tributary to the North Fork of the Mokelumne River, approximately 24 miles northeast of the city of Jackson in Amador County, California. The elevation of the Dam is approximately 3,500 feet above MSL.

3.12.3.1 Cultural Setting

See Section 3.11 *Cultural Resources*, for an archaeological, ethnographic, and historic setting for the Area of Analysis.

3.12.4 Regulatory Setting

The regulatory setting for tribal cultural resources in the Area of Analysis consists of Assembly Bill 52 (AB 52). There are no applicable federal or local regulations, statutes, or policies regarding tribal cultural resources in the Area of Analysis.

3.12.4.1 State Assembly Bill 52

Effective July 1, 2015, AB 52 amended CEQA to require that a lead agency provide notice to those California Native American tribes that request notice of projects proposed by the lead agency and that the lead agency consult with any tribe that responds to the notice within 30 days of receipt with a request for consultation.

Topics that may be addressed during consultation include tribal cultural resources, the potential significance of project impacts, type of environmental document that should be prepared, and possible mitigation measures and project alternatives.

Public Resources Code section 21073 defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the NAHC [Native American Heritage Commission] 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 Public Resources Code defines tribal cultural resources for the purpose of CEQA as either of the following:

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.
   B. Included in a local register of historical resources as defined in subdivision (k) of section 5020.1.
2. 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 a historical resource under CEQA, a tribal cultural resource may also require additional consideration as a historical resource. Tribal cultural resources 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 tribal cultural resources. Furthermore, because a significant effect on a tribal cultural resource is considered a significant impact on the environment under CEQA, consultation is used to develop appropriate avoidance, impact minimization, and mitigation measures.

3.12.5 Methods

3.12.5.1 Assembly Bill 52 Consultation

The State Water Board is the CEQA lead agency for the Proposed Project. Opportunities for consultation letters were sent on January 20, 2023, to the Wilton Rancheria, United Auburn Indian Community of the Auburn Rancheria, Buena Vista Rancheria of Me-Wuk Indians, Yocha Dehe Wintun Nation, and Habematolel Pomo of Upper Lake. No Tribes requested consultation (Bradbury pers. comm.); however, two of the Tribes (the Habematolel Pomo of Upper Lake on February 3, 2023, and the Yocha Dehe Wintun Nation on February 27, 2023) suggested contacting the following tribes: the Buena Vista Rancheria of Me-Wuk Indians, Shingle Springs Rancheria, Jackson Band of Miwuk Indians, and Ione Band of Miwuk Indians. These four Tribes were either already included as part of the AB 52 consultation process or were copied on the responses to the Habematolel Pomo of Upper Lake and Yocha Dehe Wintun Nation Tribes regarding their suggestions. No additional responses were received from any of the additional four Tribes. Therefore, no AB 52 or additional tribal consultation has been conducted.

In the absence of tribal consultation under AB 52, information about potential impacts on tribal cultural resources was drawn from the results of a search of the NAHC Sacred Lands File, an intensive pedestrian survey (described in Section 3.11 *Cultural Resources*) and existing information about known archaeological resources and buried site sensitivity in the Proposed Project vicinity.

3.12.5.2 Sacred Lands File Search and Correspondence with Native American Representatives

On July 17, 2023, ICF, on behalf of PG&E, requested a Tribal Consultation List and review of the NAHC Sacred Lands File for the Area of Analysis. On July 26, 2023, the NAHC replied with a list of 18 Native American contacts representing 11 tribes and a negative result from the Sacred Lands File (i.e., a search of the sacred lands file failed to indicate the presence of any potential tribal cultural resources in the Area of Analysis). On November 10, 2023, PG&E sent letters to all the identified Native American tribes. As of December 2023, no response has been received. PG&E’s Native American consultation is ongoing and will continue throughout the Proposed Project.

3.12.6 Environmental Effects

Potential impacts of the Proposed Project related to tribal cultural resources are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section XVIII, *Tribal Cultural Resources*, asks:

> Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a. 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)?

No Impact. As described in Section 3.12.5.1 *Assembly Bill 52 Consultation*, no Tribes requested to consult on the Proposed Project under AB 52. Results of the NAHC Sacred Lands File search, and an intensive pedestrian survey for the Proposed Project concluded that no tribal cultural resources, which are also historical resources, are in the Area of Analysis. The records search and the survey did identify historic-era resources within the Project Area, but those are evaluated in Section 3.11 *Cultural Resources*, of this IS/MND. Consequently, the Proposed Project would not result in potential impacts on tribal cultural resources that are also historical resources.

b. 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?

No Impact. As described in Section 3.12.5.1 *Assembly Bill 52 Consultation*, no consultation was requested. Results of the NAHC Sacred Lands File search, , and an intensive pedestrian survey for the Proposed Project concluded that no tribal cultural resources, which are also significant resources pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1, are in the Area of Analysis. There would be no potential impact.

3.13 Aesthetics

3.13.1 Introduction

This section analyzes the Proposed Project's potential impacts related to aesthetics. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for aesthetics, and it analyzes the potential for the Proposed Project to affect these resources.

3.13.2 Area of Analysis

The Area of Analysis for visual resources includes a 0.5-mile radius from the Project Area. Middleground views up to three miles from the Project Area will be considered where elevated or more expansive views are present. However, middleground views are not anticipated due to terrain and the vegetated nature of the Project Area. Background views (i.e., views beyond three miles from the Project Area) will not be considered because details become diminished beyond the middleground, and specific project features do not typically stand out in background views. In addition, background views are not present due to terrain and intervening vegetation.

3.13.3 Existing Conditions

As described in Chapter 1, *Introduction*, the Dam is located on Tiger Creek in Amador County, California (Figure 1-1, *Project Location*) on PG&E-owned lands that are under a conservation easement and CAL FIRE lands with PG&E utility easements. The land surrounding the Dam consists of CAL FIRE lands. Representative key views, taken on June 8, 2023, are mapped on Figure 3.13-1, *Key View Map*, and the corresponding key views are included in Figures 3.13-2 through 3.13-5.

The Project Area can be broken down into three distinct areas—the Doakes Ridge staging and spoils site; the Dam area, which includes the Spur 1 staging area; and the Cedar Mill staging area. There are no scenic vistas associated with any of these areas because terrain and intervening vegetation limit views to the immediate foreground, and there are no elevated vantage points that provide expansive views that include the Area of Analysis. Access to the Doakes Ridge staging and spoils site and the Dam area is controlled by locked gates, but limited public access is allowed when the gates are opened. The public uses the Dam and Reservoir shoreline to fish. During the site visit on June 8, 2023, motorcycle dirt bike usage was witnessed taking place along the cleared transmission corridor easement, and cyclists were witnessed using Project Area roadways. However, there are no formal recreation facilities, and no swimming, boating, or float tubes are allowed in the Reservoir. Therefore, viewers primarily include PG&E, CAL FIRE, and SPI employees that are accessing the Doakes Ridge staging and spoils site and the Dam area to maintain and operate project facilities or recreationists that intermittently use the Doakes Ridge staging and spoils site and the Dam area. Viewers associated with the Cedar Mill staging area include residential and commercial viewers and drivers along SR 88 that are in close proximity.

The Doakes Ridge staging and spoils site is located to the south and up the hill from the Dam area. The terrain is gently sloping and densely vegetated with tall Douglas-fir and ponderosa pine, with an understory of green grasses and fallen, orange-brown pine needles. This area contains two existing wooden PG&E buildings with metal roofs that are painted a forest green to blend with the forest canopy (Figure 3.13-2, *Key View 1*). Part of the Doakes Ridge staging and spoils site has already been cleared of trees, has a dirt and gravel lot, and is being used for spoils placement and rock and gravel storage (Figure 3.13-2, *Key View 2*). Underneath the existing tree canopy, there are several downed and decaying trees and a number of tree stumps visible from previous thinning of the canopy or hazard tree removal. The forest floor is also being used to store excess materials and equipment parts (Figure 3.13-3, *Key Views 3 and 4*). As seen in Key View 3, this area is used by PG&E staff for training exercises. Overall, the visual quality of the Doakes Ridge staging and spoils site is moderate because the appearance of the forest is common to this area and the use of the forest floor for materials storage and stockpile results in a slightly degraded visual condition at this site.

The Dam area is comprised of the Dam, an existing spillway structure, canal, Reservoir, and surrounding forest and hillsides. The Spur 1 staging area is downstream of the Dam, just south of the Salt Springs Road bridge over Tiger Creek. The hillsides surrounding the Tiger Creek Regulator Reservoir form a small and narrow valley around the Dam area, where the Reservoir and Dam are the main focal point (Figure 3.13-4, *Key View 5*). The flatwater surface of the Reservoir contrasts against the tall, conical trees of the conifer forest that borders the Reservoir, creating a scenic view. The sky is a prominent feature of this scenic view, where the blues, whites, and greys of the sky and clouds contrast against the browns and greens of the land and vegetation. The Reservoir reflects the quality of the sky and can range from appearing deep blue to dark grey or almost black; it can even reflect the conifer trees and take on a deep green hue. The Dam and existing spillway structure are made of concrete that is weathered and ranges in tone from warm to cool grays. The Dam creates a dramatic visual element in the landscape due to the size and height of the concrete structure and the elevation difference

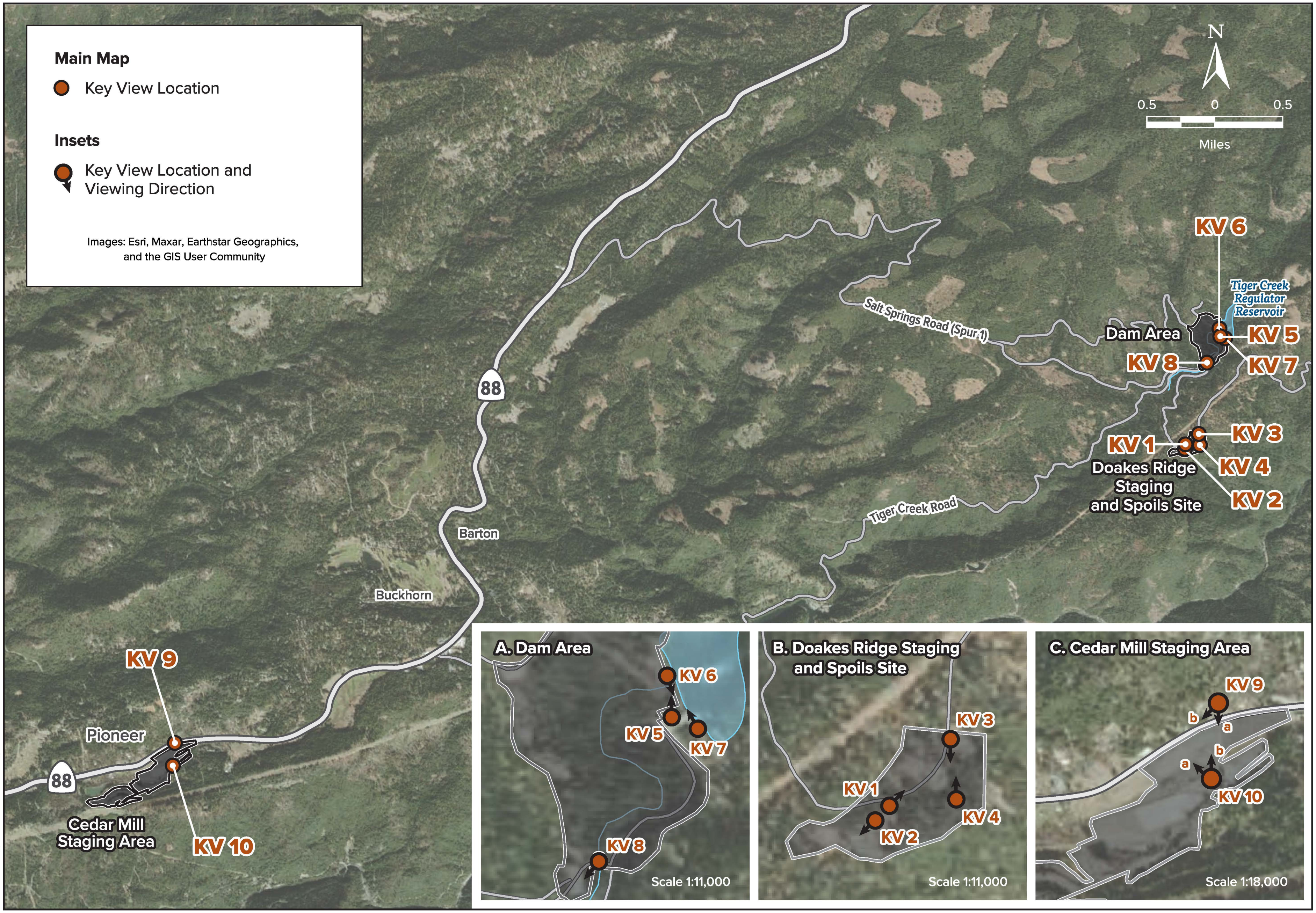

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Figure 3.13-1
Key View Map

Key View 1. View from Salt Springs Road looking northeast toward the PG&E maintenance buildings and proposed spoils disposal area.

Key View 2. View looking southwest toward the existing staging and proposed spoils disposal area located off Salt Springs Road.

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Figure 3.13-2
Representative Key Views—Doakes Ridge Staging and Spoils Site

Key View 3. View from Salt Springs Road looking south toward a PG&E maintenance building and proposed spoils disposal area.

Key View 4. View from under the forest canopy looking north toward a PG&E maintenance building and proposed spoils disposal area.

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Figure 3.13-3
Representative Key Views—Doakes Ridge Staging and Spoils Site

Key View 5. View from near the existing spillway structure looking north toward the dam and reservoir.

Key View 6. View from the dam walkway looking southeast toward the electrical control building, radio tower, and existing spillway structure.

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Figure 3.13-4
Representative Key Views—Dam Area

Key View 7. View from Spur 7 looking northwest toward the existing spillway structure, dam, reservoir, and location of the proposed spillway.

Key View 8. View from Tiger Creek Road looking southwest toward the proposed Spur 1 Staging Area.

Figure 3.13-5
Representative Key Views—Dam Area

between the Reservoir surface and creek channel at the base of the Dam that can be seen when approaching or crossing the Dam. The existing spillway structure also provides visual interest because viewers can see the water entering the outlet channel and flowing into the bathtub inlet or within the canal when the canal is in use. A small electrical building and a radio tower are present on the east side of the Dam, but these features are placed in the landscape in a manner in which they do not dominate or detract greatly from views (Figure 3.13-4, *Key View 6*). A small area surrounding the west side of the Dam is cleared of trees and is made up of steep grassy slopes (Figure 3.13-5, *Key View 7*). Fallen and cut trees are visible in this area that have aged to a grayish silver color, and there are some areas of exposed rocks and gravels that are dark gray. The Spur 1 staging area is cleared of vegetation, is graveled, and contains rock piles and is similar to a roadway pull-off area (Figure 3.13-5, *Key View 8*). The locations of the proposed temporary and permanent access road travel through dense forest that greatly limits views. Viewers on Salt Springs Road, at the Spur 1 staging area, or in proximity to the southern ends of the temporary and permanent access roads do not have existing views of the Dam or proposed spillway area due to terrain and intervening vegetation. Views of the Dam from Tiger Creek Road are also very limited because dense forest vegetation and the southern face of the existing spillway structure limit views toward the Dam. Direct views of the Dam and proposed spillway area are only available to viewers who access the Dam area from the western terminus of Spur 7 or to those who have parked at the end of Tiger Creek Road and used the stairs and walkway to cross the canal to access the Dam area. Existing lighting levels at the Dam are very low and consist of seven outdoor lights around the left abutment that come on at dusk and stay on until sunrise and are controlled by photocells. Overall, the visual quality of the Dam area is moderately high due to visual interest created by the Dam and existing spillway structure combined with quality views of the water surface of the Reservoir surface backdropped by the surrounding forested slopes.

The Cedar Mill staging area is located along SR 88, which is an Officially Designated State Scenic Highway; however, the site is disturbed (Figure 3.13-6, *Key Views 9 and 10*) (California Department of Transportation 2019). Therefore, residential and commercial viewers and drivers along SR 88 are accustomed to the existing disturbed nature of the Cedar Mill staging area. Visual conditions at the site consist of areas paved with asphalt, areas paved with concrete that has grasses growing through pavement joints and cracks, and a paved access road that travels along the southern edge of the site boundary. The portion of the site near SR 88 is flat and contains metal structures, metal storage containers, snowcat vehicles, transformers, and miscellaneous equipment (Figure 3.13-7, *Key Views 11 and 12*). The site is also used for materials and parts storage and discarded construction materials and parts. PG&E staff use this portion of the site for parking during training activities that take place near the Dam, as seen on the day of the site visit. The southern half of the Cedar Mill staging area is at a slightly higher elevation than the portion along SR 88, but mature conifer trees growing along the gentle slopes, between this area and the flat area along SR 88, screen most views of the elevated area from SR 88 and nearby residents and businesses. Overall, the visual quality of the Cedar Mill staging area is moderately low due to the degraded visual character of the site.

Recreationists accessing Doakes Ridge and the Dam area are likely to have a high visual sensitivity for changes in the natural landscape because they are more likely to place high value on and have a high regard for the natural environment. However, visual access is intermittent and recreational viewers are aware that the Dam serves a utilitarian purpose and that it is owned, managed, and operated by PG&E. PG&E, CAL FIRE, and SPI workers also comprise the viewers who have visual access to the Project Area. These workers tend to be more focused on their tasks at hand but are also likely to enjoy the setting due to the views it affords. Therefore, their sensitivity is considered to be moderate. Residential and commercial viewers and drivers along SR 88 that are in close proximity to the Cedar Mill staging area are likely to have moderate sensitivity to changes at this site due to their familiarity with existing conditions at the site.

3.13.4 Regulatory Setting

3.13.4.1 Federal

There are no federal scenic byways or designated Wild and Scenic Rivers associated with the Proposed Project (Federal Highway Administration 2023; National Wild & Scenic Rivers System 2023). Therefore, there are no federal regulations pertaining to aesthetic resources that are applicable to the Proposed Project.

3.13.4.2 State

California Wild and Scenic Rivers

The California Wild and Scenic Rivers Act (Public Resources Code sections 5093.50 et seq.) designates the North Fork Mokelumne River, from 1,000 feet downstream of the Tiger Creek Afterbay Dam to SR 26, as a California-designated Wild and Scenic River. However, this segment of the river is over four miles away and does not have views of, and would not be affected by, the Proposed Project.

Key View 9a. View from State Route 88 looking south toward the proposed Cedar Mill Staging Area.

Key View 9b. View from State Route 88 looking southwest toward the proposed Cedar Mill Staging Area.

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Figure 3.13-6
Representative Key Views—Cedar Mill Staging Area

Key View 10a. View from the proposed Cedar Mill Staging Area looking northwest toward the proposed mobile batch plant location and State Route 88.

Key View 10b. View from the proposed Cedar Mill Staging Area looking north toward the proposed mobile batch plant location and State Route 88.

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Figure 3.13-7
Representative Key Views—Cedar Mill Staging Area

State Scenic Highways

SR 4 and SR 88 are Officially Designated State Scenic Routes (California Department of Transportation 2019). However, SR 88 is approximately 3 miles away and SR 4 is approximately 15 miles away, and neither has views of, nor would be affected by, visual changes resulting from the Proposed Project at the Doakes Ridge staging and spoils site or the Dam area. However, the Cedar Mill staging area would be visible from SR 88.

3.13.4.3 Local

Amador County General Plan

The *Amador County General Plan* recognizes that the county's natural and scenic beauty is valuable in promoting tourism and the quality of life in the county. In addition, the definition of forestlands in the Amador County General Plan identifies that aesthetics is a resource associated with forestlands to be managed to benefit the public. However, there are no policies in the Amador County General Plan that directly relate to forestland management for aesthetics. The Circulation and Mobility Element identifies that SR 88 is an Amador County-designated scenic highway and contains the following goal and policy pertaining to aesthetic resources (Amador County 2016):

- **Goal CM-4:** Maintain and enhance the visual quality and scenic views along designated scenic corridors; and
    - **Policy CM-4.1:** Maintain visual quality and scenic views along designated scenic corridors through project review and adoption of a scenic highway ordinance.

3.13.5 Environmental Effects

Potential impacts of the Proposed Project related to aesthetics are discussed in the context of State CEQA Guidelines Appendix G checklist. Checklist section I, *Aesthetics*, asks whether the project would result in any of the following conditions.

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

No Impact. Project implementation would not damage any views associated with scenic vistas because, as described under Section 3.13.3 *Existing Conditions,* there are no scenic vistas associated with the Project Area. There would be no potential impact.

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

Less than Significant. Project implementation would not damage any scenic resources or change views from a scenic highway. As described under Section 3.13.4 *Regulatory Setting*, visual changes resulting from the Proposed Project at the Doakes Ridge staging and spoils site and the Dam area would not be visible from any federal-, state- or county-designated scenic roadways (California Department of Transportation 2019; Federal Highway Administration 2022). However, the Cedar Mill staging area would be visible from SR 88. During construction, the Cedar Mill staging area would be used as the location for the mobile batch plant that would consist of hoppers, conveyors, and mixers; testing laboratory; and material stockpiles up to 20 feet high. The site would also be used for additional material staging, crew and craft vehicle parking, temporary construction facilities such as field offices and storage containers, and equipment parts drop-off and maintenance. As described under Section 3.13.3 *Existing Conditions*, the site is already disturbed, is used for materials and parts storage, is used for parking during training activities, and contains metal structures and equipment that look similar to how a concrete batch plant would look. Viewers passing the Cedar Mill staging area along SR 88 are accustomed to the current site conditions, and the proposed conditions during construction would be in keeping with the industrial-looking nature of the site and consistent with what viewers would expect to see at the site. The site would be used for approximately 16 months, so visual changes associated with construction would be temporary. Once construction is over, the mobile batch plant and any remaining materials would be removed from the Cedar Mill staging area. Therefore, there would be no potential permanent visual impacts on views along SR 88 associated with the Proposed Project. Overall, potential impacts associated with the Proposed Project would be less than significant.

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. The Proposed Project would be located entirely within the boundaries of a nonurbanized area. Therefore, the Proposed Project would not conflict with applicable zoning and other regulations governing scenic quality in an urbanized area, and there would be no impact. Discussion of this topic is, therefore, excluded from further discussion in this analysis.

Public access to the Doakes Ridge staging and spoils site and Dam area would be closed during construction. Therefore, the public would not have views of construction activities taking place at these areas, and there would be no impact to public views at these locations during construction. The lack of public access during construction would not be perceived negatively because viewers accessing this area are accustomed to this location being closed at the discretion of PG&E. Therefore, impacts associated with no visual access during construction would be less than significant.

The mobile batch plant would be constructed and operated during construction at the Cedar Mill staging area, and the site would also be used for staging. The Cedar Mill staging area is visible from SR 88 and to residents and businesses located immediately north and east along SR 88 from approximately postmile[1] 29.95 to postmile 30.41. Viewers along SR 88 and adjacent residents and businesses are accustomed to the existing site conditions, which are already disturbed. The site is currently used for materials and parts storage, parking during training activities, and contains metal structures and equipment that look similar to how a concrete batch plant would look. Proposed conditions during construction would be in keeping with the industrial-looking nature of the site and consistent with what viewers would expect to see at the site. The site would be used for approximately 16 months, so visual changes associated with construction would be temporary. Once construction is over, the mobile batch plant and any remaining materials would be removed from the Cedar Mill staging area. Therefore, there would be no permanent visual potential impacts on views associated with the Proposed Project that would be seen during operation at the Cedar Mill staging area, and potential impacts associated with construction would be less than significant.

Once in operation, the public would see the visible changes resulting from construction of the Proposed Project at the Doakes Ridge staging and spoils site and the Dam area. Changes at the Doakes Ridge staging and spoils site would consist of tree removals to the south of Salt Springs Road and replacement with a mounded landform from spoils disposal placement. Upon completion of construction, any disturbed spoils areas would be covered with a combination of temporary cover (mulch) and means to establish permanent vegetative stabilization (e.g., seed, fertilizer, soil amendments, etc.) (Pacific Gas and Electric Company Construction Stormwater Group 2017). Therefore, the exposed soil would be

[1] A postmile measures the length of a state or federal route, in miles, through each county, and postmile markers are physically located along these routes. The measurement of each route resets at zero upon entering a new county. Postmiles may be measured using Caltrans' Postmile Services web-based, interactive tool.

seeded so that the mound would be covered with grasses. The tree removal and spoils disposal area would be adjacent to an area that has already been cleared of trees and is being used for spoils placement and rock and gravel storage. Underneath the existing tree canopy, there are several downed and decaying trees and a number of tree stumps visible from previous thinning of the canopy or hazard tree removal. The forest floor is also being used to store excess materials and equipment parts. Removal of trees in this area would open up the canopy along this small section of Salt Springs Road. However, such openings are common in forested areas where tree management occurs, viewers visiting forested areas are accustomed to such openings, and existing openings occur further north along the roadway. In time, small shrubs and trees would recolonize the area and soften the appearance of the area that has been cut. Because viewers are accustomed to harvest practices on forested lands and the spoils would be seeded, it is anticipated that vegetation removal and spoils placement would result in potential impacts that are less than significant.

Visual changes at the Dam area would include the presence of the proposed spillway, tree removal areas, access roads, and log boom and the existing spillway structure that would be abandoned in place. The proposed spillway structure would introduce an additional concrete structure to the west side of the Dam. The proposed spillway structure would appear roughly twice the length and width of the existing structure, and the new concrete would stand out more in contrast to the weathered concrete of the existing Dam and spillway structures. However, the new concrete would weather and appear much like existing conditions over time. Removal of trees in the Dam area would open up the forest canopy to the west of and below the Dam and along the permanent and temporary access road routes (refer to Figure 2-4, *Timber Harvest and Timberland Conversion Areas*). However, such openings are common in forested areas where tree management occurs, and viewers visiting forested areas are accustomed to such openings created by harvest practices. Such openings are not present along Tiger Creek Road, but they are visible along Salt Springs Road, Spur 1, and Spur 10. The temporary access road would be abandoned, and the four temporary bridges would be removed. However, the rock slope protection, installed for the temporary bridge at the downstream end of the existing plunge pool, would remain in place. Although the temporary access road would be allowed to recolonize with trees and shrubs, softening the appearance of the area that has been cut over time, the majority of tree removals would result in the permanent conversion to non-timberland use. This would increase the visibility of Tiger Creek from the walkway across the Dam, and the permanent access road would be visible where it connects to Tiger Creek Road. However, views of rock slope protection would not be visible from the Dam walkway due to intervening terrain, and the rock slope protection is not likely to be visible from Tiger Creek Road near the Lower Tiger Creek Canal due to the remaining tree cover along the roadway. The rock slope protection may be visible only if viewers are walking near the existing spillway that would be abandoned, but it would weather in a short period of time and blend with the existing rock slope protection. Views of the Dam and proposed spillway would likely not be visible due to the curvature of the permanent access road and remaining forest canopy that would act to screen views of the proposed spillway and vegetation removal areas below the Dam from Tiger Creek Road. Abandoning the existing spillway structure in place would retain the feature in the landscape but create a flat concrete surface where water previously flowed by capping the bathtub inlet with a steel plate or reinforced concrete slab. Other small modifications, such as bulkheads installed at the siphon intakes and vent pipes and a concrete wall closing off the canal where the radial gate is currently located would result in negligible visual changes. The new log boom would look very similar to the existing log boom, only it would be longer and placed farther north of the existing log boom. Therefore, it is anticipated to be a very minor, negligible visual change to the landscape.

Although the proposed spillway structure would be larger than the existing structure, and tree removal would open up the area in proximity to the Dam and along the permanent access road, viewers are not likely to view this addition and these changes to the visual landscape as negative, including sensitive recreational viewers. This is because all viewers are aware that this land is owned, operated, and managed by PG&E and are likely to understand that such changes to the landscape are upgrades to Reservoir operations that increase the safety of the Dam. Given that most viewers are aware of the current need to increase this safety, due to recent failures at Oroville Dam, the social climate is such that the general public supports modifications that increase the safety of existing dams. Therefore, it is not likely that viewers would perceive such changes to the landscape negatively. On the contrary, most viewers are likely to be supportive of such changes if it means safety of the Dam is increased, because it would mean that developed and natural areas downstream of the Dam are not at risk due to failure of the spillway or Dam. Therefore, it is anticipated that permanent visual changes to the landscape associated with the Dam area would result in potential impacts that are less than significant.

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

Less than Significant. Project construction would not occur at night, and mobile batch plant operations would typically begin at 8:00 a.m. but could start as early as

7:00 a.m. Therefore, the Proposed Project would not introduce any temporary sources of light or glare that would negatively affect views during construction. Potential impacts resulting from changes in light and glare associated with construction would be less than significant.

During operation, the Doakes Ridge staging and spoils site would not have any new sources of lighting added. However, there would be some modified lighting associated with the dam area. The existing seven outdoor lights that are located around the left abutment of the dam would be removed. New lighting would be provided along the existing dam crest, across the proposed spillway pedestrian footbridge, down to the dam LLO, and adjacent to the new permanent access road turnaround and parking area to improve safety. New and replacement lights would be shielded to focus lighting only on the areas that require illumination for safety purposes and would be designed to meet the intent of dark-sky requirements. LED lighting would avoid the use of blue-rich white light lamps and use a correlated color temperature that is no higher than 3,000 Kelvin. In addition, most of the new and replacement lights would be controlled by a switch and would only be turned on when deemed necessary by an operator. The remaining lights would be controlled by photocells and would stay on all night only in key areas to provide safer access to the facility. The lights that would remain on all night would be motion-controlled such that they would be dimmed until the motion detectors are activated. The motion detectors would be calibrated to provide enough sensitivity to detect the presence of personnel but not so sensitive to be activated by small animals under normal conditions. With these measures, the new lighting would not result in a substantial change in nighttime lighting at the dam, and lighting levels would remain very low. Materials used to construct the proposed spillway and to cap the bathtub inlet would be visually in keeping with the existing materials in the Project Area. Changes in glare from the removal of trees at the Doakes Ridge staging and spoils site and the dam area would be negligible because the existing trees surrounding the spillway area would still provide a great deal of shade to the Project Area. Therefore, these changes in light and glare would be minor. Potential impacts during operation would be less than significant.

3.14 Transportation

3.14.1 Introduction

This section analyzes the Proposed Project's potential impacts related to transportation. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for transportation, and it analyzes the potential for the Proposed Project to affect these resources.

3.14.2 Area of Analysis

For the purposes of the transportation analysis, the Area of Analysis consists of the Project Area and associated on-road vehicle access routes. As described in Section 2.5.2 *On-Road Vehicle Use*, it is assumed that haul truck trips would originate in the greater Sacramento area then travel east on SR 88 through Amador County. Trucks would enter and exit the Cedar Mill staging area directly from SR 88. Trucks would access the Spur 1 staging area from SR 88 using either Salt Springs Road (Spur 1) or Tiger Creek Road. Worker and vendor trips are assumed to originate within Amador County and would use the same roads as described for the haul truck trips. SR 88, Salt Springs Road (Spur 1), and Tiger Creek Road are shown in Figure 1-1, *Project Location.* The greater Sacramento area is considered in this analysis from a high level only because the Proposed Project's haul trucks would only be passing through the region and the haul truck travel routes in the Sacramento region are not known.

3.14.3 Existing Conditions

Travel in Amador County is primarily automobile-oriented due to the rural nature of the local communities, low development densities, and limited options for using alternative modes of transport. Vehicle miles traveled (VMT) is a computed value which correlates to the extent of an area's reliance on private automobiles. VMT is calculated by adding together the length of each trip made in each county, typically over a set period (e.g., one year). VMT is often used to estimate vehicle emissions and effects on air quality. In Amador County, over 77 percent of the daily VMT is served by the state highway system, while approximately 19 percent is served by county roadways and the remainder is served by roads operated by the United States Forest Service, California Department of Parks and Recreation, or the United States Bureau of Indian Affairs (Amador County 2016:CM-2).

A small portion of Amador County's population walks or uses bicycles as their means of transportation; formal pedestrian facilities such as sidewalks and crosswalks are largely limited to developed communities, central business districts, and some newly developed commercial and residential areas, and few designated bicycle facilities presently exist in Amador County. Amador Transit provides a fixed-route shuttle service between the cities of Sutter Creek and Jackson, as well as Dial-a-Ride service for passengers qualified under the Americans with Disabilities Act and a commuter route between Amador County and downtown Sacramento (Amador County Transportation Commission 2020:45–48).

Within the Area of Analysis, the Amador County General Plan's roadway classification for SR 88 is "Arterial," which means it links cities and larger towns (and other traffic generators, such as major resort areas) and contributes to an integrated network of arterial highways providing interstate and intercounty service. Both Salt Springs Road (Spur 1) and Tiger Creek Road are classified as "Local Roadways," except for a short segment of Tiger Creek Road (approximately 0.33 mile) near its intersection with SR 88, where it is classified as a "Minor Collector." Local Roadways provide access to adjacent properties and provide service to travel over relatively short distances as compared to higher order facilities. Minor Collectors serve adjacent and nearby communities with shorter routes and travel distances than Major Collectors (Amador County 2016:CM-5 and Figure CM-1). Most of Salt Springs Road (Spur 1) is on SPI' private property. As described in Section 1.3 *Project Setting*, access to the Dam and Reservoir area is controlled by locked gates on both Salt Springs Road (Spur 1) and Tiger Creek Road. The gate locations are shown on Figure 1-1, *Project Location*, and Figure 2-5, *Access Roads*.

The only remaining rail service in Amador County is limited to a commercial freight line between the city of Galt and the industrial mineral resource operations near the city of Ione. This freight line is not within the Area of Analysis. Heavy trucks handle almost all of the goods movement entering, exiting, and transiting through Amador County. This truck traffic consists of five to nine percent of average daily traffic on the regional transportation system (Amador County Transportation Commission 2020:48–49).

Within the greater Sacramento area, where haul truck trips are anticipated to originate, the existing transportation system supports a broad range of passenger and freight travel. The roadway system includes three interstate highways, several state highways, and numerous local roadways that serve various combinations of automobile, truck, pedestrian, bicycle, and transit travel (Sacramento Area Council of Governments 2019a:2-5).

3.14.4 Regulatory Setting

The following sections summarize key state and local regulations, laws, and policies relevant to transportation in the Area of Analysis.

3.14.4.1 State

California Department of Transportation

Caltrans has authority over the state highway system, including freeways, interchanges, and arterial routes. Caltrans operates and maintains state highways in Amador and Sacramento Counties.

Senate Bill 375

SB 375 provides guidance regarding curbing emissions from cars and light trucks to help the State comply with AB 32. There are four major components to SB 375. First, SB 375 requires regional GHG emissions targets. CARB's Regional Targets Advisory Committee guides the adoption of targets to be met by 2020 and 2035 for each metropolitan planning organization (MPO) in the state. Second, MPOs are required to create a sustainable communities strategy (SCS) that provides a plan for meeting regional targets. The SCS and the regional transportation plan (RTP) must be consistent, including action items and financing decisions. Third, SB 375 requires regional housing elements and transportation plans to be synchronized on eight-year schedules. Finally, MPOs must use transportation and air emissions modeling techniques that are consistent with the guidelines prepared by the California Transportation Commission.

CEQA Section 21099(b)(1) (Senate Bill 743)

Section 21099(b)(1) requires the Governor's Office of Planning and Research (OPR) to develop revisions to the CEQA Guidelines, thereby establishing criteria for determining the significance of transportation impacts from projects that "promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses." CEQA section 21099(b)(2) states that, upon certification of the revised guidelines for determining transportation impacts, pursuant to section 21099(b)(1), automobile delay, as described solely by level of service or similar measures of vehicular capacity, or vehicular traffic congestion shall not be considered a significant impact on the environment under CEQA.

Previously, level of service measured the average amount of delay experienced by vehicle drivers at an intersection during the most congested time of day, while the new metric—VMT—measures the total number of daily miles traveled by vehicles on the roadway network and thereby the impacts on the environment from those miles traveled. SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts on drivers to measuring the impact of driving.

In January 2016, OPR published for public review and comment its *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*, recommending that project transportation impacts be measured using a VMT metric (Governor's Office of Planning and Research 2016). In December 2018, OPR issued the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory), which contains OPR's recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. The Technical Advisory provides screening criteria for certain project types, including a daily trip threshold to define "small projects" with respect to their potential to result in significant transportation effects. It also states that "absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with an SCS or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact" (Governor's Office of Planning and Research 2018).

The Technical Advisory outlines VMT significance thresholds for different project types not meeting the screening criteria. For example, it would be reasonable to conclude that residential and office projects demonstrating a VMT level that is 15 percent less than existing conditions (2015 through 2018 average) are consistent with statewide VMT reduction targets. The VMT level is commonly assessed on a per capita or per service population basis. With respect to retail land uses, any net increase of VMT may indicate a significant transportation impact.

In January 2019, changes to the CEQA statutes and guidelines went into effect, including a new section 15064.3 that states that VMT is the most appropriate measure of transportation impacts, and includes updated criteria for analyzing those impacts. This shift in transportation impact criteria is expected to better align transportation impact analysis and mitigation outcomes with the State's goals to reduce GHG emissions, encourage infill development, and improve public health through use of more physically active modes of transportation.

3.14.4.2 Local

Amador County Transportation Commission

The Amador County Transportation Commission (ACTC) was designated in 1972 as the Regional Transportation Planning Agency for the Amador County Region, which consists of Amador County and its five incorporated cities (Amador City, Ione, Jackson, Plymouth, and Sutter Creek). The ACTC's primary responsibilities encompass transportation planning, which includes maintaining and implementing the county's RTP, transportation programming, and administration of the Transportation Development Act. The ACTC also assists in development and delivery of the Amador County Region's priority transportation improvement projects and provides technical assistance with traffic impact analyses for proposed development projects and land use plans to Amador County, Cities, and Caltrans (Amador County Transportation Commission 2020:1, 2). The ACTC's *Transportation Impact Study Guidelines* (ACTC 2009:1) describes the types of projects for which a transportation impact study must be completed. A transportation impact study is required for proposed development projects that would generate 200 or more daily trips, are inconsistent with the Amador County General Plan land use and/or zoning designations and could potentially generate greater levels of traffic than the general plan land use designations; or would generate greater levels of traffic than assumed for the area within the 2025 Amador County Traffic Model.

Amador County General Plan

The Circulation and Mobility Element of the Amador County General Plan identifies four goals, with a number of attendant policies, that are related to circulation and infrastructure needs in Amador County (Amador County 2016). These goals and policies are directed towards guiding long-term planning efforts and development projects and focus on maintaining adequate regional transportation facilities and a safe, efficient, and comprehensive traffic circulation system; maintaining and enhancing the visual quality and scenic views along designated scenic corridors; and providing transportation alternatives to the automobile.

Amador County Regional Transportation Plan

The Amador County RTP was prepared by the ACTC (2020). Its purpose is to provide a vision for the region by identifying and prioritizing the transportation improvement projects and programs that are needed by the region. The RTP also presents a Regional Improvement Strategy that establishes how the ACTC will help address the region's future transportation challenges through specific goals, policies, and objectives. These goals, policies, and objectives are generally related to improving multi-modal transportation systems; maintaining level of service standards on regional roadways; improving the safety, operations, and surface conditions of local roads; providing efficient public transportation service; improving opportunities for bicycle and pedestrian travel; achieving safe and efficient movement of goods; implementing transportation improvements that will result in regional air quality improvements; and providing careful stewardship of regional transportation funds.

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is the MPO for the greater Sacramento region, which includes the Counties of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba, as well as 22 cities (including the Cities of Davis, West Sacramento, Winters, and Woodland). As an MPO, SACOG is required to prepare a long-range transportation plan for all modes of transportation (including public transit, automobile, bicycles, and pedestrians) every four years.

2020 Metropolitan Transportation Plan/Sustainable Communities Strategy

SACOG is responsible for the preparation of, and updates to, the metropolitan transportation plan/sustainable communities strategy (MTP/SCS) and the corresponding metropolitan transportation improvement program (MTIP) for the six-county Sacramento region. The MTP/SCS for the Sacramento region serves as an RTP and pro-actively links land use, air quality, and transportation needs. The MTP/SCS is federally required to be updated every four years. The SACOG Board of Directors adopted the 2020 MTP/SCS and accompanying documents at a special board meeting on November 18, 2019 (Sacramento Area Council of Governments 2019b).

The congestion management process (CMP) and MTP/SCS are developed as a single integrated document. As part of the MTP/SCS, SACOG's CMP addresses the six-county Sacramento region and the transportation network therein. The CMP focuses on travel corridors with significant congestion and critical access and mobility needs to identify projects and strategies that meet CMP objectives.

Transportation projects are nominated by local agencies and analyzed against community priorities identified through public outreach, as well as technical performance and financial constraints. The output of the MTP/SCS and CMP is a list of projects with identified lead agencies and completion years that is presented in Appendix A-1 of the MTP/SCS. The adopted list and schedule of projects for the MTP/SCS subsequently informs the development of the MTIP.

3.14.5 Environmental Effects

Potential impacts of the Proposed Project related to transportation are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section XVII, *Transportation*, asks whether the Proposed Project would result in any of the following conditions.

a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

No Impact. The Proposed Project would construct a spillway and an approximately 0.5-mile-long access road at the Dam. It would not result in permanent or long-term changes to traffic volume on local roadways; as described in Section 2.2.6 *Operations and Maintenance*, once the Proposed Project is complete, PG&E would operate the Reservoir as was done prior to construction, meaning that vehicle use associated with operations and maintenance of the Dam would be the same as existing conditions, just split between the existing access road (Tiger Creek Road) and the new permanent access road, depending on the side of the Dam requiring maintenance. During construction, haul trucks would be present; however, as described in Section 2.6 *Best Management Practices*, PG&E will implement a traffic control plan to ensure that traffic would continue to flow smoothly and not conflict with any circulation policies or plans. Additionally, the Proposed Project does not meet any of the ACTC’s transportation impact study criteria and therefore preparation of a transportation impact study is not required. There would be no impact.

b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less than Significant. During construction of the Proposed Project, the movements of personnel, equipment, and material would result in temporary increases in traffic in the Area of Analysis. The vehicles associated with Proposed Project implementation are anticipated to travel on SR 88, Salt Springs Road (Spur 1), and Tiger Creek Road. The highest number of Proposed Project-related vehicle trips is anticipated to occur when the “Crest Structure Construction” phase overlaps with the “Plunge Pool Construction” phase. During this period, construction personnel, haul trucks, and vendor vehicles could make up to 106 one-way trips per day in the Area of Analysis (38 one-way haul-truck trips, 16 one-way vendor trips, and 52 one-way worker trips). Therefore, the number of Proposed Project-related vehicle trips would not exceed the screening criteria threshold of 110 trips per day (Governor’s Office of Planning and Research 2018). Further, as described in Section 2.2.6 *Operations and Maintenance*, once the Proposed Project is complete, PG&E would operate the Reservoir as was done prior to construction. No long-term operational increases in VMT would occur. For these reasons, potential VMT impacts related to the Proposed Project would be less than significant.

c. Substantially increase hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The geometric design of the proposed permanent access road must and would meet the standards of Amador County, FERC, and DSOD—within each agency's jurisdiction. Compliance with each respective standard would prevent geometric design-related hazards. The Proposed Project would not involve any uses incompatible with the roadways in the transportation Area of Analysis. During construction, Proposed Project-related vehicle use on publicly accessible roadways would be limited to on-road vehicles only. Further, as described in Section 2.2.6 *Operations and Maintenance*, once the Proposed Project is complete, PG&E would operate the Reservoir as was done prior to construction, meaning that public roadway uses would be the same as existing conditions. There would be no impact.

d. Result in inadequate emergency access?

Less than Significant. There would be no lane closures involved with the Proposed Project that would constrict emergency access. Haul trucks accessing the Project Area would have the potential to briefly slow traffic during construction workday hours. However, the maximum number of haul truck round trips per day would be only 19 during the busiest period of construction, and a high volume of truck traffic already traverses Amador County's regional transportation system (including SR 88) daily. Additionally, PG&E will implement BMP-4, *Implement Traffic Control Plan*, to ensure traffic conflicts are avoided (see Section 2.6.4 *BMP-4: Implement Traffic Control Plan,* for more information). Therefore, emergency access would be maintained during construction of the Proposed Project. This potential impact would be less than significant.

3.15 Wildfire

3.15.1 Introduction

This section analyzes the Proposed Project's potential impacts related to wildfire. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for wildfire, and it analyzes the potential for the Proposed Project to affect these resources.

3.15.2 Area of Analysis

The Area of Analysis is the same as the Project Area, which consists of three staging areas, the log boom anchor points, and the construction area that is bounded roughly by the Dam to the east, Spur 10 to the north, and the Spur 1 staging area to the south (Figure 2-1, *Project Area*).

3.15.3 Existing Conditions

A wildland fire, or wildfire, is an uncontrolled, unplanned fire in a wildland. This section discusses the existing wildfire risk in the Area of Analysis.

Wildfires generally burn up a slope faster and more intensely than on flat ground (FIRESafe MARIN 2020). Therefore, steeply sloped terrain can represent more of a wildfire risk depending on the type of vegetation and hydrologic conditions present. The Proposed Project is located in a rural area of the foothills of the Sierra Nevada range, approximately 24 miles northeast of the city of Jackson in Amador County, California. The topography of the Project Area varies. The Dam area, specifically, the base of the Dam, is situated at approximately 3,400 feet above MSL in a narrow valley with moderately steep to very steep valley walls, and the Doakes Ridge staging and spoils site is perched on the ridge to the south of the Dam area at approximately 3,700 feet above MSL. Land cover in this area is predominantly Sierra Nevada mixed conifer forest. The Cedar Mill staging area is located at approximately 3,000 feet above MSL in a valley featuring more gentle slopes and is surrounded by the foothill community of Pioneer.

CAL FIRE identifies FHSZs within both SRAs and LRAs and maps these severity zones based on modeling of expected fire behavior over a 30- to 50-year period. The categories of FHSZs are "very high," "high," and "moderate." The area of analysis falls within an SRA categorized as a very high FHSZ (Figure 3.15-1, *State Responsibility Areas*, and Figure 3.15-2, *Fire Hazard Severity* Zones).

The wildland-urban interface (WUI) is the area where structures and other human development meet or intermingle with undeveloped wildland, and it is where wildfires have their greatest impact on people. The Dam area and the Doakes Ridge staging and spoils site are not located within the WUI, but the Cedar Mill staging area is located within an “intermix” WUI, which refers to areas where housing and wildland vegetation intermingle (United States Department of Agriculture, Forest Service 2018).

California has recently experienced a number of catastrophic wildfires caused by multiple ignition sources. These fires have not occurred within the Project Area but have led to a heightened awareness of potential ignition sources, methods to reduce wildfire risk, and the need for staffing and equipment resources across local, state, and federal levels. Previous wildfires that have encroached on Amador County include the Butte, Caldor, and Electra fires. The 2015 Butte fire primarily burned in Calaveras County and crossed over into Amador County, burning seven percent within Amador County (Amador County 2016:S-9). A similar instance occurred with the 2021 Caldor fire where the fire did not primarily burn in Amador County, but crossed the county’s boundary with El Dorado County (CAL FIRE 2023a). The 2022 Electra fire burned 4,470 acres and was primarily located in Amador County. The cause is undetermined and there were no fatalities or structural damages (CAL FIRE 2023b).

3.15.4 Regulatory Setting

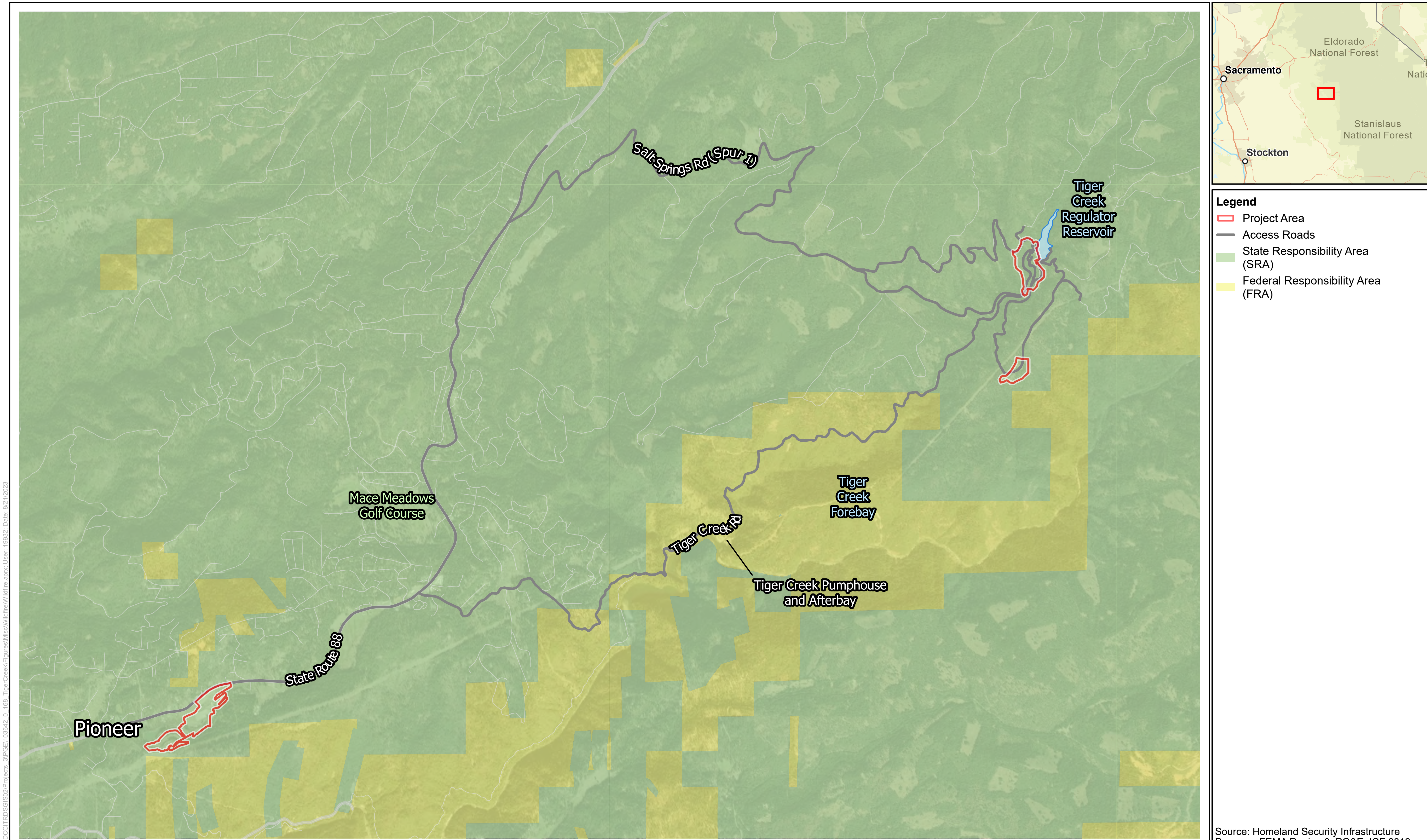
3.15.4.1 State

Fire Hazard Severity Zones

Government Code section 51178 and PRC sections 4201–4204 require CAL FIRE to identify FHSZs in the state. The FHSZs are derived from the Fire Hazard Severity Scale, which was created by CAL FIRE and is used for evaluating and designating potential fire hazards in wildland areas. Government Code section 51179 requires local agencies to designate, by ordinance, high and very high FHSZs in their jurisdiction. The FHSZs are derived from the Fire Hazard Severity Scale, which was created by CAL FIRE and is used for evaluating and designating potential fire hazards in wildland areas. The Project Area is located in a very high FHSZ as shown in Figure 3.15-2, *Fire Hazard Severity Zones*.

State Responsibility Areas

The areas where the state has financial responsibility for wildland fire protection are designated as SRAs and CAL FIRE has a legal responsibility to provide fire



0 0 1 1 Miles
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Figure 3.15-1
State Responsibility Areas

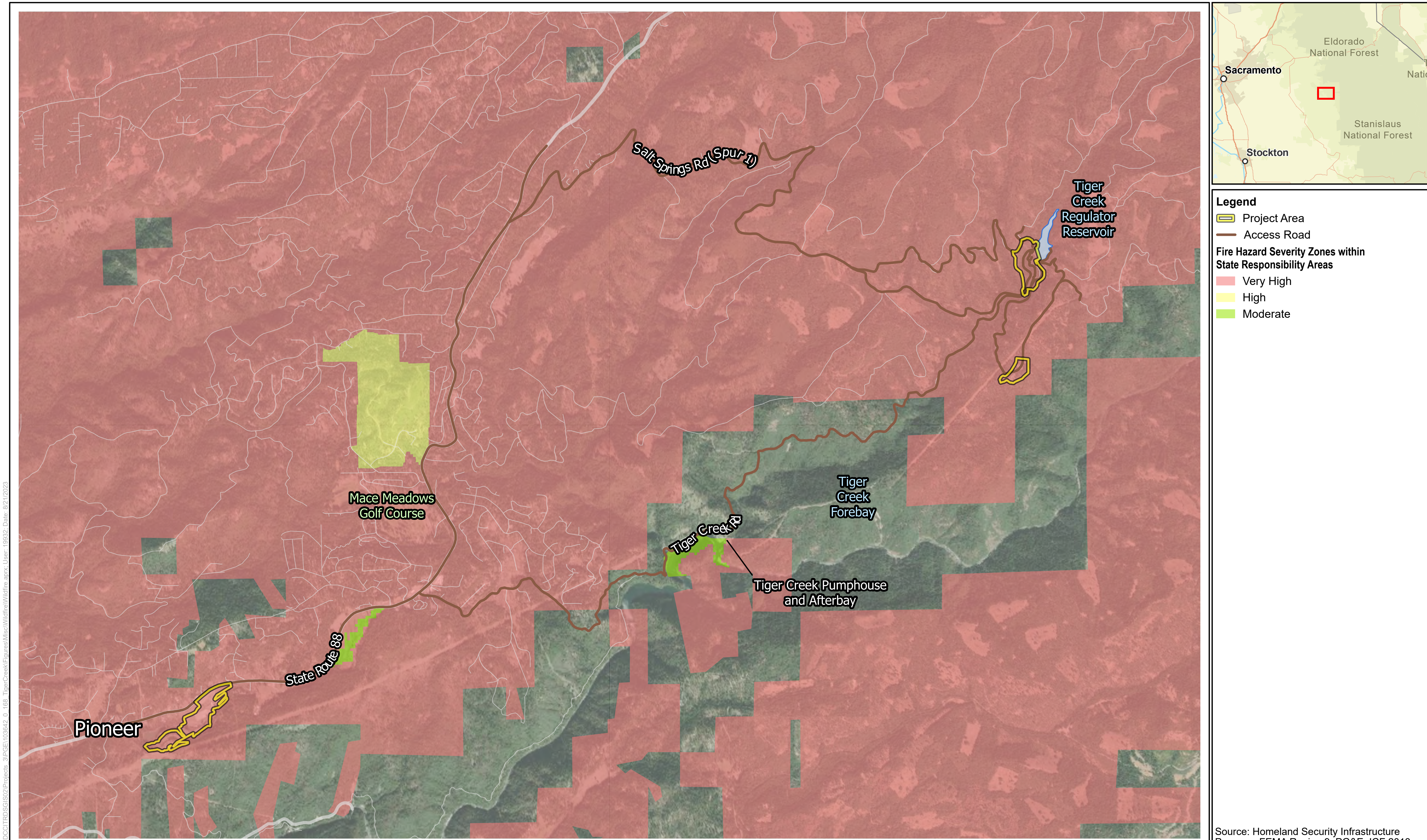

Figure 3.15-2
Fire Hazard Severity Zones

protection in SRAs. These lands are identified as SRAs based on land ownership, population density, and land use. CAL FIRE does not have responsibility in populated areas or agricultural lands. As shown in Figure 3.15-1, *State Responsibility Areas*, the entirety of the Project Area is in an SRA.

3.15.4.2 Local

Amador County General Plan

The Economic Development, Land Use, and Safety Elements of the Amador County General Plan have the following goals, policies, and program related to wildland fires that are relevant to the Proposed Project (Amador County 2016):

- **Goal E-12:** Promote sustainable forest management that ensures continued timber production, water quality and the timber land base, and reduces the risk of catastrophic fires;
    - **Policy E-12.1:** Encourage the continued economic and ecologic viability of timber harvesting and promote creation of defensible space and community wildfire protection;
- **Goal LU-12:** Reduce fire risks to current and future structures;
    - **Policy LU-12.2:** Ensure that new roadways meet County standards for firefighting access. These standards include minimum width, surface, grade, radius, turnaround, turnout, and bridge standards, as well as limitations on one-way. roads, dead-end roads, driveways, and gate entrances;
- **Goal S-2:** Reduce fire risks to current and future structures;
    - **Policy S-2.4:** Work with fire districts or other agencies and property owners to coordinate efforts to prevent wildfires and grassfires including consolidation of fuel buildup abatement efforts, firefighting equipment access, and water service provision;
    - **Policy S-2.5:** Work with fire districts and other agencies to educate the public regarding fire risks and periods of elevated or extreme risk due to drought or other factors; and
- **Program P-12:** Emergency Response (Final Environmental Impact Report Mitigation Measure 4.8-2a)
    a. In order to maintain effective emergency and disaster response and reduce hazards related to fire, flood, and public safety emergencies, the County will implement and periodically update disaster plans, including the Multi-Hazard Mitigation Plan and Emergency Operations Plan, to meet federal, state, and

local emergency requirements. This effort will include planning to coordinate response actions, and the identification and planning for evacuation routes for dam failure, wildfire, and flooding.

3.15.5 Environmental Effects

Potential impacts of the Proposed Project related to wildfire are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section XX, *Wildfire*, asks whether the Proposed Project would result in any of the following conditions.

a. Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant. As discussed in Section 3.10 *Hazards and Hazardous Materials*, the Project Area is outside the designated Amador County Evacuation Routes. The two main access roads would be available to construction workers during construction and would not impair an emergency response plan or emergency evacuation plan. In addition, BMP-4: *Implement Traffic Control Plan*, will allow emergency access, if needed, during construction. During operations and maintenance, the Proposed Project would not impair or interfere with any adopted emergency response or emergency evacuation plans. This potential impact would be less than significant.

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks of, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less than Significant. As described in Section 3.15.3 *Existing Conditions*, the topography of the Project Area varies, and elevations generally range from 3,022 feet to 3,772 feet above MSL. Steep hills and mountains are also nearby. Public access to the Project Area would be closed during construction of the Proposed Project. There are no residences within or adjacent to the Dam area or the Doakes Ridge spoils and staging site. However, the Cedar Mill staging area is within the "intermix" WUI of the unincorporated community of Pioneer. Residences, local businesses, and the Pioneer Elementary School are located less than 0.5 mile from the Cedar Mill staging area. Activities that would occur within the Cedar Mill staging area include mixing concrete and holding stockpiles. These activities are not anticipated to exacerbate the risk of exposing nearby occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

Construction would involve the use of heavy equipment. Ignition sources in the area during construction could include equipment striking a rock or vegetation coming into contact with hot equipment or vehicles. PG&E will implement BMP-3: *Implement*

Fire Hazard Prevention Measures to reduce the potential for fire. BMP-3 includes requiring the use of fire-suppression equipment and tools; equipping vehicles with fire response/suppression equipment; establishing procedures and policies for controlling any onsite fires; and daily inspections to ensure all work areas are clear of debris and trash and that flammable or combustible materials are not allowed to accumulate. In the unlikely event of an accidental fire, construction personnel on site would have adequate preparation, equipment, and plans to reduce the possibility of exacerbating wildfire risks and therefore, construction personnel would not be exposed to a substantial increase in pollutant concentrations as a result of wildfire or the risk of the uncontrolled spread of a wildfire.

Public access to the Reservoir is limited and is open to the public when weather, wildfire precautions, or operation necessities do not compromise public safety. When the Dam and Reservoir area is open to the public, only fishing is allowed. Camping and campfires are prohibited, which helps prevent fires, thus limiting the potential of pollutant exposure to the nearby public and the risk of uncontrolled spread of a wildfire.

The Proposed Project would not have permanent occupants; therefore, operations would not expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. This potential impact would be less than significant.

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 on the environment?

Less than Significant. Blasting may be used to excavate foundations for the concrete spillway structures and could temporarily exacerbate fire risk. However, implementation of BMP-3: *Implement Fire Hazard Prevention Measures* will require fire control actions taken to prevent wildland fires during construction. This BMP includes PG&E’s latest guidelines described in Utility Standard TC-1464S, *Preventing and Mitigating Fires While Performing PG&E Work* (Pacific Gas and Electric Company 2022), as well as actions such as equipping construction sites with fire prevention and suppression tools and implementing safety protocols for hot work.

The Proposed Project includes construction of an approximately 0.5-mile-long permanent access road to connect Tiger Creek Road to the Dam. As described in Section 2.2.3 *Vegetation Removal and Timberland Conversion*, trees within 20 to 50 feet of proposed improvements, including the permanent access road, would be removed for safety and maintenance purposes. Activities associated with maintenance and operation of the spillway would occur as was done prior to the project. There would be minor differences, none of which would indefinitely exacerbate fire risk more than already exists. Therefore, the installation and maintenance of associated infrastructure would not exacerbate fire risk and potential impacts would be less than significant.

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. There are no permanent occupants within the Project Area and there are no proposed structures where employees would permanently work. In the event of a wildland fire in the Project Area, no one would be displaced from their residences because no residences are present. Recreational visitors and operation and maintenance staff are not permanent occupants and, as described in Section 1.3 *Project Setting*, the Dam area is closed to public access when public safety is compromised due to wildfire precautions. Implementation of BMP-3: *Implement Fire Hazard Prevention Measures* will ensure appropriate measures are taken to prevent wildland fires. As such, the possibility of significant runoff, post-fire slope instability, or drainage changes resulting from a wildfire would be greatly reduced and would not expose the construction workers, operations staff, or recreational visitors to a significant risk involving wildland fire.

Further, the principal purpose of the Proposed Project is to improve the stability of the Dam by constructing a new spillway to successfully pass design flood flows. The Proposed Project would improve long-term downstream flooding conditions which would thereby decrease the exposure of people and structures to significant risk of flooding, including in post-fire conditions. This potential impact would be less than significant.

3.16 Agriculture and Forestry Resources

3.16.1 Introduction

This section analyzes the Proposed Project's potential impacts related to agriculture and forestry resources. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for agriculture and forestry resources, and it analyzes the potential for the Proposed Project to affect these resources.

3.16.1.1 Area of Analysis

For the purpose of determining potential impacts on agriculture and forestry resources due to implementation of the Proposed Project, the Area of Analysis is the same as the Project Area. Accordingly, it consists of three staging areas, the log boom anchor points, and the construction area that is bounded roughly by the Dam to the east, Spur 10 to the north, and the Spur 1 staging area to the south (Figure 2-1, *Project Area*).

3.16.2 Existing Conditions

The Project Area is located in the foothills of the Sierra Nevada range in Amador County. The dominant vegetation type in the Project Area is Sierra Nevada mixed conifer forest. A large portion of the Project Area (i.e., land surrounding the Reservoir) is zoned as "Timberland Preserve Zone" and has been logged in the past with periodic entries for commercial timber harvesting.

There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (collectively, Farmland), as categorized by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), in the Project Area. Rather, land in the Project Area is categorized as "Other Land", which is land not included in any other FMMP mapping category and includes brush, timber, low density rural housing, and water bodies smaller than 40 acres (California Department of Conservation 2023).

3.16.3 Regulatory Setting

The following section summarizes the key state and local regulations, plans, and policies relevant to forestry resources in the Area of Analysis. There are no federal plans, policies, regulations, or laws relevant to the analysis of forestry resources for the Proposed Project.

3.16.3.1 State

California Forest Practice Act of 1973

Tree removals required for the construction of the Proposed Project prompt compliance with the Forest Practice Act (California Public Resources Code, Division 4, Part 2, Chapter 8), which requires a THP to be submitted to CAL FIRE for commercial timber harvesting on all nonfederal timberlands. Under the Forest Practice Act, “timberland” is defined as land, other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection, 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 (California Public Resources Code section 4526). Timber harvest plans ensure that timber harvesting activities comply with California’s Forest Practice Regulations and must be approved by CAL FIRE prior to the start of those activities. The Forest Practice Act also requires that a TCP be sought from CAL FIRE for any property that would be taken out of timber production or that would be converted from timberland to non-timber growing use.

California Public Resources Code Section 12220(g)

California Public Resources Code 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.

California Government Code Section 51104(g)

California Government Code section 51104(g) defines timberland production zone (TPZ) as an area which has been zoned pursuant to section 51112 or section 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. “Compatible use” is any use that does not significantly detract from the use of the property for, or inhibit, growing and harvesting timber and includes watershed management; management for fish and wildlife habitat or hunting and fishing; a use integrally related to the growing, harvesting and processing of forest products; the erection, construction, alteration, or maintenance of gas, electric, water, or communication transmission facilities; grazing; or a residence or other structure necessary for the management of land zoned as timberland production.

3.16.3.2 Local

Amador County General Plan

The Amador County General Plan (Amador County 2016a) Economic Development Element includes a goal and associated policies relevant to the management and production of timber resources, as well as the protection of timber resources from incompatible uses:

- **Goal E-12**: Promote sustainable forest management that ensures continued timber production, water quality and the timber land base, and reduces the risk of catastrophic fires;
  - **Policy E-12.1**: Encourage the continued economic and ecologic viability of timber harvesting and promote creation of defensible space and community wildfire protection;
  - **Policy E-12.2**: Maintain Timber Production Zone (TPZ) areas as a renewable source of timber and wood products;
  - **Policy E-12.3**: Encourage value-added activities (such as sawmills, cogeneration plants, timber-based manufacturing, and other uses) which contribute to the economic viability of timber production; and
  - **Policy E-12.4**: Protect timber resource areas from incompatible uses.

3.16.4 Environmental Effects

Potential impacts of the Proposed Project related to agriculture and forestry resources are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section II, *Agricultural and Forestry Resources*, asks whether the Proposed Project would result in any of the following conditions.

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. There is no Farmland in the Area of Analysis. Therefore, the Proposed Project would not convert Farmland to non-agricultural use and there would be no potential impact.

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

Less than Significant. As discussed in Section 3.17 *Land Use and Planning*, a portion of the Area of Analysis is zoned Single Family Residential – Agricultural. As multiple uses, in addition to farming, are permitted in areas with this zoning designation, including water storage and reservoirs and associated on-site excavation, the implementation of the Proposed Project would not conflict with existing zoning for agricultural use. There are no lands within the Area of Analysis under Williamson Act contract; therefore, implementation of the Proposed Project would not conflict with a Williamson Act contract. As such, this potential impact is less than significant.

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))?

Less than Significant. Tree removal would be required for the proposed spillway, permanent access road, as well as the permanent spoils disposal area at the Doakes Ridge staging and spoils site under the Proposed Project. Trees within 20 to 50 feet of the proposed spillway and permanent access road would be cut down to stumps, and trees and other vegetation within the excavation limits would be removed entirely. Additional trees would be removed in the area between the proposed spillway, Dam, and existing spillway. Most of the tree removal areas would be permanently converted to non-timberland use because Proposed Project features would be constructed in their place, or because trees would not be allowed to regrow around the facilities of the Proposed Project for safety and maintenance purposes. Some tree removal would be required to make the temporary access road passable. However, the temporary access road would be abandoned after construction is completed and trees would be allowed to regrow within the road's footprint. Tree removal areas are shown in Figure 2-4, *Timber Harvest and Timberland Conversion Areas*.

Most land where trees would be permanently removed meets the definition of "Timberland" under California Public Resources Code section 4526 and under California Government Code section 51104(f). Further, much of the land where trees would be removed is zoned "Timberland Production" (TPZ) as defined by California Government Code section 51104(g)[1]. California Government Code

[1] Per California Government Code section 51104(g), "timberland production zone" is the same as "timberland preserve zone" as identified by county and city general plans.

section 51104(g) allows for the erection, construction, alteration, or maintenance of water transmission facilities in a TPZ without a special use permit or variance. Therefore, although implementation of the Proposed Project would result in timberland conversion in a TPZ, this would not represent a zoning conflict because the Proposed Project entails both construction and alteration of PG&E's existing Tiger Creek water transmission facilities (i.e., spillway construction and decommissioning) and construction of the permanent access road would facilitate maintenance of the new spillway crest structure, which is a TPZ compatible use. In compliance with the Forest Practice Act, PG&E will prepare and implement a THP in coordination with CAL FIRE and will apply for a TCP for permanent conversion of timberland as a result of implementation of the Proposed Project. This potential impact would be less than significant.

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

Less than Significant. As previously discussed, implementation of the Proposed Project would require removal of trees; most of the 15 acres of trees to be removed in the Area of Analysis are on lands managed as forest land for timber production. Permanent removal of trees on forest land would be limited to the number of trees and areas necessary for the construction of the proposed spillway and associated features and the permanent access road, as well as for safety and maintenance of these permanent Proposed Project features. As described in Chapter 1, *Introduction*, elements of the Proposed Project would be constructed on land donated to CAL FIRE by PG&E; this land includes utility easements that allow PG&E to operate and maintain existing and future hydroelectric facilities and to construct improvements necessary to meet water delivery requirements for power generation. In addition, a portion of the Area of Analysis is on land owned by PG&E and under conservation easement, which restricts development of the land to protect and preserve "beneficial public values" of the property, including forest resources.

Implementation of the Proposed Project in general, and tree removal, specifically, would not result in a substantial loss of forest land in Amador County given that it is estimated that there are over 218,000 acres of forest land in the county (Amador County 2016b). Further, removal of trees with implementation of the Proposed Project would not result in a significant change in the overall existing forest structure and would not interfere with the management of, or minimize the benefits to fish, wildlife, and the public from, surrounding forest lands. In compliance with the Forest Practice Act, PG&E will prepare and implement a THP in coordination with CAL FIRE and will apply for a TCP for permanent conversion of timberland as a result of implementation of the Proposed Project. Tree removal would be conducted in a manner consistent with a THP, which would ensure that logging activities are in compliance with California's Forest Practice Rules, and which are approved by CAL FIRE. For these reasons, this potential impact is less than significant.

e. Involve other changes in the existing environment that, 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. Implementation of the Proposed Project would not involve other changes in the existing environment that would result in the conversion of forest land to non-forest use beyond that discussed previously in this section. There is no Farmland in the Area of Analysis and therefore the Proposed Project would not convert Farmland to non-agricultural use. There would be no potential impact.

3.17 Land Use and Planning

3.17.1 Introduction

This section analyzes the Proposed Project's potential impacts related to land use and planning. It describes existing conditions in the Area of Analysis and summarizes the overall regulatory framework for land use and planning, and it analyzes the potential for the Proposed Project to affect these resources.

3.17.2 Area of Analysis

For the purpose of determining potential impacts on land use and planning due to implementation of the Proposed Project, the Area of Analysis is the same as the Project Area. Accordingly, the Area of Analysis consists of three staging areas, the log boom anchor points, and the construction area that is bounded roughly by the Dam to the east, Spur 10 to the north, and the Spur 1 staging area to the south (Figure 2-1, *Project Area*).

3.17.3 Existing Conditions

The Proposed Project would be constructed in Amador County, approximately 24 miles northeast of the city of Jackson, at the Reservoir on Tiger Creek. The Project Area (Figure 2-1, *Project Area*) is situated in a narrow valley in the Sierra Nevada foothills surrounded by mixed conifer forest. The nearest communities to the northern Project Area are the unincorporated communities of Barton and Buckhorn, which are approximately 4.5 and five miles southeast of the Reservoir, respectively. The existing Cedar Mill property in the southernmost portion of the Project Area is in the unincorporated community of Pioneer.

The Dam is on land owned by PG&E and under a conservation easement held by the Mother Lode Land Trust. The conservation easement restricts development of the land to protect and preserve beneficial public values but includes an express reservation of PG&E's right for continued operation, maintenance, and improvements of existing and future hydroelectric facilities and associated water delivery facilities located on, above, or under the property. PG&E also owns or has use agreements for the nearby staging and laydown areas of the Proposed Project. Surrounding lands are owned by CAL FIRE. Elements of the Proposed Project would be constructed on CAL FIRE land; PG&E donated this property to CAL FIRE and it includes utility easements that allow PG&E to operate and maintain existing and future hydroelectric facilities and to construct improvements necessary to meet water delivery requirements for power generation. Some of the existing access roads to and around the Dam area pass through lands owned by SPI. PG&E has access rights and road use agreements with SPI for use of these roads.

The Land Use Element of the Amador County General Plan contains goals, policies, and implementation programs that guide the physical development of county land and designates land and zoning uses. The Amador County zoning code regulates development type and intensity throughout the unincorporated county and is the primary tool used to implement the Amador County General Plan. Table 3.17-1 identifies the land use and zoning designations and associated allowable uses for areas where permanent Proposed Project facilities would be located. Like the permanent Proposed Project facilities, the temporary Proposed Project facilities would mostly occur on lands designated as Open Recreation and General Forest. These temporary facilities would include an access road to the plunge pool and the lower end of the spillway chute, four temporary bridges, access trails for construction equipment, and the Spur 1 staging area. The land use designation for the Proposed Project's Cedar Mill staging area is Industrial (zoned Manufacturing).

Table 3.17-1. Amador County Land Use and Zoning Designations for Permanent Proposed Project Facilities

Land Use Designation	Allowable Uses per Land Use Designation	Zoning Designation	Allowable Uses per Zoning Designation	Proposed Project Facilities (acres[a])
Open Recreation	• Public, quasi-public, and private recreation uses, either exclusively or in combination with compatible uses; • Resource uses such as managed forestry, mining, and grazing; and • Residential, resort, and commercial recreation uses under appropriate controls and zoning.	Single Family Residential-Agricultural	Multiple uses are permitted that are suited to residential and agricultural land uses including single-family dwelling; crop and tree farming; general farming; wells, water storage and reservoirs, including on-site excavation or removal of materials for construction thereof.	Log boom anchor (0.0003) Crest structure (0.09) Plunge pool (0.05) Permanent access road (0.73) Rock slope protection (0.03)
General Forest	• Lands in both public and private ownership where significant timber production resources have been identified. Conversion to other uses and encroachment of incompatible land uses that may adversely affect timber production are discouraged.	Timberland Preserve (Timber Production Zone)	These uses are allowed by right without special use permit or variances: • Growing and harvesting of timber; • Management for watershed; • Management for fish and wildlife habitat or hunting and fishing; • Uses integrally related to growing, harvesting, and processing of forest products;	Spoils disposal (6.21) Dam notch and foot bridge (0.01) Log boom anchor (0.0003) Crest structure (0.09) Chute and flip bucket (0.26) Plunge pool (0.16) Permanent access road (1.03)

Land Use Designation	Allowable Uses per Land Use Designation	Zoning Designation	Allowable Uses per Zoning Designation	Proposed Project Facilities (acres[a])
			• Erection, construction, alternation, or maintenance of gas, electric, water or communication transmission facilities; • Grazing; and • One single-family residence zoned pursuant to section 51112 of the Government Code	

[a] Acreage rounded to nearest one-hundredth of an acre unless otherwise noted.
Sources: Amador County 2016; Amador County Code Title 19, Chapter 19.24.

3.17.4 Regulatory Setting

The following sections summarize the key state and local regulations, plans, and policies relevant to land use and planning in the Area of Analysis. There are no federal plans, policies, regulations, or laws relevant to the analysis of land use and planning for the Proposed Project.

3.17.4.1 State

California Planning and Zoning Laws

California law requires that cities and counties adopt and implement a comprehensive, long-term general plan for the physical development of the city or county (Government Code section 65300 et seq.). General plans must include development and conservation policies that are designed to guide the city's or county's long-term development. State law mandates that general plans address land use, housing, circulation, open space, conservation, noise, and public safety, as well as other topics that may be of interest to the city or county.

California Zoning Law (California Government Code, section 65800 et seq.) establishes that zoning ordinances, which are laws that outline permitted uses for land within a specific zone district, are required to be consistent with the applicable general plan.

3.17.4.2 Local

Amador County General Plan

Land use and planning in the Area of Analysis is guided by the Land Use Element of the Amador County General Plan (Amador County 2016). Land use designations presented in the Land Use Element identify the types and nature of development permitted throughout the unincorporated area of Amador County. The Land Use Element includes policies to provide a framework for land use patterns and building sites. In addition, the Safety Element addresses flood hazards, as well as other natural conditions and human activities that potentially threaten public health and safety in Amador County. The following Land Use Element policy and Safety Element goal are relevant to the Proposed Project:

Land Use

- **Policy LU-1.1:** Protect existing land uses and public facilities from encroachment by incompatible land uses.

Safety

- **Goal S-1:** Prevent loss of life or property from flooding.

Amador County Zoning Ordinance

The Amador County Zoning Ordinance (Title 19 of the Amador County Code) serves as the primary implementation tool for the Amador County General Plan. The zoning ordinance establishes standards for the use and development of property in Amador County and, per state law, provisions of the ordinance are required to be consistent with the land use and development policies of the Land Use Element of the Amador County General Plan. The zoning code outlines regulations that indicate which land uses are permitted in various zones.

3.17.5 Environmental Effects

Potential impacts of the Proposed Project related to land use and planning are discussed in the context of CEQA Guidelines Appendix G checklist. Checklist section XI, *Land Use and Planning*, asks whether the Proposed Project would result in any of the following conditions.

a. Physically divide an established community?

No Impact. The Proposed Project would occur on undeveloped lands and entails construction of a new spillway near the Dam's right abutment on Tiger Creek to mitigate known spillway deficiencies, which will allow the Dam to safely pass a flood event of up to 6,000 cfs. Other associated features include a permanent access road connecting Tiger Creek Road to the right abutment of the Dam, cofferdam, new log boom, lighting, and abandonment of the existing spillway. The Area of Analysis is not located within an established community and access to nearby communities would remain unchanged during and after construction of the Proposed Project. There would be no lane closures during construction and PG&E will implement a traffic control plan to ensure traffic conflicts are avoided (see Section 2.6.4 *BMP-4: Implement Traffic Control Plan,* for more information). Therefore, implementation of the Proposed Project would not physically divide an established community and there would be no potential 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?

Less than Significant. Permanent facilities of the Proposed Project would include a new spillway structure; a 15-foot-wide access road connecting Tiger Creek Road to the right abutment of the Dam just above the new spillway crest structure; a turnaround and parking area at the terminus of the access road; rock slope protection placement on the banks of the existing plunge pool; and a spoils disposal area near existing PG&E buildings on Doakes Ridge south of Salt Springs Road. These facilities would be sited on lands designated as Open Recreation (Single Family Residential-Agricultural zone) and General Forest (Timberland Preserve [Timber Production Zone]) (Table 3.17-1). As described in Section 2.2.3 *Vegetation Removal and Timberland Conversion*, tree removal would be required and approximately 15 acres of trees would be permanently removed on Open Recreation and General Forest lands. These permanent conversion areas are shown in Figure 2-4, *Timber Harvest and Timberland Conversion Areas*. Most of the tree removal areas would be permanently converted to non-timberland use because Proposed Project features would be constructed in their place, or because trees would not be allowed to regrow around the Proposed Project features for safety and maintenance purposes.

Local land use policies related to a specific resource area are discussed in this IS/MND under other sections such as noise, air quality, and transportation, as appropriate. In addition, the technical sections of this IS/MND identify specific policies that guide the determination of environmental impact significance (e.g., noise levels and VMT). The Proposed Project would be consistent with the Amador County General Plan Safety Element Goal S-1 of preventing the loss of life or property from flooding because the purpose of the Proposed Project is to allow the Dam to safely pass a flood event of up to 6,000 cfs through construction of a new spillway to meet FERC requirements for passing the PMF without overtopping the Dam.

Implementation of the Proposed Project would not result in a change in the land use designation or zoning of the Area of Analysis. Water storage and reservoirs, including on-site excavation or removal of materials for construction thereof, are an allowable use on lands designated as Open Recreation, and to the extent that public safety is not compromised (e.g., due to weather, wildfire precautions, or operational necessities), the public would still be allowed to fish from the Dam and Reservoir shoreline after the Proposed Project is completed. The erection, construction, alteration, or maintenance of water transmission facilities in a TPZ is allowed by right without a special use permit or variance, per the Amador County Zoning Ordinance. Therefore, although implementation of the Proposed Project would result in timberland conversion in a TPZ, this would not represent a land use planning, policy, or regulation conflict because the Proposed Project entails both construction and alteration of PG&E's existing Tiger Creek water transmission facilities (i.e., spillway construction and decommissioning) and construction of the permanent access road would facilitate maintenance of the new spillway crest structure, which is a TPZ compatible use. As such, the Proposed Project would be generally consistent with the Land Use Element of the Amador County General Plan. This potential impact is less than significant.

4.1 Cumulative Projects

CEQA Guidelines section 15355 defines cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” Pursuant to CEQA Guidelines section 15130(b)(1)(A), the following projects have been identified as those past, present, and probable future projects that could produce related or cumulative impacts, including those projects outside the control of the lead agency. These projects (cumulative projects) are listed below:

- **Upper Blue Lake Dam Seismic Retrofit Project.** PG&E undertook the Upper Blue Lake Dam Seismic Retrofit Project to improve the seismic stability of Upper Blue Lake Dam, approximately 30 miles east-northeast of the Tiger Creek Regulator Dam. Upper Blue Lake is in Alpine County within the upper watershed of the Mokelumne River, and is also operated by PG&E as part of the Mokelumne River Project (FERC Project No. 137). The project consisted of placement of a 50-foot-wide by 175-foot-long rock fill buttress on the upstream side of the dam, extension of two LLO pipes by approximately 50 feet, and reconfiguration of the intake structure and trash rack. Construction of the improvements to Upper Blue Lake Dam was completed in 2019 (ICF International 2019);
- **Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project.** PG&E plans to construct the Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project at Lower Blue Lake in Alpine County to reduce the risk of dam instability associated with seepage through and under the dam. The project would involve installation of a filter, seepage collection system, and rock fill buttress along the downstream earthen embankment of the dam. Lower Blue Lake is approximately 30 miles east-northeast of the Tiger Creek Regulator Dam. As part of this project, PG&E would also replace an instream flow release weir downstream of the dam that has degraded over time. Lower Blue Lake is within the upper watershed of the Mokelumne River, and is also operated by PG&E as part of the Mokelumne River Project (FERC Project No. 137) (ICF 2023). Construction is anticipated to occur from July 2025 to October 2025;
- **Amador County Ingress, Egress and Education Plan.** CAL FIRE is implementing the Amador County Ingress, Egress and Education Plan, which involves clearance of roadside vegetation (fuels) on private roads within

unincorporated regions west of Dew Drop in Amador County. On identified private roads, all roadside vegetation up to 10 inches dbh is to be removed within 20 feet of the road edge on either side. All trees greater than 10 inches dbh within the project area are to be limbed up to a minimum height of 10 feet. Removal would be achieved by the hand cutting of vegetation with the cut vegetation chipped on-site and blown back onto the cut-bank and road edge. This roadside vegetation clearance project includes the maintenance of some or all of the treated areas in perpetuity by a variety of methods, including re-cutting and chipping, mechanical mastication, or the selective use of herbicides. Implementation of the project began in 2022 (California Department of Forestry and Fire Protection 2022);

- **Caples Spillway Channel Stabilization.** The Caples Spillway takes water released from the Caples Lake Auxiliary Dam, approximately 26 miles northeast of the Tiger Creek Regulator Dam, down to Caples Creek, which is a tributary to the American River. As a condition of its FERC license for the El Dorado Hydroelectric Project (FERC Project No. 184), the El Dorado Irrigation District (EID) was required to stabilize the spillway to accommodate flows of up to 60 cfs. The 3,000-foot-long Caples Spillway Channel is a natural channel consisting of an upper cascading segment comprised of cobbles and boulders and a lower pool-riffle segment. The channel is used from May through July, when inflow to Caples Lake exceeds the capacity of the Caples Lake Dam outlet or EID flushes a build-up of pollen and debris from the Caples Lake Auxiliary Dam. Through this project, EID restored and stabilized two channel areas using rock-and-log stabilization measures and vegetative treatments. Construction of the Caples Spillway Channel Stabilization project was completed in 2020 (State Water Resources Control Board 2020);
- **SR 88 Pine Grove Corridor Improvement Project.** The California Department of Transportation (Caltrans), Amador County, and the Amador County Transportation Commission propose to construct intersection modifications, lane reconfiguration, pedestrian and bicycle improvements, and general highway improvements along SR 88 to improve safety through the town of Pine Grove. This segment of SR 88 is located along the corridor that may be used by the construction contractor to import materials to the Proposed Project's staging areas. Construction of the SR 88 Pine Grove Corridor Improvement Project is anticipated to be completed by fall 2024 (California Department of Transportation 2023a); and
- **SR 88 Roadway Improvements.** Caltrans proposes to make roadway improvements along SR 88 between post mile 5.5 and post mile 14.3 in Amador County (in the vicinity of the community of Martell). The work would include cold-

planing the asphalt pavement and overlaying the road surface; digging out spot locations to repair localized failures; adding shoulder backing; removing and replacing roadway signage; replacing culverts and end treatments; replacing down drains; and upgrading existing guardrails (California Department of Transportation 2021). This segment of SR 88 is located along the corridor that may be used by the construction contractor to import materials to the Proposed Project's staging areas. Caltrans anticipates that construction would begin in December 2024 and would be completed in December 2027 (California Department of Transportation 2023b).

4.2 Cumulative Impacts by Resource

The following analysis focuses on the potential for impacts identified in Chapter 3, *Environmental Setting and Impacts*, to make a considerable contribution to significant cumulative impacts. The Proposed Project would not cause significant long-term impacts on the resources discussed in Chapter 3. However, the Proposed Project has the potential to incur temporary, short-term impacts during the construction period. The potential cumulatively considerable impacts on these resources, in combination with potential impacts from the projects described in Section 4.1 *Cumulative Projects* (where applicable) are discussed below.

4.2.1 Hydrology and Water Quality

The cumulative impact context for evaluation of potential impacts on hydrology and water quality resources primarily includes only the improvements associated with the Proposed Project. There are no anticipated developments or improvements in the areas adjacent to the Project Area that have the potential to affect the local hydrology and water quality conditions or act in combination with the Proposed Project. Past projects (e.g., the Upper Blue Lake Dam Seismic Retrofit Project) and future projects (e.g., the Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project; Amador County Ingress, Egress and Education Plan Projects; SR 88 Pine Grove Corridor Improvement Project; and the SR 88 Roadway Improvements Project), each having components within the Mokelumne River watershed, have either implemented or would implement BMPs and required environmental commitments to not adversely affect surface water or groundwater quantity or quality. Both the SR 88 Pine Grove Corridor Improvement Project and the SR 88 Roadway Improvements Project are anticipated to have no impacts on hydrology and water quality resources, and the other projects are anticipated to have less-than-significant impacts on hydrology and water quality resources.

The Proposed Project would comply with DSOD and FERC seismic safety policy standards, as well as state and federal water quality regulations and, therefore, the Proposed Project's effect on local hydrology and water quality conditions would be minimized. The potential impacts of the Proposed Project would be reduced to a less-than-significant level through implementation of Mitigation Measures WQ-MM-1: *Implement Sediment Control Measures along Downstream Edge of Existing Plunge Pool prior to Rock Slope Protection Placement* and WQ-MM-2: *Develop and Implement a Water Quality Monitoring and Adaptive Management Plan;* adherence to permit requirements; and with BMP-1: *Implement Water Quality Protection Measures and Erosion and Sediment Control Plans*, BMP-2: *Implement Hazardous Materials Control Measures*, and BMP-6: *Implement Fugitive Dust Abatement Measures*.

For these reasons, the Proposed Project is not anticipated to contribute to any cumulatively considerable impacts related to hydrologic or water quality conditions.

4.2.2 Geology and Soils

In general, a project's potential impacts related to geology and soils are individual and localized, depending on the project site and underlying soils. Each structure will have different levels of excavation, cut-and-fill work, and grading, which would affect local geologic conditions in different ways. Therefore, the geographic context for geology and soils is site-specific.

Past projects (e.g., the Upper Blue Lake Dam Seismic Retrofit Project) and future projects (e.g., the Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project; the Amador County Ingress, Egress and Education Plan Projects; the SR 88 Pine Grove Corridor Improvement Project; and the SR 88 Roadway Improvements Project), were required to go through environmental and regulatory review and comply with the California Building Code. Each project was also required to have a site-specific geotechnical investigation performed, which provides design recommendations to reduce each project's impacts. Similar seismic safety standards and conditions of approval would apply to the reasonably foreseeable future projects. For these reasons, the Proposed Project, in combination with other past, present, and reasonably foreseeable future projects, would not result in a significant cumulative geology and soils impact.

If the Proposed Project resulted in damage to or loss of paleontological resources, it could result in a cumulatively considerable impact. However, impacts would be limited to the footprint of the Proposed Project, and implementation Mitigation Measures GEO-MM-1: *Educate Construction Personnel in Recognizing Fossil Material*, and GEO-MM-2: *Stop Work if Substantial Fossil Remains are Encountered during Construction*, to protect paleontological resources would reduce the potential impact to a less-than-significant level. The Proposed Project would therefore not contribute to a cumulatively considerable paleontological resources impact.

4.2.3 Biological Resources

Of the projects identified above, the Upper Blue Lake Dam Seismic Retrofit Project, Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project, Caples Spillway Channel Stabilization, and SR 88 Pine Grove Corridor Improvement projects, when considered with the Proposed Project, would not result in cumulative impacts on biological resources. The Upper Blue Lake Dam Seismic Retrofit Project and Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project are located approximately 30 miles from the Project Area and are at elevations of 8,100 and 8,040 feet, respectively. Due to the spatial distances and elevational differences, these projects would affect different biological resources than those in the Proposed Project's Area of Analysis and would not cumulatively contribute to the same impacts on biological resources as the Proposed Project. The Caples Spillway Channel Stabilization is also located 26 miles from the Proposed Project at 7,800 feet. This habitat restoration project would affect different biological resources than those in the Project Area due to the spatial and elevation differences and would not cumulatively contribute to the same impacts on biological resources as the Proposed Project. The SR 88 Pine Grove Corridor Improvement Project would affect existing paved surfaces in the town of Pine Grove and is unlikely to affect biological resources. As such, this project, when considered with the Proposed Project would not result in cumulative impacts on biological resources. The two remaining projects, Amador County Ingress, Egress and Education Plan, and SR 88 Roadway Improvements, are discussed in the following sections for plants and waters of the United States/waters of the State, fish, and wildlife.

4.2.3.1 Special-Status Plants, Sensitive Natural Communities, and Waters of the United States/Waters of the State

The Amador County Ingress, Egress and Education Plan project would remove roadside vegetation along private roads west of the Project Area, including removal of vegetation up to 10 inches dbh and limbing of trees greater than 10 inches dbh up to a minimum height of 10 feet. No records of special-status plants were found in the project area for the Amador County Ingress, Egress and Education Plan, and the project was not anticipated to have impacts on special-status plants. Project activities to remove and trim vegetation would avoid all impacts on riparian habitat, stream beds, banks, and channels. The Proposed Project would have no impact on special-status plants and would implement Mitigation Measures BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements* and BIO-MM-4: *Minimize the Introduction and Spread of Invasive Plants* to ensure effects on riparian habitat are avoided and Mitigation Measures BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements*, BIO-MM-5: *Avoid and Minimize Disturbance of Waters of the United States/Waters of the State*, and BIO-MM-6: *Compensate for the Temporary and Permanent Losses of Waters of the United States/Waters of the State* to ensure temporary and permanent impacts on perennial stream and reservoir are minimized and compensated. The Proposed Project, when considered with the Amador County Ingress, Egress and Education Plan, would therefore not contribute to cumulatively considerable impacts on biological resources.

The SR 88 Roadway Improvements project consists of roadway improvements along approximately 8.8 miles of roadway in Amador County from south of Ione to the community of Martell. The project would not have impacts on special-status plants. The project would remove mature riparian trees and narrow-leaf willow riparian canopy and would result in the loss of intermittent stream that potentially qualifies as waters of the United States and is a waters of the State. The project would implement mitigation to protect water quality, avoid introduction and spread of weeds, compensate for loss of mature riparian trees and narrow-leaf willow canopy, and compensate for loss of intermittent stream. The Proposed Project would have no potential impact on special-status plants and would implement Mitigation Measures BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements* and BIO-MM-4: *Minimize the Introduction and Spread of Invasive Plants* to ensure effects on riparian habitat are avoided; Mitigation Measures WQ-MM-1: *Implement Sediment Control Measures along Downstream Edge of Existing Plunge Pool prior to Rock Slope Protection Placement* and WQ-MM-2: *Develop and Implement a Water Quality Monitoring and Adaptive Management Plan* to ensure impacts on water quality are avoided; and Mitigation Measures BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements*, BIO-MM-5: *Avoid and Minimize Disturbance of Waters of the United States/Waters of the State*, and BIO-MM-6: *Compensate for the Temporary and Permanent Losses of Waters of the United States/Waters of the State* to ensure temporary and permanent impacts on wetland and non-wetland waters are minimized and compensated. The Proposed Project, when considered with the SR 88 Roadway Improvements project, would therefore not contribute to cumulatively considerable impacts on riparian habitat or waters of the United States/waters of the State.

4.2.3.2 Special-Status Fish and Native Resident Fish

Neither the Amador County Ingress, Egress and Education Plan project nor the SR 88 Roadway Improvements project would affect any special-status fish or native resident fish. The Amador County Ingress, Egress and Education Plan project would avoid all impacts on riparian habitat, stream bed, bank, and channel. The SR 88 Roadway Improvements project would affect a small amount (0.02 acre) of intermittent stream and remove mature riparian trees and narrow-leaf willow riparian canopy. The Initial Study with Mitigated Negative Declaration for the project (California Department of Transportation 2021) did not identify these impacts as potentially affecting fish habitat. Therefore, neither project would have a substantial adverse effect, either directly or through habitat modifications, on any special status fish or native resident fish. No special-status fish species would be affected by the Proposed Project and construction BMPs, as well as Mitigation Measures BIO-MM-7: *Implement Flow Pumping System and Water Drafting Requirements,* BIO-MM-8: *Rescue and Relocate Fish from Affected Habitat*, WQ-MM-1: *Implement Sediment Control Measures along Downstream Edge of Existing Plunge Pool prior to Rock Slope Protection Placement*, and WQ-MM-2: *Develop and Implement a Water Quality Monitoring and Adaptive Management Plan*, would be implemented to ensure effects on native resident fish are minimized. Therefore, the Proposed Project, when considered with the Amador County Ingress, Egress and Education Plan and the SR 88 Roadway Improvements projects would not contribute to cumulatively considerable impacts on special status fish or native resident fish.

4.2.3.3 Special-Status Wildlife

Removal of vegetation up to 10 inches dbh and limbing of trees greater than 10 inches dbh up to a minimum height of 10 feet as part of the Amador County Ingress, Egress and Education Plan project could remove suitable nesting habitat for migratory birds and suitable roosting habitat for bats. A mitigation measure for that project requires vegetation removal to be conducted outside of the raptor nesting period (March 1–September 1). This measure would provide protection for nesting migratory birds and roosting bats. If vegetation removal does not occur between September 2 and February 28, nesting migratory birds and roosting bats could be affected, unless identified during a preconstruction survey that is required for raptors in lieu of the avoidance period. The roadside vegetation removal for the Amador County Ingress, Egress and Education Plan project could also affect western pond turtle. A mitigation measure for the project requires a preconstruction survey for western pond turtle in the area where western pond turtle has been previously recorded. Additionally, a 50-foot protective buffer will be established on each side of all perennial watercourses, which would also provide protection for western pond turtle. The roadside vegetation management mitigation measures would minimize impacts on special-status wildlife that could also be affected by the Proposed Project. Mitigation Measures BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements*, BIO-MM-2: *Protect Suitable Western Pond Turtle Upland Habitat at the Cedar Mill Staging Area*, BIO-MM-3: *Evaluate Trees for Removal and Implement Protective Measures to Avoid or Minimize Injury or Mortality of Special-status Roosting Bats*, and BIO-MM-9: *Conduct a Preconstruction Survey for Nesting Birds and Implement Protective Buffers around Active Nests*, will be implemented as part of the Proposed Project to ensure effects on western pond turtle, migratory birds (including raptors), and roosting bats are minimized, and that the Proposed Project does not result in long-term adverse impacts on these species. The Proposed Project, when considered with the Amador County Ingress, Egress and Education Plan, would therefore not contribute to cumulatively considerable impacts on special-status wildlife.

The SR 88 Roadway Improvements project consists of roadway improvements along approximately 8.8 miles of roadway in Amador County from south of Ione to the community of Martell. Special-status wildlife that could be affected by roadway improvement work include western pond turtle, migratory birds, and tree roosting bats. The project requires designation of environmentally sensitive areas, biological monitoring of work that may affect biologically sensitive areas, and surveys for active bird nests, if work occurs during the nesting season. These measures would generally protect the special-status wildlife that could also be affected by the Proposed Project. Mitigation Measures BIO-MM-1: *Conduct Worker Environmental Awareness Training and Implement General Requirements*, BIO-MM-2: *Protect Suitable Western Pond Turtle Upland Habitat at the Cedar Mill Staging Area*, BIO-MM-3: *Evaluate Trees for Removal and Implement Protective Measures to Avoid or Minimize Injury or Mortality of Special-status Roosting Bats*, and BIO-MM-9: *Conduct a Preconstruction Survey for Nesting Birds and Implement Protective Buffers around Active Nests*, will be implemented as part of the Proposed Project to ensure effects on western pond turtle, migratory birds, and roosting bats are minimized, and that the Proposed Project does not result in long-term adverse impacts on these species. The Proposed Project, when considered with the SR 88 Roadway Improvements project, would therefore not contribute to cumulatively considerable impacts on special-status wildlife.

4.2.3.4 Biological Resources Cumulative Impact Conclusion

The impacts on biological resources of these past and future projects and the Proposed Project would not be cumulatively considerable for the reasons in the preceding discussion.

4.2.4 Air Quality

The evaluation of air quality impacts is an inherently cumulative approach and does not consider individual planned projects in the vicinity of the Proposed Project. Rather, it uses the same thresholds as the project-level analysis, which consider levels at which Proposed Project emissions would be cumulatively considerable. The project-level thresholds were developed to prevent deterioration of ambient air quality, which is influenced by emissions generated by past, present, and reasonably foreseeable future projects. Therefore, exceedances of the project-level thresholds, as identified in Section 3.6.4 *Environmental Effects*, would be cumulatively considerable.

Amador County currently does not attain the state and federal ozone standards. Sacramento County, through which construction materials would be hauled, does not attain the state and federal ozone and particulate matter standards. Therefore, a significant cumulative impact for air quality exists in the Area of Analysis. Construction and operations of future projects, including the Proposed Project, could further contribute to nonattainment of the state and federal air quality standards in the air quality Area of Analysis. However, as shown in Tables 3.6-3 and 3.6-4, neither construction activities nor material hauling through SMAQMD would generate ozone precursors or criteria pollutant emissions above the analysis thresholds. Accordingly, the Proposed Project’s contribution to the existing cumulative impact would not be cumulatively considerable.

The combined effects of air pollution in the MCAB and SVAB from existing and future sources represent the emissions paradigm to which receptors would be exposed. The contribution of Proposed Project-generated emissions to potential adverse health effects induced by exposure to regional criteria pollutant emissions (i.e., ozone precursors and particulate matter) depends on numerous interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). Moreover, emissions of ozone precursors (ROG and NO_X) generated in one area may not equate to an ozone concentration in that same area. Similarly, some types of particulate pollutants may be transported over long distances or formed through atmospheric reactions. As such, the magnitudes and locations of specific health effects from exposure to increased ozone or regional particulate matter concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project. Project-specific correlations of regional criteria pollutant emissions to specific health endpoints (e.g., increased cases of asthma) are not commonly performed because models that quantify changes in ambient pollution and resultant health effects were developed to support regional planning and policy analysis and generally have limited sensitivity to changes in criteria pollutant concentrations induced by individual projects. This is particularly pronounced for projects with relatively small contributions of emissions (i.e., emissions that would be below regional thresholds), such as the Proposed Project.

In general, community health conditions near the Proposed Project, as measured by CalEnviroScreen indicators, are slightly better when compared to conditions across the state (Office of Environmental Health Hazard Assessment 2022). Regardless, Amador County does not currently attain the state and federal ozone standards. Certain individuals residing in areas that do not meet the ambient air quality standards could be exposed to pollutant concentrations that cause or aggravate acute and/or chronic health conditions, regardless of implementation of the Proposed Project. Compliance with AAD rules and BMP-6: *Implement Fugitive Dust Abatement Measures*, would minimize Proposed Project-generated emissions. Moreover, as shown in Table 3.6-3, the highest predicted daily ROG and NOx emissions during construction would not contribute to the significant cumulative regional ozone pollution impact.

Localized pollutants and odors generated by a project are deposited near the emissions source and can affect the population near that emissions source. While construction of the Proposed Project would result in localized pollutant emissions (i.e., fugitive dust, DPM, and CO) and minor odors from diesel fuel combustion and paving, construction activities would be short-term (about two years). As localized pollutant concentrations and odor emissions regularly decline as a function of distance from the emission source, the Proposed Project, in combination with other existing and future projects, would not expose receptors to substantial cumulative localized pollutant concentrations or substantial odors.

4.2.5 Greenhouse Gas Emissions

Global GHG emissions due to population growth and economic growth continue to increase and are worsening the effects of global climate change. While there are myriad efforts at local, state, national, and international levels to promote the reduction of GHG emissions overall, current projections are that these emissions will still increase for the following decades and add to the current GHG concentrations in the atmosphere.

Environmental impacts associated with GHG emissions are exclusively cumulative in nature in accordance with the contemporary scientific knowledge of their effects on climate change. GHG emissions, once emitted, mix into the atmosphere and affect a larger area than any individual project site. Thus, the GHG cumulative impacts analysis does not consider individual planned projects in the vicinity of the Proposed Project. Rather, it uses the same thresholds and conditions as the project-level analysis.

As discussed in Section 3.7 *Greenhouse Gas Emissions*, operational lighting emissions would not exceed one metric ton CO_2e per year. Total emissions generated by construction of the Proposed Project are estimated to be 1,742 metric tons CO_2e. Maximum annual (909 metric tons CO_2e) construction emissions are below the analysis screening threshold of 1,100 metric tons CO_2e. However, the Proposed Project would result in a permanent loss of stored carbon and sequestration capacity (3,733 metric tons CO_2). PG&E would implement Mitigation Measure GHG-MM-1: *Implement Best Management Practices to Mitigate Tree Loss and Reduce Construction Generated Greenhouse Gas Emissions* to replace removed trees at a one:one ratio, or compensate for the lost sequestration potential through the purchase of GHG offsets. The measure also requires strategies to further reduce construction-generated GHGs. Mitigation Measure GHG-MM-1 ensures GHG emissions generated by the Proposed Project would not result in a significant cumulative contribution to impacts on global climate change.

4.2.6 Energy

Potential cumulative energy impacts include contributing to the wasteful, inefficient, or unnecessary consumption of energy resources, or conflicting with or obstructing a state or local plan for renewable energy or energy efficiency.

As discussed under checklist item *a* in Section 3.8 *Energy*, construction activities would be short-term and would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Additionally, the increased use of electrical energy for operations is necessary for improved visibility and safety at the Dam and incorporates energy-efficiency features into the design. The Proposed Project would therefore not contribute to a cumulatively considerable impact related to the wasteful, inefficient, or unnecessary consumption of energy resources.

As discussed under checklist item *b* in Section 3.8 *Energy*, the Proposed Project would modify the Dam spillway and access routes but would not construct any new buildings. There would be only minimal changes to existing operations. The Proposed Project new and replacement lighting features would be consistent with policies of the Conservation Element of the *Amador County General Plan*. Because no new buildings would be developed, the renewable energy or energy efficiency measures in other state or local plans are not applicable to the Proposed Project. Accordingly, the Proposed Project would not contribute to any cumulative impacts related to conflicts with or obstruction of state or local plans for renewable energy or energy efficiency.

4.2.7 Noise

Cumulative noise or vibration impacts can occur when two or more projects are under construction simultaneously or generate operational noise or vibration at the same time in the same general area. As noise and vibration are localized impacts that decrease with distance from the source, significant cumulative impacts do not typically occur unless two or more projects are close to a single receptor. The presence of any natural (e.g., hills, topography) or human-made (e.g., walls, buildings) barriers between a project site and a receptor will increase the rate of noise reduction over distance and will further reduce any cumulative noise levels.

Related projects in the vicinity of the noise- and vibration-sensitive receptors considered in this analysis include construction activities that could occur simultaneously with construction of the Proposed Project, depending on its timing. For the reasons previously discussed, construction noise and vibration levels at any single receptor are typically dominated by the closest construction activity. As a result, the probability of construction noise from more distant related project sites making a substantial contribution to overall noise levels at the same receptor is generally low. Nonetheless, incremental increases in total construction noise levels could occur.

Based on the related projects list provided in Section 4.1 *Cumulative Projects*, the nearest project to the Project Area would be the Amador County Ingress, Egress and Education Plan, which includes roadside vegetation clearing along many roadways including part of Spur 1. Other nearby projects include the SR 88 Pine Grove Corridor Improvement Project and the SR 88 Roadway Improvements Project, which both involve work along segments of SR 88 located along the corridor that may be used for material import under the Proposed Project.

The other main cumulative project, located farther from the Project Area, is the Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project (located approximately 30 miles east-northeast of the Dam); construction for the Upper Blue Lake Dam Seismic Retrofit Project (located approximately 30 miles east-northeast of the Dam), and the Caples Spillway Channel Stabilization (located approximately 26 miles northeast of the Dam) are both already complete.

Regarding construction noise, there are no cumulative projects located in close proximity to the Project Area. The closest cumulative projects are the two projects located along the SR 88 corridor. Proposed Project construction would generally not result in elevated Proposed Project-related construction noise levels along most of the SR 88 corridor leading to the Project Area. Although the proposed batch plant would have the potential to generate noise along a segment of SR 88, the increase in noise would be limited to 3-dB over the existing background noise level (as compared to the 10-dB threshold used for construction noise in Amador County) and would not be significant. In addition, the batch plant would be operational three days per week and up to six hours per day from November 2024 to February 2026. The SR 88 Pine Grove Corridor Improvement Project is expected to complete by fall 2024. With respect to the other cumulative projects, construction noise from the projects located 26 to 30 miles from the Project Area would be reduced and unlikely to be perceptible at the Project Area or along the adjacent SR 88 segments. As construction noise from the Proposed Project would generally not be produced in the same areas as construction noise from other cumulative projects, noise associated with proposed project construction would not be expected to combine with construction noise from cumulative projects at noise-sensitive uses in the Area of Analysis. The Proposed Project would therefore not contribute to any cumulatively considerable construction noise impacts.

With respect to operational noise, after construction of the Proposed Project, PG&E would continue to operate the Reservoir as was done prior to construction. In addition, there would be no new noise-generating stationary equipment installed. The only subtle difference in Proposed Project operations and maintenance that could be relevant to noise is the potential for a shift in maintenance access for the Dam, spillway, and log boom. The new permanent access road is over 2.5 miles from the nearest noise-sensitive land use. Therefore, once construction is complete, noise from the Proposed Project operations and maintenance at the nearest sensitive land uses would be similar to noise from operations and maintenance prior to Proposed Project implementation and would likely be inaudible. The Proposed Project would not result in any increases in operational noise at nearby noise-sensitive land uses, and noise from Proposed Project operations would not be expected to combine with noise from the operation of other cumulative projects to expose nearby noise-sensitive land uses to excessive operational noise. Therefore, the Proposed Project would not contribute to any cumulatively considerable impacts related to operational noise.

As vibration impacts are assessed based on instantaneous maximum peak levels (PPV), worst-case ground-borne vibration levels from construction are generally determined by whichever individual piece of equipment being used generates the highest vibration levels. As a result, the vibration from multiple construction sites, even if the sites are near each other, does not generally combine to raise the maximum PPV, and the cumulative impact is no more severe than the impact from the largest individual contribution. The Proposed Project would not contribute to any cumulatively considerable vibration impacts because of the nature of PPV vibration levels and because the batch plant (the only Proposed Project component located near any related projects considered in the cumulative impact analysis) would not result in any perceptible vibration levels. Additionally, the Proposed Project would not contribute to any cumulatively considerable vibration impacts because no other Proposed Project components are near construction areas for any other related projects.

4.2.8 Hazards and Hazardous Materials

The cumulative context for hazards and hazardous materials is the Proposed Project vicinity. In general, a project's potential impacts related to hazards are individual and localized, depending on activities occurring at the project site and proximity to hazardous facilities. Hazardous materials used during construction as a result of Proposed Project implementation would be of low toxicity and would consist of fuels, oils, and lubricants. Because these materials are required for operation of construction vehicles and equipment, measures from the SWPPP and BMPs will be implemented to reduce the potential for or exposure to accidental spills or fires involving the use of hazardous materials. While foreseeable projects have the potential to cause similar impacts, it is assumed these projects would also implement similar BMPs and follow all regulations regarding the transport, disposal, and handling of hazardous wastes during construction.

As a result of the regulatory framework described in Section 3.10.4 *Regulatory Setting*, there would be no cumulative significant effect from hazardous materials. The Proposed Project's potential impacts are less than significant, and its contribution would not create a new cumulative impact.

4.2.9 Cultural Resources

Cumulative impacts on cultural resources could result when the impacts of the Proposed Project, in conjunction with other projects and development in the region, result in multiple or cumulative impacts on cultural resources. A review of the environmental documentation for the past, present, and reasonably foreseeable projects listed above found that several of the projects on the list do not have the potential to affect built-environment cultural resources and have low to no potential to affect archaeological resources. These projects include the Amador County Ingress, Egress and Education Plan; the Caples Spillway Channel Stabilization project; the SR 88 Pine Grove Corridor Improvement Project; and the SR 88 Roadway Improvements project. The Upper Blue Lake Dam Seismic Retrofit Project involved modifications to a non-eligible resource that does not contribute to any of the previously identified historic districts and it had no impact on archaeological resources. The Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project would take place on a contributing feature to the Mokelumne River Rock-Faced Dam Discontinuous Historic District, but that project would not have a significant impact on the historical resource, and it has low potential to affect archaeological resources. Since none of the past, present, or reasonably foreseeable projects listed above would result in substantial effects to cultural resources, and because Proposed Project Mitigation Measures CUL-MM-1: *Conduct Mandatory Cultural Resources Awareness Training for All Project Personnel*, CUL-MM-2: *Stop Work if Previously Unidentified Archaeological Resources are Encountered until a Qualified Archaeologist Assesses the Find and Native American Consultation Has Been Conducted*, and CUL-MM-3: *Stop Work in Case of Accidental Discovery of Buried Human Remains until Procedures in Public Resources Code section 5097 have been Completed*, would reduce the potential adverse effects on cultural resources that may occur in the area of analysis to a less-than-significant level, the Proposed Project is unlikely to contribute to a cumulatively considerable impact on cultural resources.

4.2.10 Tribal Cultural Resources

Cumulative impacts on tribal cultural resources could result when the potential impacts of the Proposed Project, in conjunction with other projects and developments in the region, result in multiple or cumulative impacts on tribal cultural resources in the Proposed Project region. Because there are no known tribal cultural resources in the Project Area, the Proposed Project is unlikely to contribute to cumulatively considerable impacts on tribal cultural resources.

4.2.11 Aesthetics

The cumulative analysis for aesthetics resources considers actions associated with the projects identified in Section 4.1 *Cumulative Projects*. Refer to Section 3.13 *Aesthetics*, for a more detailed description of the existing aesthetics setting of the Area of Analysis. The landscape in the cumulative Area of Analysis is characterized by mixed conifer forest-covered ridges and slopes, interspersed with slopes with little vegetation, and small towns and communities centralized along main travel routes through the county.

Past actions include construction of the Upper Blue Lake Dam Seismic Retrofit Project and the Caples Spillway Channel Stabilization Project. The Upper Blue Lake Dam Seismic Retrofit Project constructed a rock buttress that slightly widened the dam, most of which is submerged, and the placed rock fill is visually similar to existing conditions. The Caples Spillway Channel Stabilization Project restored and stabilized two channel areas using rock-and-log stabilization measures and vegetative treatments. This resulted in negligible visual changes because the changes are natural looking.

The Amador County Ingress, Egress and Education Plan removes or prunes trees, based on size, along private roads within unincorporated regions west of Dew Drop in Amador County. Tree removals spread out along miles of private roadway would result in changes that mimic small forest canopy openings and would not greatly alter the visual landscape when compared to the amount to public and private roadways that would not be affected by the plan.

In the near future, the Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project would install a filter, seepage collection system, and rock fill buttress along the downstream earthen embankment of the dam. Potential visual impacts from project features and vegetation removal would be minimal because the proposed features would be relatively small and in keeping with the existing visual character of features associated with the dam. In addition, the views of the surrounding forests, ridges, and peaks would be retained and vegetation removal would be minimal. The SR 88 Pine Grove Corridor Improvement Project would result in minor visual changes from the intersection modifications, lane reconfiguration, pedestrian and bicycle improvements, and highway improvements along SR 88 through the town of Pine Grove. Similarly, cold-planing the asphalt pavement and overlaying the road surface; digging out spot locations to repair localized failures; adding shoulder backing; removing and replacing roadway signage; replacing culverts and end treatments; replacing down drains; and upgrading existing guardrails would be also result in minor visual changes associated with the SR 88 Roadway Improvements near Martell that would not greatly alter the visual landscape.

As discussed under checklist item *a* in Section 3.13 *Aesthetics*, there are no scenic vistas associated with the Project Area and as discussed under checklist item *b* in Section 3.13 *Aesthetics*, the Proposed Project would not result in permanent visual potential impacts on views along SR 88. Therefore, the contribution of the Proposed Project to significant cumulative impacts related to changes to scenic vista views and scenic roadways would not be cumulatively considerable.

As discussed under checklist item *c* in Section 3.13 *Aesthetics*, during construction, public access would be restricted so the public would not have views of construction activities taking place at the Doakes Ridge staging and spoils site and the Dam area. The Cedar Mill staging area would retain the same visual quality because conditions during construction would be in keeping with the industrial-looking nature of the site and consistent with what viewers would expect to see at the site. There would be no permanent visual potential impacts on views associated with the Proposed Project that would be seen during operation at the Cedar Mill staging area. However, the public would see the visible changes resulting from construction of the Proposed Project at the Doakes Ridge staging and spoils site and the Dam area during operation. Vegetation removal and spoils placement at the Doakes Ridge staging and spoils site would be in keeping with harvest practices on forested lands that are familiar to viewers, and the spoils would be seeded with grasses. The proposed spillway would be larger than the existing structure, and tree removal would open up the area in proximity to the Dam and along the permanent access road. However, the materials would be in keeping with existing structures at the site, and viewers are not likely to view this addition and these changes to the visual landscape as negative because most viewers are likely to be supportive of changes that result in increased safety of the Dam. Therefore, the contribution of the Proposed Project to significant cumulative impacts related to changes in visual character and the quality of views would not be cumulatively considerable.

As discussed under checklist item *d* in Section 3.13 *Aesthetics*, the Proposed Project would be constructed during daylight hours. The proposed project changes are not expected to increase daytime glare because removal of trees that provide shade would not be enough to greatly increase glare. Changes in nighttime lighting would be minor because the new lighting would be shielded to focus lighting only on the areas that require illumination, LED lighting would avoid the use of blue-rich white light lamps and use a correlated color temperature that is no higher than 3,000 Kelvin, most of the new and replacement lights would be controlled by a switch and be used only when needed, and the remaining lights would be controlled by photocells that would be dimmed until the motion detectors are activated by personnel. These measures would ensure that the new lighting would not result in a substantial change in nighttime lighting at the Dam and lighting levels would remain very low. In addition, the new concrete spillway would weather in a short period of time and blend with the surroundings. The resulting increase in glare reflecting off new structures would be negligible. Therefore, the contribution of the Proposed Project to significant cumulative impacts related to daytime or nighttime views would not be cumulatively considerable.

Construction and operation of the Proposed Project would not cause an incremental impact related to aesthetics resources that would be significant when added to the impacts from other past, present, and reasonably foreseeable future actions.

4.2.12 Transportation

As all potential transportation impacts related to the Proposed Project would be temporary in nature, this cumulative impact analysis focuses on other construction projects that could occur concurrently with the Proposed Project and within the

Proposed Project's transportation Area of Analysis within Amador County. The Amador County Ingress, Egress and Education Plan; SR 88 Pine Grove Corridor Improvement Project; and the SR 88 Roadway Improvements Project may be implemented within the Proposed Project's Area of Analysis during its construction period. Additionally, the haul trucks associated with the Lower Blue Lake Dam Seepage Mitigation and Weir Replacement Project may be using SR 88 during the 2025 construction season. Although these projects would have similar transportation effects, they would be temporary and would not cause any long-term changes in VMT or emergency access. Therefore, the Proposed Project is not anticipated to contribute to any cumulatively considerable transportation impacts.

4.2.13 Wildfire

The cumulative geographic scope for wildfire as it relates to the wildfire Area of Analysis and the surrounding areas in the vicinity. Development of other current and future projects in the surrounding vicinity (Section 4.1 *Cumulative Projects*) would be required to adhere to any state and federal environmental regulations, including those related to emergency access, evacuation plans, and wildfire risk. It is assumed that other future projects would employ standard BMPs similar to those identified in Section 2.6 *Best Management Practices* that would include keeping emergency routes accessible and wildfire risks low. The Area of Analysis is in a remote wilderness area so there is not a high degree of development or activity occurring in the surrounding areas, which lowers the cumulative impact with respect to wildfire.

The contribution of the Proposed Project to a cumulative impact on wildfire would not be cumulatively considerable. Implementation of the Proposed Project would not cumulatively increase the risk of wildfire because it would not involve the addition of a significant number of structures or people to an undeveloped area, and any construction or operation activities associated with the Proposed Project would be conducted in accordance with BMP-3: *Implement Fire Hazard Prevention Measures*, which will reduce the potential for wildfire. Standard practices would reduce the risk of, or prevent, ignition and would expedite the immediate control of an accidental fire. Therefore, the Proposed Project's contribution to a significant cumulative impact would not be considerable due to the limited amount of activity or development that would occur as a result of the Proposed Project, and the measures that would be implemented or incorporated to prevent risk of wildfire or the spread of wildfire.

4.2.14 Agriculture and Forestry Resources

There is no Farmland or lands under Williamson Act contract in the Area of Analysis and the Proposed Project would not conflict with existing zoning for agricultural use. Therefore, implementation of the Proposed Project would not incrementally contribute to a cumulative impact or result in a potential cumulatively considerable significant impact on agriculture when combined with other past, present and reasonably foreseeable projects considered in Section 4.1 *Cumulative Projects*. Although implementation of the Proposed Project would result in permanent tree removal on forest land and timberland conversion in a TPZ, it would not result in a significant change in the overall existing forest structure, would not interfere with the management of, or minimize the benefits to fish, wildlife, and the public from, surrounding forest lands, and would not be inconsistent with allowable uses in areas with the “TPZ” zoning designation. As such, the Proposed Project would not incrementally contribute to a cumulative impact on forestry resources and, when combined with other past, present and reasonably foreseeable projects identified in Section 4.1, and would not result in a potential cumulatively considerable significant impact on forestry resources in Amador County.

4.2.15 Land Use and Planning

The Proposed Project would not contribute to a potential significant cumulative impact on land use and planning. As discussed in Section 3.17 *Land Use and Planning*, the Proposed Project would not divide an established community and would be generally consistent with applicable land use policies, plans and regulations. Accordingly, the Proposed Project would not incrementally contribute to a cumulative impact on land use and planning, and when combined with other past, present, and reasonably foreseeable projects would not result in a potential cumulatively considerable significant impact on land use and planning in Amador County.

Chapter 5
Mandatory Findings of Significance

CEQA Guidelines section 15065 requires that a lead agency prepare an environmental impact report if any of the following conditions may result from a proposed project.

1. The project has 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 an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory.
2. The project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals.
3. The project has possible environmental effects that are individually limited but cumulatively considerable.
4. The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.

If the project proponent agrees to mitigation measures that would avoid any significant effects on the environment, or would mitigate significant effects to a point where clearly no significant effect on the environment would result from project implementation, an environmental impact report need not be prepared.

The Proposed Project would not result in any mandatory findings of significance. The Proposed Project would not result in significant impacts on the environment; fish, wildlife, or plant species; endangered species; or cultural resources. Nor would the Proposed Project cause long-term adverse environmental effects, cumulatively considerable effects, or adverse effects on humans. The Proposed Project would result in no impacts on mineral resources, population and housing, public services, recreation, tribal cultural resources, or utilities and service systems. All impacts related to the Proposed Project on aesthetics, agriculture and forestry resources, air quality, energy, hazards and hazardous materials, land use and planning, noise, transportation, and wildfire would be less than significant, and implementation of the mitigation measures described in Chapter 3, *Environmental Setting and Impacts*, would ensure that all potential environmental impacts on biological resources; cultural resources; geology, soils, seismicity, and paleontological resources; greenhouse gas emissions; and hydrology and water quality would be reduced to a less-than-significant level. Please refer to individual resource sections in Chapter 3 for a complete discussion of the potential environmental impacts and, where applicable, associated mitigation measures, and to Chapter 4, *Cumulative Impacts*, for a full discussion of the Proposed Project's potential to contribute to cumulatively considerable effects.

6.1 Proposed Mitigated Negative Declaration

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6.6 Chapter 5, Mandatory Findings of Significance

No references were cited in this chapter.

Appendix A
Environmental Checklist

Appendix A
Environmental Checklist

1.	**Project Title:**	Tiger Creek Regulator Dam Spillway Replacement Project
2.	**Lead Agency Name and Address:**	State Water Resources Control Board P.O. Box 100 Sacramento, CA 95812-0100
3.	**Contact Person and Phone Number:**	Eric Bradbury (916) 327-8628
4.	**Project Location:**	Tiger Creek Regulator Reservoir, Amador County
5.	**Project Sponsor's Name and Address:**	Pacific Gas and Electric Company Attn: Mike Farmer 5555 Florin Perkins Road Sacramento, CA 95826
6.	**General Plan Designation:**	General Forest, Open Recreation, and Industrial
7.	**Zoning:**	Timberland Preserve (Timber Production Zone), Single Family Residential-Agricultural, and Manufacturing

8. **Description of Project:**

Pacific Gas and Electric Company (PG&E) is proposing to construct the Tiger Creek Regulator Dam Spillway Replacement Project (Proposed Project) at the Tiger Creek Regulator Reservoir (Reservoir) in Amador County (Figure 1-1, *Project Location*). Prompted by the spillway failure at Lake Oroville Dam (a non-PG&E site) in February 2017, the Federal Energy Regulatory Commission (FERC) and the California Department of Water Resources Division of Safety of Dams (DSOD) requested that PG&E perform assessments of the spillways at several PG&E-owned dams. PG&E completed the spillway assessment for the Tiger Creek Regulator Dam (TCRD or dam) in December 2017 and identified several structural and hydraulic deficiencies of the existing spillway, and determined that it does not have the capacity to meet FERC requirements for passing the probable maximum flood (PMF) without overtopping the dam. The PMF flow of 5,652 cubic feet per second (cfs) is approximately double that of the existing spillway capacity. The purpose of the Proposed Project is to mitigate these known spillway deficiencies through construction of a new spillway and decommissioning of the old spillway infrastructure, allowing the dam to safely pass a flood event of up to 6,000 cfs. The Proposed Project comprises construction of a new spillway near the dam's right abutment, which includes a spillway intake (crest structure), a notch through the existing dam, a concrete chute, flip bucket splitter blocks, and plunge pool. Other associated features include a permanent access road, cofferdam, new log boom, lighting, and abandonment of the existing spillway.

9. Surrounding Land Uses and Setting:

The Tiger Creek Regulator Dam is located on Tiger Creek, a tributary to the North Fork of the Mokelumne River, approximately 24 miles northeast of Jackson in Amador County, California. The elevation of the dam is approximately 3,500 feet above mean sea level. The dam and Reservoir are situated in a narrow valley in the foothills of the Sierra Nevada mountain range, and the valley slopes rise steeply to approximately 300 feet above the water surface of the Reservoir. The dominant vegetation type is Sierra Nevada mixed conifer forest. The lands surrounding the Reservoir are zoned as "Timberland Preserve Zone (Timber Production Zone)" and have been logged in the past with periodic entries for commercial timber harvesting.

The dam is on land owned by PG&E and PG&E also owns or has use agreements for the nearby proposed staging and laydown areas. Surrounding lands are owned by the California Department of Forestry and Fire Protection (CAL FIRE). Elements of the Proposed Project would be constructed on CAL FIRE land; however, this property was donated to CAL FIRE by PG&E and includes utility easements that allow PG&E to operate and maintain existing and future hydroelectric facilities and to construct improvements necessary to meet water delivery requirements for power generation.

Access to the dam and Reservoir area is controlled by locked gates on Tiger Creek Road and Salt Springs Road. The public is allowed to fish from the dam and Reservoir shoreline when public safety is not compromised due to weather, wildfire precautions, or operational necessities. There are no formal recreation facilities and no swimming, boating, or float tubes are allowed in the Reservoir. Camping and fires are also prohibited. PG&E has the authority to lock the gates to the public when needed (e.g., for public safety, during road repair/maintenance activities, or during construction within the watershed).

10. Other Public Agencies Whose Approval is Required:

Federal Energy Regulatory Commission

United States Fish and Wildlife Service

United States Army Corps of Engineers

California Division of Safety of Dams

California Department of Forestry and Fire Protection

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

No Tribes requested to consult on the Proposed Project with the lead agency pursuant to Public Resources Code section 21080.3.1.

Environmental Factors Potentially Affected

The environmental factors checked below would potentially be affected by this project (i.e., the project would involve at least one impact that is a "Potentially Significant Impact"), as indicated by the checklist on the following pages.

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

A.1 Aesthetics

I. Aesthetics	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	☐	☐	☒	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.2 Agricultural and Forestry Resources

II. Agricultural and Forestry Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	☐	☐	☒	☐

II. Agricultural and Forestry Resources	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))?	☐	☐	☒	☐
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
e. Involve other changes in the existing environment that, 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?	☐	☐	☐	☒

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.3 Air Quality

III. Air Quality	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.4 Biological Resources

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

IV. Biological Resources	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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.5 Cultural Resources

V. Cultural Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to section 15064.5?	☐	☐	☒	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.6 Energy

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

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.7 Geology, Soils, and Paleontological Resources

VII. Geology, Soils, and Paleontological Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
2. Strong seismic ground shaking?	☐	☐	☒	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
4. Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐

VII. Geology, Soils, and Paleontological Resources	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?	☐	☐	☐	☒
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.8 Greenhouse Gas Emissions

VIII. Greenhouse Gas Emissions	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☒	☐	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.9 Hazards and Hazardous Materials

IX. Hazards and Hazardous Materials	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒

IX. Hazards and Hazardous Materials	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?	☐	☐	☒	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.10 Hydrology and Water Quality

X. Hydrology and Water Quality	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☒	☐	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
1. Result in substantial erosion or siltation on or off site;	☐	☐	☒	☐
2. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site;	☐	☐	☒	☐
3. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
4. Impede or redirect flood flows?	☐	☐	☒	☐

X. Hydrology and Water Quality	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?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☒	☐	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.11 Land Use and Planning

XI. Land Use and Planning	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.12 Mineral Resources

XII. Mineral Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.13 Noise

XIII. Noise	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	☐	☐	☒	☐
b. Generate excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. Be 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 and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.14 Population and Housing

XIV. Population and Housing	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace a substantial number of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.15 Public Services

XV. Public Services	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.16 Recreation

XVI. Recreation	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.17 Transportation

XVII. Transportation	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☐	☒
b. Conflict or be inconsistent with State CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d. Result in inadequate emergency access?	☐	☐	☒	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.18 Tribal Cultural Resources

XVIII. Tribal Cultural Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. 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	☐	☐	☐	☒
b. 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 Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.19 Utilities and Service Systems

XIX. Utilities and Service Systems	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒
c. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

A.20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks of, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment?	☐	☐	☒	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Please refer to Chapter 3, *Environmental Setting and Impacts*, for a complete discussion of the potential environmental impacts.

Appendix B
Species Lists

Appendix B1

California Native Plant Society Online Inventory of Rare and Endangered Plants Records Search Results

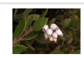
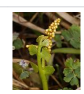
CNPS Rare Plant Inventory

CALIFORNIA NATIVE PLANT SOCIETY

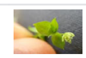
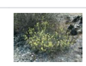
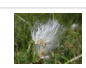
Search Results

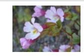
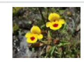
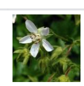
38 matches found. Click on scientific name for details

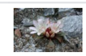
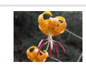
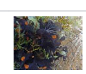
Search Criteria: Quad is one of [3812044:3812054:3812053:3812043:3812033:3812034:3812035:3812045:3812055:3812056:3812046:3812036]

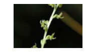
▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	CA RARE PLANT RANK	GENERAL HABITATS	MICROHABITATS	LOWEST ELEVATION (FT)	HIGHEST ELEVATION (FT)	PHOTO
Allium sanbornii var. sanbornii	Sanborn's onion	Alliaceae	perennial bulbiferous herb	May-Sep	None	None	4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest	Gravelly, Serpentinite (usually)	855	4955	 ©2018 Steven Perry
Allium tribracteatum	three-bracted onion	Alliaceae	perennial bulbiferous herb	Apr-Aug	None	None	1B.2	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest	Volcanic	3610	9845	 © 2018 Sierra Pacific Industries
Arctostaphylos myrtifolia	Ione manzanita	Ericaceae	perennial evergreen shrub	Nov-Mar	FT	None	1B.2	Chaparral, Cismontane woodland	Acidic, Clay (sometimes), Sandy (sometimes)	195	1905	 © 2006 Steve Matson
Botrychium ascendens	upswept moonwort	Ophioglossaceae	perennial rhizomatous herb	(Jun)Jul-Aug	None	None	2B.3	Lower montane coniferous forest, Meadows and seeps	Mesic	3660	9990	 © 2005 Steve Matson
Botrychium crenulatum	scalloped moonwort	Ophioglossaceae	perennial rhizomatous herb	Jun-Sep	None	None	2B.2	Bogs and fens, Lower montane coniferous forest, Marshes and swamps (freshwater), Meadows and seeps, Upper montane coniferous forest		4160	10760	 © 2016 Steve Matson

Botrychium minganense	Mingan moonwort	Ophioglossaceae	perennial rhizomatous herb	Jul-Sep(Oct)	None	None	4.2	Bogs and fens, Lower montane coniferous forest, Meadows and seeps (edges), Upper montane coniferous forest	Mesic	3905	10795	 © 2011 Aaron E. Sims
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	None	None	2B.3	Marshes and swamps (freshwater)		0	7220	 ©2014 Kirsten Bovee
Calochortus clavatus var. avius	Pleasant Valley mariposa-lily	Liliaceae	perennial bulbiferous herb	May-Jul	None	None	1B.2	Lower montane coniferous forest (Josephine silt loam, volcanic)		1000	5905	No Photo Available
Ceanothus fresnensis	Fresno ceanothus	Rhamnaceae	perennial evergreen shrub	(Apr)May-Jul	None	None	4.3	Cismontane woodland (openings), Lower montane coniferous forest		2955	7250	No Photo Available
Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest	Gabbroic, Serpentinite	805	5545	No Photo Available
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Onagraceae	annual herb	(Mar)May-Jul	None	None	4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest	Roadsides (often)	245	3000	No Photo Available
Clarkia virgata	Sierra clarkia	Onagraceae	annual herb	May-Aug	None	None	4.3	Cismontane woodland, Lower montane coniferous forest		1310	5510	No Photo Available
Claytonia parviflora ssp. grandiflora	streambank spring beauty	Montiaceae	annual herb	Feb-May	None	None	4.2	Cismontane woodland	Rocky	820	3935	No Photo Available

Crocanthemum suffrutescens	Bisbee Peak rush-rose	Cistaceae	perennial evergreen shrub	Apr-Aug	None	None	3.2	Chaparral	Burned areas (often), Disturbed areas (often), Gabbroic (often)	245	2200	No Photo Available
Cuscuta jepsonii	Jepson's dodder	Convolvulaceae	annual vine (parasitic)	Jul-Sep	None	None	1B.2	Lower montane coniferous forest, North Coast coniferous forest	Streambanks	3935	7545	 ©2019 Dean Wm. Taylor
Cypripedium montanum	mountain lady's-slipper	Orchidaceae	perennial rhizomatous herb	Mar-Aug	None	None	4.2	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest		605	7300	 ©2021 Scot Loring
Diplacus pulchellus	yellow-lip pansy monkeyflower	Phrymaceae	annual herb	Apr-Jul	None	None	1B.2	Lower montane coniferous forest, Meadows and seeps	Clay, Disturbed areas (often), Vernally Mesic	1970	6560	 © 2018 Sierra Pacific Industries
Engellaria obtusa	obtuse starwort	Caryophyllaceae	perennial rhizomatous herb	May-Sep(Oct)	None	None	4.3	Lower montane coniferous forest, Riparian woodland, Upper montane coniferous forest	Mesic, Streambanks	490	7515	 ©2014 Kirsten Bovee
Eriogonum tripodum	tripod buckwheat	Polygonaceae	perennial deciduous shrub	May-Jul	None	None	4.2	Chaparral, Cismontane woodland	Serpentinite (often)	655	5250	 ©2008 Steven Perry
Eriophorum gracile	slender cottongrass	Cyperaceae	perennial rhizomatous herb (emergent)	May-Sep	None	None	4.3	Bogs and fens, Meadows and seeps, Upper montane coniferous forest	Acidic	4200	9515	 ©2011 Steven Perry

Eriophyllum confertiflorum var. tanacetiflorum	tansy-flowered woolly sunflower	Asteraceae	perennial shrub	May-Jul	None	None	4.3	Cismontane woodland, Lower montane coniferous forest		1000	4395	No Photo Available
Eryngium pinnatisectum	Tuolumne button-celery	Apiaceae	annual/perennial herb	May-Aug	None	None	1B.2	Cismontane woodland, Lower montane coniferous forest, Vernal pools	Mesic	230	3000	 © 2007 Robert E. Preston, Ph.D.
Erythranthe inconspicua	small-flowered monkeyflower	Phrymaceae	annual herb	May-Jun	None	None	4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Mesic	900	2495	 © 2017 Debra L. Cook
Erythranthe laciniata	cut-leaved monkeyflower	Phrymaceae	annual herb	Apr-Jul	None	None	4.3	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest	Granitic, Mesic	1610	8695	 © 2017 Steven Perry
Erythranthe marmorata	Stanislaus monkeyflower	Phrymaceae	annual herb	Mar-May	None	None	1B.1	Cismontane woodland, Lower montane coniferous forest		330	2955	No Photo Available
Hartmaniella sierrae	Sierra starwort	Caryophyllaceae	perennial rhizomatous herb	May-Aug	None	None	4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest		4020	7200	No Photo Available
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	Apr-Sep	None	None	1B.2	Chaparral, Cismontane woodland		260	3510	 © 2009 Barry Breckling

Jensia yosemitana	Yosemite tarplant	Asteraceae	annual herb	(Apr)May-Jul	None	None	3.2	Lower montane coniferous forest, Meadows and seeps		3935	7545	No Photo Available
Jepsonia heterandra	foothill jepsonia	Saxifragaceae	perennial herb	Aug-Dec	None	None	4.3	Cismontane woodland, Lower montane coniferous forest	Metamorphic, Rocky	165	1640	 © 2014 Belinda Lo
Lathyrus sulphureus var. argillaceus	dubious pea	Fabaceae	perennial herb	Apr-May	None	None	3	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest		490	3050	No Photo Available
Lewisia kelloggii ssp. hutchisonii	Hutchison's lewisia	Montiaceae	perennial herb	(Apr)May-Aug	None	None	3.2	Upper montane coniferous forest	Openings	2510	7760	 Dean Wm. Taylor 2006
Lewisia kelloggii ssp. kelloggii	Kellogg's lewisia	Montiaceae	perennial herb	(Apr)May-Aug	None	None	3.2	Upper montane coniferous forest	Openings	4805	7760	 © 2019 Barry Breckling
Lilium humboldtii ssp. humboldtii	Humboldt lily	Liliaceae	perennial bulbiferous herb	May-Jul(Aug)	None	None	4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest	Openings	295	4200	 © 2008 Sierra Pacific Industries
Lomatium stebbinsii	Stebbins' lomatium	Apiaceae	perennial herb	Mar-May	None	None	1B.1	Chaparral, Lower montane coniferous forest	Clay, Serpentinite, Volcanic	4085	7790	No Photo Available
Myrica hartwegii	Sierra sweet bay	Myricaceae	perennial deciduous shrub	May-Jun	None	None	4.3	Cismontane woodland, Lower montane coniferous forest, Riparian forest		490	5740	No Photo Available
Peltigera gowardii	western waterfan lichen	Peltigeraceae	foliose lichen (aquatic)		None	None	4.2	Riparian forest		3495	8595	 © 2021 Scot Loring

Piperia colemanii	Coleman's rein orchid	Orchidaceae	perennial herb	Jun-Aug	None	None	4.3	Chaparral, Lower montane coniferous forest	Sandy (often)	3935	7545	 © 2005 Dean Wm. Taylor
Sphenopholis obtusata	prairie wedge grass	Poaceae	perennial herb	Apr-Jul	None	None	2B.2	Cismontane woodland, Meadows and seeps	Mesic	985	6560	No Photo Available

Showing 1 to 38 of 38 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 14 August 2023].

Appendix B2

California Natural Diversity Database Records Search Results

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Aukum (3812056) OR Pine Grove (3812046) OR Mokelumne Hill (3812036) OR Dorrington (3812033) OR Fort Mountain (3812034) OR Rail Road Flat (3812035) OR Garnet Hill (3812043) OR West Point (3812045) OR Peddler Hill (3812053) OR Caldor (3812054) OR Omo Ranch (3812055) OR Devils Nose (3812044))
 AND Taxonomic Group IS (Dune OR Scrub OR Herbaceous OR Marsh OR Riparian OR Woodland OR Forest OR Alpine OR Inland Waters OR Marine OR Estuarine OR Riverine OR Palustrine OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes OR Fungi)

Tiger Creek Regulator Dam Spillway Replacement Project

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Allium tribracteatum three-bracted onion	PMLIL022D0	None	None	G2	S2	1B.2
Arctostaphylos myrtifolia Ione manzanita	PDERI04240	Threatened	None	G1	S1	1B.2
Big Tree Forest Big Tree Forest	CTT84250CA	None	None	G3	S3.2	
Botrychium crenulatum scalloped moonwort	PPOPH010L0	None	None	G4	S3	2B.2
Botrychium minganense Mingan moonwort	PPOPH010R0	None	None	G5	S4	4.2
Brasenia schreberi watershield	PDCAB01010	None	None	G5	S3	2B.3
Calochortus clavatus var. avius Pleasant Valley mariposa-lily	PMLIL0D095	None	None	G4T2	S2	1B.2
Central Valley Drainage Hardhead/Squawfish Stream Central Valley Drainage Hardhead/Squawfish Stream	CARA2443CA	None	None	GNR	SNR	
Central Valley Drainage Resident Rainbow Trout Stream Central Valley Drainage Resident Rainbow Trout Stream	CARA2421CA	None	None	GNR	SNR	
Chlorogalum grandiflorum Red Hills soaproot	PMLIL0G020	None	None	G3	S3	1B.2
Crocanthemum suffrutescens Bisbee Peak rush-rose	PDCIS020F0	None	None	G2?Q	S2?	3.2
Cuscuta jepsonii Jepson's dodder	PDCUS011T0	None	None	G3	S3	1B.2
Diplacus pulchellus yellow-lip pansy monkeyflower	PDSCR1B280	None	None	G2	S2	1B.2
Eryngium pinnatisectum Tuolumne button-celery	PDAPI0Z0P0	None	None	G2	S2	1B.2
Erythranthe marmorata Stanislaus monkeyflower	PDPHR01130	None	None	G2?	S2?	1B.1

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Horkelia parryi Parry's horkelia	PDROS0W0C0	None	None	G2	S2	1B.2
Ione Chaparral Ione Chaparral	CTT37D00CA	None	None	G1	S1.1	
Lathyrus sulphureus var. argillaceus dubious pea	PDFAB25101	None	None	G5T1T2Q	S1S2	3
Lomatium stebbinsii Stebbins' lomatium	PDAPI1B1V0	None	None	G2	S2	1B.1
Peltigera gowardii western waterfan lichen	NLVER00460	None	None	G4?	S3	4.2
Sacramento-San Joaquin Foothill/Valley Ephemeral Stream Sacramento-San Joaquin Foothill/Valley Ephemeral Stream	CARA2130CA	None	None	GNR	SNR	
Sphenopholis obtusata prairie wedge grass	PMPOA5T030	None	None	G5	S2	2B.2

Record Count: 22

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Aukum (3812056) OR Pine Grove (3812046) OR Mokelumne Hill (3812036) OR Dorrington (3812033) OR Fort Mountain (3812034) OR Rail Road Flat (3812035) OR Garnet Hill (3812043) OR West Point (3812045) OR Peddler Hill (3812053) OR Caldor (3812054) OR Omo Ranch (3812055) OR Devils Nose (3812044))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)

Tiger Creek Regulator Dam Spillway Replacement Project

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
California red-legged frog *Rana draytonii*	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
Fisher *Pekania pennanti*	AMAJF01020	None	None	G5	S2S3	SSC
foothill yellow-legged frog - south Sierra DPS *Rana boylii pop. 5*	AAABH01055	Proposed Endangered	Endangered	G3T2	S2	
fringed myotis *Myotis thysanodes*	AMACC01090	None	None	G4	S3	
Grady's Cave amphipod *Stygobromus gradyi*	ICMAL05460	None	None	G1	S1	
Graham's Cave amphipod *Stygobromus grahami*	ICMAL05920	None	None	G2	S2	
great gray owl *Strix nebulosa*	ABNSB12040	None	Endangered	G5	S1	
Grubbs' cave harvestman *Banksula grubbsi*	ILARA14060	None	None	G1	S1	
hoary bat *Lasiurus cinereus*	AMACC05032	None	None	G3G4	S4	
Leech's skyline diving beetle *Hydroporus leechi*	IICOL55040	None	None	G1?	S2S3	
long-legged myotis *Myotis volans*	AMACC01110	None	None	G4G5	S3	
North American porcupine *Erethizon dorsatum*	AMAFJ01010	None	None	G5	S3	
northern goshawk *Accipiter gentilis*	ABNKC12060	None	None	G5	S3	SSC
obscure bumble bee *Bombus caliginosus*	IIHYM24380	None	None	G2G3	S1S2	
osprey *Pandion haliaetus*	ABNKC01010	None	None	G5	S4	WL
sharp-shinned hawk *Accipiter striatus*	ABNKC12020	None	None	G5	S4	WL

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Sierra Nevada red fox - Sierra Nevada DPS *Vulpes vulpes necator pop. 2*	AMAJA03017	Endangered	Threatened	G5TNR	S1	
Sierra Nevada yellow-legged frog *Rana sierrae*	AAABH01340	Endangered	Threatened	G1	S2	WL
silver-haired bat *Lasionycteris noctivagans*	AMACC02010	None	None	G3G4	S3S4	
southern long-toed salamander *Ambystoma macrodactylum sigillatum*	AAAAA01085	None	None	G5T4	S2	SSC
Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010	None	None	G4	S2	SSC
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC

Record Count: 23

Appendix B3

U.S. Fish and Wildlife Service Species List

United States Department of the Interior

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

In Reply Refer To: August 18, 2023
Project Code: 2023-0118932
Project Name: Tiger Creek Regulator Dam Spillway Replacement Project

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

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

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

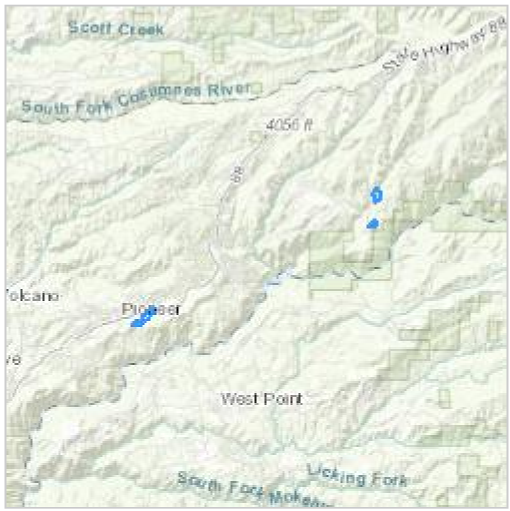
This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2023-0118932
Project Name: Tiger Creek Regulator Dam Spillway Replacement Project
Project Type: Dam - Maintenance/Modification
Project Description: A new spillway near the dam's right abutment, which includes a spillway intake (crest structure), a notch through the existing dam, a concrete chute, flip bucket splitter blocks, and plunge pool. Other associated features include a permanent access road, cofferdam, new log boom, lighting, abandonment of the existing spillway, and staging areas. Construction would occur off and on between July 2024 and May 2026.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.4324287,-120.56102912531085,14z



Counties: Amador County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

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

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

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

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

BIRDS

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

AMPHIBIANS

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

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

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

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

IPAC USER CONTACT INFORMATION

Agency:	ICF
Name:	Jennifer Hale
Address:	980 9th Street, Suite 1200
City:	Sacramento
State:	CA
Zip:	95814
Email	jennifer.hale@icf.com
Phone:	9162319575

Appendix B4
National Marine Fisheries Service Species List

Quad Name **Devils Nose**
Quad Number **38120-D4**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Appendix C

Plants and Animals Observed in the Tiger Creek Regulator Dam Spillway Replacement Project Area of Analysis

Appendix C
Plants and Animals Observed in the Tiger Creek Regulator Dam Spillway Replacement Project Area of Analysis

Table C-1. Plants Observed in the Tiger Creek Regulator Dam Spillway Replacement Project Area of Analysis

Scientific Name	Common Name	Family	Status[1]
Acer macrophyllum	Big-leaf maple	Sapindaceae	Native
Achillea millefolium	Common yarrow	Asteraceae	Native
Acmispon americanus var. *armericanus*	Spanish lotus	Fabaceae	Native
Acmispon nevadensis	Sierra Nevada lotus	Fabaceae	Native
Acmispon parviflorus	Hill lotus	Fabaceae	Native
Acmispon strigosus	Strigose lotus	Fabaceae	Native
Adenocaulon bicolor	Trail plant	Asteraceae	Native
Adenostoma fasciculatum	Chamise	Rosaceae	Native
Adiantum aleuticum	Five finger fern	Pteridaceae	Native
Aesculus californica	Buckeye	Sapindaceae	Native
Agoseris heterophylla var. *heterophylla*	Annual agoseris	Asteraceae	Native
Agrostis exarata	Spike bent grass	Poaceae	Native
Aira caryophyllea	Common silver-hair grass	Poaceae	Non-native
Allium sp.	Onion	Alliaceae	Native
Alnus rhombifolia	White alder	Betulaceae	Native
Amelanchier sp.	Serviceberry	Rosaceae	Native
Anaphalis margaritacea	Pearly everlasting	Asteraceae	Native
Athyrium filix-femina	Common ladyfern	Woodsiaceae	Native
Apocynum androsaemifolium	Spreading dogbane	Apocynaceae	Native
Aquilegia formosa	Crimson columbine	Ranunculaceae	Native
Arbutus menziesii	Pacific madrone	Ericaceae	Native
Arctostaphylos viscida ssp. *viscida*	Sticky whiteleaf manzanita	Ericaceae	Native
Artemisia douglasiana	Mugwort	Asteraceae	Native
Avena barbata	Slim oat	Poaceae	Non-native[m]

Scientific Name	Common Name	Family	Status[1]
Boykinia major	Large boykinia	Saxifragaceae	Native
Brassica nigra	Black mustard	Fabaceae	Non-native[m]
Bromus carinatus	California brome	Poaceae	Native
Bromus commutatus	Hairy chess	Poaceae	Non-native
Bromus diandrus	Ripgut brome	Poaceae	Non-native[m]
Bromus grandis	Tall brome	Poaceae	Non-native
Bromus hordeaceus	Soft chess	Poaceae	Non-native[L]
Bromus madritensis ssp. *rubens*	Foxtail brome	Poaceae	Non-native[H]
Bromus racemosus	Smooth brome	Poaceae	Non-native
Bromus tectorum	Cheatgrass	Poaceae	Non-native[H, C]
Calocedrus decurrens	Incense cedar	Cupressaceae	Native
Calochortus superbus	Superb Mariposa lily	Liliaceae	Native
Calystegia occidentalis	Bush morning glory	Convolvulaceae	Native
Carex feta	Green sheathed sedge	Cyperaceae	Native
Carex praegracilis	Clustered field sedge	Cyperaceae	Native
Ceanothus diversifolius	Pinemat	Rhamnaceae	Native
Ceanothus integerrimus	Deer brush	Rhamnaceae	Native
Ceanothus prostrates	Mahala mats	Rhamnaceae	Native
Cerastium glomeratum	Large mouse ears	Caryophllyaceae	Non-native
Centaurea solstitialis	Yellow star thistle	Asteraceae	Non-native[H, *]
Chamaebatia foliolosa	Mountain misery	Rosaceae	Native
Chlorogalum pomeridianum var. *pomeridianum*	Common soaproot	Agavaceae	Native
Cirsium vulgare	Bullthistle	Asteraceae	Non-native[M, *]
Claytonia parviflora	Narrow leaved miner’s lettuce	Montiaceae	Native
Claytonia perfoliata	Miner's lettuce	Montiaceae	Native
Collomia heterophylla	Varied leaved collomia	Polemoniaceae	Native
Convolvulus arvensis	Bind weed	Convolvulaceae	Non-native
Cornus nuttallii	Mountain dogwood	Cornaceae	Native

Scientific Name	Common Name	Family	Status[1]
Cornus sericea	American dogwood	Cornaceae	Native
Corylus cornuta	California hazelnut	Betulaceae	Native
Croton setiger	Turkey mullein	Euphorbiaceae	Native
Cynosurus echinatus	Bristly dogtail grass	Poaceae	Non-native[M]
Dactylis glomerata	Orchard grass	Poaceae	Non-native[L]
Daucus pusillus	Wild carrot	Apiaceae	Native
Delphinium sp.	Larkspur	Ranunculaceae	Native
Delphinium nuttallianum	Nuttall's larkspur	Ranunculaceae	Native
Deschampsia cespitosa	Tufted hairgrass	Poaceae	Native
Dicentra formosa	Pacific bleedinghearts	Papaveraceae	Native
Dichelostemma capitatum	Blue dicks	Themidaceae	Native
Drymocallis glandulosa	Sticky cinquefoil	Rosaceae	Native
Dryopteris arguta	Wood fern	Dryopteraceae	Native
Dudleya cymosa	Rock lettuce	Crassulaceae	Native
Eleocharis macrostachya	Spike rush	Cyperaceae	Native
Elymus caput-medusae	Medusa head	Poaceae	Non-native[H, *]
Elymus glaucus ssp. *glaucus*	Blue wild rye	Poaceae	Native
Elymus triticoides	Beardless wild rye	Poaceae	Non-native
Epilobium ciliatum	Willowherb	Onagraceae	Native
Equisetum arvense	Common horsetail	Equisetaceae	Native
Ericameria arborescens	Golden fleece	Asteraceae	Native
Erigeron foliosus	Leafy fleabane	Asteraceae	Native
Eriophyllum lanatum	Common woolly sunflower	Asteraceae	Native
Erodium botrys	Big heron bill	Geraniaceae	Non-native
Erythranthe bicolor	Yellow and white monkeyflower	Phrymaceae	Native
Erythranthe guttata	Yellow monkeyflower	Phrymaceae	Native
Eschscholzia californica	California poppy	Papaveraceae	Native
Euphorbia maculata	Spotted spurge	Euphorbiaceae	Non-native
Festuca bromoides	Brome fescue	Poaceae	Non-native
Festuca microstachys	Small fescue	Poaceae	Native

Scientific Name	Common Name	Family	Status[1]
Festuca myuros	Rattail sixweeks grass	Poaceae	Non-native[M]
Festuca perennis	Italian rye grass	Poaceae	Non-native[M]
Ficus carica	Common fig	Moraceae	Non-native[M]
Fragaria virginiana	Mountain strawberry	Rosaceae	Native
Frangula californica	California coffeeberry	Rhamnaceae	Native
Galium aparine	Cleavers	Rubiaceae	Native
Galium parisiense	Climbing bedstraw	Rubiaceae	Non-native
Galium trifidum	Three petaled bedstraw	Rubiaceae	Native
Gilia capitata	Globe gilia	Polemoniaceae	Native
Genista monspessulana	French broom	Fabaceae	Non-native[H, C*]
Geranium molle	Crane’s bill geranium	Geraniaceae	Non-native
Goodyera oblongifolia	Green-leaf rattlesnake-plantain	Orchidaceae	Native
Grindelia hirsutula	Gumweed	Asteraceae	Native
Heteromeles arbutifolia	Toyon	Rosaceae	Native
Heterotheca grandiflora	Telegraph weed	Asteraceae	Native
Heuchera micrantha	Alum root	Saxifragaceae	Native
Hieracium albiflorum	White hawkweed	Asteraceae	Native
Hirschfeldia incana	Mustard	Fabaceae	Non-native[M]
Holcus lanatus	Common velvetgrass	Poaceae	Native
Hordeum marinum ssp. *gussoneanum*	Seaside barley	Poaceae	Non-native[M]
Hosackia incana	Wolly lotus	Fabaceae	Native
Hypericum perforatum ssp. *perforatum*	Klamathweed	Hypericaceae	Non-native[L]
Hypochaeris glabra	Smooth cat's-ear	Asteraceae	Non-native[L]
Iris hartwegii	Hartweg's iris	Iridaceae	Native
Juncus balticus	Wire rush	Juncaceae	Native
Juncus bufonius var. *bufonius*	Toad rush	Juncaceae	Native
Juncus effusus	Lamp rush	Juncaceae	Native
Juncus occidentalis	Slender juncus	Juncaceae	Native
Juncus patens	Rush	Juncaceae	Native
Juncus tenuis	Poverty rush	Juncaceae	Native

Scientific Name	Common Name	Family	Status[1]
Lathyrus latifolius	Perennial sweet pea	Fabaceae	Non-native[W]
Lemna minor	Smaller duckweed	Araceae	Native
Lepidium nitidum	Shining pepper grass	Brassicaceae	Native
Leptosiphon ciliatus	Whisker brush	Polemoniaceae	Native
Leptosiphon montanus	Mustang clover	Polemoniaceae	Native
Lessingia leptoclada	Sierra lessingia	Asteracea	Native
Lithophragma sp.	Woodland star	Saxifragaceae	Native
Lonicera interrupta	Chaparral honeysuckle	Caprifoliaceae	Native
Lotus corniculatus	Birds foot trefoil	Fabaceae	Non-native
Lupinus bicolor	Annual lupine	Fabaceae	Native
Lupinus latifolia	Broadleaf lupine	Fabaceae	Native
Lupinus microcarpus	Chick lupine	Fabaceae	Native
Lysimachia latifolia	Pacific starflower	Myrsinaceae	Native
Madia elegans	Common tarweed	Asteraceae	Native
Madia gracilis	Slender tarweed	Asteraceae	Native
Maianthemum racemosum	False lily of the valley	Ruscaceae	Native
Marrubium vulgare	White horehound	Lamiaceae	Non-native[L]
Melilotus albus	White sweetclover	Fabaceae	Non-native
Myosotis discolor	Forget me not	Boraginaceae	Non-native
Nemophila heterophylla	Canyon nemophila	Hydrophyllaceae	Native
Osmorhiza berteroi	Sweet cicely	Apiaceae	Native
Penstemon laetus	Mountain blue penstemon	Plantaginaceae	Native
Pentagramma triangularis	Goldenback fern	Pteridaceae	Native
Pinus lambertiana	Sugar pine	Pinaceae	Native
Pinus ponderosa	Ponderosa pine	Pinaceae	Native
Plantago lanceolata	English plantain	Plantaginaceae	Non-native[L]
Poa bulbosa	Bulbous blue grass	Poaceae	Non-native
Polypogon monspeliensis	Annual beard grass	Poaceae	Non-native[L]
Polystichum munitum	Western sword fern	Dryopteridaceae	Native
Potentilla gracilis	Cinquefoil	Rosaceae	Native
Pseudotsuga menziesii var. *menziesii*	Douglas-fir	Pinaceae	Native
Pteridium aquilinum	Western bracken fern	Dennstaedtiaceae	Native

Scientific Name	Common Name	Family	Status[1]
Quercus chrysolepis	Canyon live oak	Fagaceae	Native
Quercus ilex	Holly oak	Fagaceae	Non-native
Quercus kelloggii	California black oak	Fagaceae	Native
Quercus lobata	Valley oak	Fagaceae	Native
Quercus vacciniifolia	Huckleberry oak	Fagaceae	Native
Ranunculus occidentalis var. *occidentalis*	Western buttercup	Ranunculaceae	Native
Ranunculus orthorhynchus	Bloomer's buttercup	Ranunculaceae	Native
Rhododendron sp.	Azalea	Ericaceae	Native
Ribes sp.	Currant	Grossulariaceae	Native
Rosa gymnocarpa	Baldhip rose	Rosaceae	Native
Rubus armeniacus	Himalayan blackberry	Rosaceae	Non-native[H]
Rubus lacinatus	Cut leaved blackberry	Rosaceae	Non-native
Rubus leucodermis	Whitebark raspberry	Rosaceae	Native
Rubus parviflorus	Western thimbleberry	Rosaceae	Native
Rumex acetosella	Common sheep sorrel	Polygonaceae	Non-native[M]
Salix lasiolepis	Arroyo willow	Salicaceae	Native
Sanicula crassicaulis	Pacific sanicle	Apiaceae	Native
Sedum obtusatum	Sierra stonecrop	Crassulaceae	Native
Senecio sp.	Ragweed	Asteraceae	
Sidalcea glaucescens	Glaucus checker mallow	Malvaceae	Native
Silene laciniata	Cardinal catchfly	Caryophyllaceae	Native
Sonchus asper	Spiny sow thistle	Asteraceae	Non-native
Sonchus oleraceus	Sow thistle	Asteraceae	Non-native
Stachys ajugoides	Hedge nettle	Lamiaceae	Native
Stellaria media	Common chickweed	Caryophllyaceae	Non-native
Symphyotrichum bracteolatum	Eaton's aster	Asteraceae	Native
Tamarix sp.	Tamarisk	Tamaricaceae	Non-native[H, *]
Taraxacum officinale	Common dandelion	Asteraceae	Non-native
Torilis arvensis	Field hedge parsley	Apiaceae	Non-native
Toxicodendron diversilobum	Western poison oak	Anacardiaceae	Native

Scientific Name	Common Name	Family	Status[1]
Toxicoscordion sp.	Death camas	Melanthiaceae	Native
Tragopogon dubius	Yellow salsify	Asteraceae	Non-native
Trifolium dubium	Suckling clover	Fabaceae	Non-native
Trifolium hirtum	Rose clover	Fabaceae	Non-native[L]
Trifolium microcephalum	Small headed clover	Fabaceae	Native
Trifolium variegatum	Variegated clover	Fabaceae	Native
Triticum aestivum	Winter wheat	Asteraceae	Non-native
Vaccinium parvifolium	Red huckleberry	Ericaceae	Native
Verbascum thapsus	Common mullein	Scrophulariaceae	Non-native[L]
Vicia americana	American vetch	Fabaceae	Native
Vicia hirsuta	Hairy vetch	Fabaceae	Non-native
Viola glabella	Stream violet	Violaceae	Native
Viola bakeri	Baker's violet	Violaceae	Native
Viola lobata	Moose horn violet	Violaceae	Native

Sources: Baldwin et al. 2012, Calflora 2023

[1]Status:

Cal-IPC Inventory Ratings:

[W] = Watch--These species have been assessed as posing a high risk of becoming invasive in the future in California.

[L] = Limited--These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

[M] = Moderate--These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

[H] = High--These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

CDFA Ratings:

[B] = A pest of known economic or environmental detriment and, if present in California, it is of limited distribution.

[C] = A pest of known economic or environmental detriment and, if present in California, it is usually widespread.

* = Plant is included in the CCR Section 4500 list of California State Noxious Weeds.

Table C-2. Animals Observed in the Tiger Creek Regulator Dam Spillway Replacement Project Area of Analysis

Common Name	Scientific Name
Tiger swallowtail (butterfly)	*Pterourus* spp.
American bullfrog	*Lithobates catesbeianus*
Western fence lizard	*Sceloporus occidentalis*
Canada goose	*Branta canadensis*
Turkey vulture	*Cathartes aura*
Red-tailed hawk	*Buteo jamaicensis*
Bald eagle	*Haliaeetus leucocephalus*
Acorn woodpecker	*Melanerpes formicivorus*
Black phoebe	*Sayornis nigricans*
Western scrub jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Northern mockingbird	*Mimus polyglottos*
Botta’s pocket gopher (sign)	*Thomomys bottae*
Mule deer	*Odocoileus hemionus*

Appendix D

Air Quality Calculations and Assumptions

Tiger Creek Const - AAD Max Daily

Table of Contents

5.6.2. Construction Earthmoving Control Strategies

5.8. Construction Electricity Consumption and Emissions Factors

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Tiger Creek Const
Construction Start Date	7/8/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	38.2
Location	38.477123683429426, -120.45229072675
County	Amador
City	Unincorporated
Air District	Amador County APCD
Air Basin	Mountain Counties
TAZ	3002
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	1.00	1.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.39	59.2	57.3	0.17	2.14	46.1	48.3	1.98	6.89	8.87	—	19,010	19,010	0.67	1.10	12.4	19,205
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.69	62.5	56.8	0.17	2.41	47.4	49.2	2.22	6.89	9.11	—	19,083	19,083	0.68	0.84	0.30	19,277
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.07	15.8	14.4	0.04	0.59	12.8	13.4	0.54	1.75	2.29	—	4,852	4,852	0.14	0.34	2.22	4,935
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.38	2.89	2.62	0.01	0.11	2.34	2.45	0.10	0.32	0.42	—	803	803	0.02	0.06	0.37	817

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	7.39	59.2	57.3	0.17	2.14	46.1	48.3	1.98	6.89	8.87	—	19,010	19,010	0.67	1.10	12.4	19,205
2025	5.05	40.1	39.8	0.12	1.47	40.6	42.0	1.36	5.33	6.69	—	13,259	13,259	0.42	0.73	9.79	13,463
2026	0.92	9.10	8.56	0.03	0.33	6.95	7.27	0.30	0.74	1.04	—	2,994	2,994	0.09	0.15	1.95	3,044
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	7.69	62.5	56.8	0.17	2.41	47.4	49.2	2.22	6.89	9.11	—	19,083	19,083	0.68	0.84	0.30	19,277
2025	2.37	26.5	18.7	0.07	0.87	28.0	28.9	0.81	3.03	3.83	—	7,646	7,646	0.15	0.75	0.25	7,873
2026	1.35	14.1	14.0	0.04	0.42	35.6	35.9	0.39	3.66	3.95	—	4,739	4,739	0.12	0.33	0.12	4,840
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.07	15.8	14.4	0.04	0.59	12.8	13.4	0.54	1.75	2.29	—	4,852	4,852	0.14	0.26	1.45	4,935
2025	1.50	14.1	11.8	0.04	0.47	12.4	12.9	0.43	1.53	1.96	—	4,442	4,442	0.11	0.34	2.22	4,549
2026	0.12	1.31	1.29	< 0.005	0.04	2.76	2.80	0.03	0.29	0.32	—	477	477	0.01	0.04	0.24	489
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.38	2.89	2.62	0.01	0.11	2.34	2.45	0.10	0.32	0.42	—	803	803	0.02	0.04	0.24	817
2025	0.27	2.58	2.16	0.01	0.09	2.26	2.35	0.08	0.28	0.36	—	735	735	0.02	0.06	0.37	753
2026	0.02	0.24	0.24	< 0.005	0.01	0.50	0.51	0.01	0.05	0.06	—	79.0	79.0	< 0.005	0.01	0.04	81.0

3. Construction Emissions Details

3.1. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.61	5.40	5.16	0.01	0.21	—	0.21	0.19	—	0.19	—	1,188	1,188	0.05	0.01	—	1,192
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	0.13	86.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	5.40	5.16	0.01	0.21	—	0.21	0.19	—	0.19	—	1,188	1,188	0.05	0.01	—	1,192
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	1.88	1.79	< 0.005	0.07	—	0.07	0.07	—	0.07	—	413	413	0.02	< 0.005	—	415
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.06	< 0.005	< 0.005	< 0.005	2.31	2.31	< 0.005	0.23	0.23	—	28.6	28.6	< 0.005	< 0.005	0.02	30.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.34	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	68.4	68.4	< 0.005	< 0.005	—	68.7
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.42	0.42	< 0.005	0.04	0.04	—	4.74	4.74	< 0.005	< 0.005	< 0.005	4.96
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.04	2.28	0.28	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,012	1,012	< 0.005	0.16	1.60	1,061
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.04	2.40	0.30	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,011	1,011	< 0.005	0.16	0.04	1,059
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.83	0.10	< 0.005	0.01	0.08	0.08	0.01	0.02	0.03	—	352	352	< 0.005	0.06	0.24	369
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.15	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	58.3	58.3	< 0.005	0.01	0.04	61.1

3.3. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.15	23.1	23.5	0.07	0.89	—	0.89	0.82	—	0.82	—	7,770	7,770	0.32	0.06	—	7,797
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.46	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	244	244	< 0.005	0.04	0.40	256
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.15	2.19	0.01	0.08	—	0.08	0.08	—	0.08	—	724	724	0.03	0.01	—	726
Dust From Material Movement	—	—	—	—	—	0.24	0.24	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.05	< 0.005	< 0.005	< 0.005	1.86	1.86	< 0.005	0.19	0.19	—	22.7	22.7	< 0.005	< 0.005	0.02	23.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.39	0.40	< 0.005	0.02	—	0.02	0.01	—	0.01	—	120	120	< 0.005	< 0.005	—	120
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.34	0.34	< 0.005	0.03	0.03	—	3.76	3.76	< 0.005	< 0.005	< 0.005	3.94
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.5. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.28	4.35	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	441	441	0.02	0.02	1.90	448
Vendor	0.01	0.46	0.08	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	246	246	< 0.005	0.04	0.61	257
Hauling	0.02	1.26	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	1.07	689

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.35	3.17	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	392	392	0.03	0.03	0.05	402
Vendor	0.01	0.49	0.09	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	245	245	< 0.005	0.04	0.02	257
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.14	1.48	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	178	178	0.01	0.01	0.36	181
Vendor	< 0.005	0.21	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	< 0.005	0.02	0.12	113
Hauling	0.01	0.59	0.04	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	290	290	< 0.005	0.05	0.20	304
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.03	0.27	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.5	29.5	< 0.005	< 0.005	0.06	29.9
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	17.9	17.9	< 0.005	< 0.005	0.02	18.8
Hauling	< 0.005	0.11	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.0	48.0	< 0.005	0.01	0.03	50.3

3.7. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	2.71	2.81	0.01	0.11	—	0.11	0.10	—	0.10	—	479	479	0.02	< 0.005	—	480
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	0.07	43.8

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.31	1.31	< 0.005	< 0.005	—	1.32
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.12
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.22	0.22	< 0.005	< 0.005	—	0.22
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.05	3.04	0.37	0.01	0.02	0.30	0.32	0.02	0.08	0.10	—	1,349	1,349	< 0.005	0.21	2.13	1,415
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	< 0.005	3.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.9. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	2.71	2.81	0.01	0.11	—	0.11	0.10	—	0.10	—	479	479	0.02	< 0.005	—	480
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	0.07	43.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.31	1.31	< 0.005	< 0.005	—	1.32

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.12
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.22	0.22	< 0.005	< 0.005	—	0.22
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.05	3.04	0.37	0.01	0.02	0.30	0.32	0.02	0.08	0.10	—	1,349	1,349	< 0.005	0.21	2.13	1,415
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	< 0.005	3.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.11. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	2.71	2.81	0.01	0.11	—	0.11	0.10	—	0.10	—	479	479	0.02	< 0.005	—	480
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.10	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	< 0.005	43.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.31	1.31	< 0.005	< 0.005	—	1.32
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.12
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.22	0.22	< 0.005	< 0.005	—	0.22

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.05	3.19	0.39	0.01	0.02	0.30	0.32	0.02	0.08	0.10	—	1,348	1,348	< 0.005	0.21	0.06	1,412
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	< 0.005	3.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.13. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	3.82	3.76	0.01	0.16	—	0.16	0.14	—	0.14	—	946	946	0.04	0.01	—	949
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	0.13	86.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	3.82	3.76	0.01	0.16	—	0.16	0.14	—	0.14	—	946	946	0.04	0.01	—	949
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.8	51.8	< 0.005	< 0.005	—	52.0
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.36	0.36	< 0.005	0.04	0.04	—	4.50	4.50	< 0.005	< 0.005	< 0.005	4.72
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.58	8.58	< 0.005	< 0.005	—	8.61

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.75	0.75	< 0.005	< 0.005	< 0.005	0.78
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.15. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	4.12	3.78	0.01	0.17	—	0.17	0.16	—	0.16	—	946	946	0.04	0.01	—	949
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.18	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	83.4	83.4	< 0.005	0.01	< 0.005	87.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.34	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	77.7	77.7	< 0.005	< 0.005	—	78.0
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.55	0.55	< 0.005	0.05	0.05	—	6.86	6.86	< 0.005	< 0.005	< 0.005	7.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.9	12.9	< 0.005	< 0.005	—	12.9
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.19
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.17. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.11	1.02	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	120	120	0.01	0.01	0.02	122
Vendor	< 0.005	0.26	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	124	124	< 0.005	0.02	0.01	130
Hauling	0.02	1.42	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	667	667	< 0.005	0.10	0.03	698

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.03	13.6
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.4	13.4	< 0.005	< 0.005	0.01	14.1
Hauling	< 0.005	0.15	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	72.0	72.0	< 0.005	0.01	0.05	75.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.20	2.20	< 0.005	< 0.005	< 0.005	2.26
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.23	2.23	< 0.005	< 0.005	< 0.005	2.33
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.01	12.5

3.19. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	1.30	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	132	132	0.01	< 0.005	0.57	134
Vendor	0.01	0.23	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	123	123	< 0.005	0.02	0.31	128
Hauling	0.02	1.26	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	1.07	689
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.10	0.95	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	118	118	0.01	0.01	0.01	120
Vendor	< 0.005	0.24	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	123	123	< 0.005	0.02	0.01	128
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.26	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.7	30.7	< 0.005	< 0.005	0.06	31.2
Vendor	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.1	31.1	< 0.005	< 0.005	0.03	32.6
Hauling	< 0.005	0.34	0.02	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	167	167	< 0.005	0.03	0.12	175

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.08	5.08	< 0.005	< 0.005	0.01	5.16
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.15	5.15	< 0.005	< 0.005	0.01	5.40
Hauling	< 0.005	0.06	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.6	27.6	< 0.005	< 0.005	0.02	28.9

3.21. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.23. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	5.70	5.19	0.01	0.22	—	0.22	0.20	—	0.20	—	1,188	1,188	0.05	0.01	—	1,192
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.44	0.02	< 0.005	< 0.005	16.6	16.6	< 0.005	1.66	1.66	—	206	206	< 0.005	0.03	0.01	216
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.62	0.56	< 0.005	0.02	—	0.02	0.02	—	0.02	—	128	128	0.01	< 0.005	—	129
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.05	< 0.005	< 0.005	< 0.005	1.80	1.80	< 0.005	0.18	0.18	—	22.3	22.3	< 0.005	< 0.005	0.02	23.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.2	21.2	< 0.005	< 0.005	—	21.3
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.33	0.33	< 0.005	0.03	0.03	—	3.69	3.69	< 0.005	< 0.005	< 0.005	3.87
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.04	2.52	0.29	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,026	1,026	< 0.005	0.16	0.04	1,074
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.27	0.03	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	111	111	< 0.005	0.02	0.08	116
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.05	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	0.01	19.2

3.25. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	5.40	5.16	0.01	0.21	—	0.21	0.19	—	0.19	—	1,188	1,188	0.05	0.01	—	1,192

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.39	0.02	< 0.005	< 0.005	16.6	16.6	< 0.005	1.66	1.66	—	203	203	< 0.005	0.03	0.33	213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	5.40	5.16	0.01	0.21	—	0.21	0.19	—	0.19	—	1,188	1,188	0.05	0.01	—	1,192
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.41	0.02	< 0.005	< 0.005	16.6	16.6	< 0.005	1.66	1.66	—	203	203	< 0.005	0.03	0.01	213
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.46	1.39	< 0.005	0.06	—	0.06	0.05	—	0.05	—	321	321	0.01	< 0.005	—	322
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.11	0.01	< 0.005	< 0.005	4.49	4.49	< 0.005	0.45	0.45	—	54.9	54.9	< 0.005	0.01	0.04	57.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.27	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	53.1	53.1	< 0.005	< 0.005	—	53.3
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.82	0.82	< 0.005	0.08	0.08	—	9.10	9.10	< 0.005	< 0.005	0.01	9.53

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.04	2.28	0.28	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,012	1,012	< 0.005	0.16	1.60	1,061
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.04	2.40	0.30	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,011	1,011	< 0.005	0.16	0.04	1,059
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.64	0.08	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	273	273	< 0.005	0.04	0.19	286
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.12	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	45.2	45.2	< 0.005	0.01	0.03	47.4

3.27. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.37	26.8	25.6	0.07	1.05	—	1.05	0.96	—	0.96	—	7,914	7,914	0.32	0.06	—	7,941
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.49	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	247	247	< 0.005	0.04	0.40	259
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.37	26.8	25.6	0.07	1.05	—	1.05	0.96	—	0.96	—	7,914	7,914	0.32	0.06	—	7,941
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.52	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	247	247	< 0.005	0.04	0.01	259
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	4.04	3.85	0.01	0.16	—	0.16	0.15	—	0.15	—	1,192	1,192	0.05	0.01	—	1,197
Dust From Material Movement	—	—	—	—	—	0.39	0.39	—	0.20	0.20	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.08	< 0.005	< 0.005	< 0.005	3.00	3.01	< 0.005	0.30	0.30	—	37.3	37.3	< 0.005	0.01	0.03	39.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.74	0.70	< 0.005	0.03	—	0.03	0.03	—	0.03	—	197	197	0.01	< 0.005	—	198
Dust From Material Movement	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—

Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.55	0.55	< 0.005	0.05	0.05	—	6.17	6.17	< 0.005	< 0.005	< 0.005	6.46
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.29. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.34	0.29	4.64	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	449	449	0.02	0.02	2.01	456
Vendor	0.01	0.49	0.09	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	249	249	< 0.005	0.04	0.62	261
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	667	667	< 0.005	0.10	1.08	699
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.38	3.41	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	399	399	0.03	0.03	0.05	408
Vendor	0.01	0.52	0.09	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	249	249	< 0.005	0.04	0.02	260
Hauling	0.02	1.42	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	667	667	< 0.005	0.10	0.03	698
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.09	0.98	0.00	0.00	0.11	0.11	0.00	0.02	0.02	—	112	112	0.01	0.01	0.24	115
Vendor	< 0.005	0.14	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	67.8	67.8	< 0.005	0.01	0.07	70.9
Hauling	< 0.005	0.38	0.02	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	182	182	< 0.005	0.03	0.13	190
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.18	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.5	18.5	< 0.005	< 0.005	0.04	19.0
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.01	11.7
Hauling	< 0.005	0.07	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.1	30.1	< 0.005	< 0.005	0.02	31.5

3.31. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Architectu Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectu ral Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.28	4.35	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	441	441	0.02	0.02	1.90	448
Vendor	0.01	0.46	0.08	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	246	246	< 0.005	0.04	0.61	257
Hauling	0.02	1.26	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	1.07	689
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.35	3.17	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	392	392	0.03	0.03	0.05	402
Vendor	0.01	0.49	0.09	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	245	245	< 0.005	0.04	0.02	257
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.10	1.09	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	132	132	0.01	0.01	0.27	134
Vendor	< 0.005	0.16	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	80.1	80.1	< 0.005	0.01	0.09	83.9
Hauling	0.01	0.43	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	214	214	< 0.005	0.03	0.15	225

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.20	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.8	21.8	< 0.005	< 0.005	0.04	22.1
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.01	13.9
Hauling	< 0.005	0.08	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.5	35.5	< 0.005	0.01	0.03	37.2

3.33. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.44	26.5	24.4	0.07	1.05	—	1.05	0.97	—	0.97	—	7,699	7,699	0.31	0.06	—	7,726
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.49	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	247	247	< 0.005	0.04	0.40	259
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.44	26.5	24.4	0.07	1.05	—	1.05	0.97	—	0.97	—	7,699	7,699	0.31	0.06	—	7,726
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.52	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	247	247	< 0.005	0.04	0.01	259
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.71	5.44	5.01	0.01	0.22	—	0.22	0.20	—	0.20	—	1,582	1,582	0.06	0.01	—	1,587
Dust From Material Movement	—	—	—	—	—	0.53	0.53	—	0.27	0.27	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.11	0.01	< 0.005	< 0.005	4.10	4.10	< 0.005	0.41	0.41	—	50.8	50.8	< 0.005	0.01	0.04	53.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.99	0.91	< 0.005	0.04	—	0.04	0.04	—	0.04	—	262	262	0.01	< 0.005	—	263
Dust From Material Movement	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.75	0.75	< 0.005	0.07	0.07	—	8.42	8.42	< 0.005	< 0.005	0.01	8.81
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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

Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.35. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	3.82	3.76	0.01	0.16	—	0.16	0.14	—	0.14	—	946	946	0.04	0.01	—	949
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.7	20.7	< 0.005	< 0.005	—	20.8

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.15	0.15	< 0.005	0.01	0.01	—	1.80	1.80	< 0.005	< 0.005	< 0.005	1.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.43	3.43	< 0.005	< 0.005	—	3.44
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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

3.37. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.30	12.3	11.6	0.02	0.57	—	0.57	0.52	—	0.52	—	1,868	1,868	0.08	0.02	—	1,875
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.39	0.02	< 0.005	< 0.005	15.8	15.8	< 0.005	1.58	1.58	—	196	196	< 0.005	0.03	0.32	206
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.20	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.7	30.7	< 0.005	< 0.005	—	30.8
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.26	0.26	< 0.005	0.03	0.03	—	3.22	3.22	< 0.005	< 0.005	< 0.005	3.38
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.08	5.08	< 0.005	< 0.005	—	5.10

Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.56
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.39. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.05	4.02	0.25	0.02	0.03	0.45	0.48	0.03	0.12	0.15	—	2,000	2,000	< 0.005	0.31	3.25	2,096

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.17	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	82.2	82.2	< 0.005	0.01	0.06	86.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.6	13.6	< 0.005	< 0.005	0.01	14.2

3.41. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.34	18.4	25.1	0.02	1.26	—	1.26	1.15	—	1.15	—	2,333	2,333	0.09	0.02	—	2,341
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.01	0.43	0.02	< 0.005	< 0.005	17.4	17.5	< 0.005	1.74	1.75	—	217	217	< 0.005	0.03	0.35	227
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.53	1.82	2.48	< 0.005	0.12	—	0.12	0.11	—	0.11	—	230	230	0.01	< 0.005	—	231
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.04	< 0.005	< 0.005	< 0.005	1.72	1.72	< 0.005	0.17	0.17	—	21.4	21.4	< 0.005	< 0.005	0.02	22.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.33	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	38.1	38.1	< 0.005	< 0.005	—	38.2
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	3.54	3.54	< 0.005	< 0.005	< 0.005	3.71
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.08	6.70	0.41	0.04	0.05	0.75	0.80	0.05	0.20	0.26	—	3,333	3,333	< 0.005	0.52	5.41	3,494
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	0.01	0.69	0.04	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	329	329	< 0.005	0.05	0.23	344
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.13	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	54.4	54.4	< 0.005	0.01	0.04	57.0

3.43. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	2.32	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	224	224	0.01	0.01	1.00	228
Vendor	0.01	0.61	0.11	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	311	311	< 0.005	0.05	0.77	326
Hauling	0.02	2.01	0.12	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,000	1,000	< 0.005	0.16	1.62	1,048
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.19	1.70	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	199	199	0.01	0.01	0.03	204
Vendor	0.01	0.65	0.11	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	311	311	< 0.005	0.05	0.02	325
Hauling	0.02	2.13	0.13	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,000	1,000	< 0.005	0.16	0.04	1,046
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.56	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	64.1	64.1	< 0.005	< 0.005	0.14	65.7
Vendor	< 0.005	0.20	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	97.2	97.2	< 0.005	0.01	0.10	102
Hauling	0.01	0.66	0.04	< 0.005	0.01	0.07	0.07	0.01	0.02	0.02	—	312	312	< 0.005	0.05	0.22	327
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.10	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.02	10.9
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.1	16.1	< 0.005	< 0.005	0.02	16.8
Hauling	< 0.005	0.12	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	51.7	51.7	< 0.005	0.01	0.04	54.1

3.45. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.10	0.95	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	118	118	0.01	0.01	0.01	120
Vendor	< 0.005	0.12	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	61.4	61.4	< 0.005	0.01	< 0.005	64.2
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.02	0.16	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.3	19.3	< 0.005	< 0.005	0.04	19.6
Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	0.01	10.3
Hauling	< 0.005	0.21	0.01	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	105	105	< 0.005	0.02	0.07	110
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	0.01	3.25
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.70
Hauling	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.4	17.4	< 0.005	< 0.005	0.01	18.2

3.47. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.10	0.89	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	116	116	0.01	0.01	0.01	117
Vendor	< 0.005	0.11	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	60.5	60.5	< 0.005	0.01	< 0.005	63.2
Hauling	0.02	1.27	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	646	646	< 0.005	0.10	0.03	676
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.31	5.31	< 0.005	< 0.005	0.01	5.39
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.70	2.70	< 0.005	< 0.005	< 0.005	2.82
Hauling	< 0.005	0.06	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.8	28.8	< 0.005	< 0.005	0.02	30.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.47
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.77	4.77	< 0.005	< 0.005	< 0.005	5.00

3.49. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	3.11	3.65	0.01	0.10	—	0.10	0.09	—	0.09	—	854	854	0.03	0.01	—	857

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.10	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	< 0.005	43.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.4	23.4	< 0.005	< 0.005	—	23.5
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	1.15	1.15	< 0.005	< 0.005	< 0.005	1.20
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.87	3.87	< 0.005	< 0.005	—	3.89
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.51. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	3.11	3.65	0.01	0.10	—	0.10	0.09	—	0.09	—	854	854	0.03	0.01	—	857
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.10	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	< 0.005	43.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.4	30.4	< 0.005	< 0.005	—	30.5

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	1.49	1.49	< 0.005	< 0.005	< 0.005	1.56
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.03	5.03	< 0.005	< 0.005	—	5.05
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.25	0.25	< 0.005	< 0.005	< 0.005	0.26
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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

3.53. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	5.17	4.99	0.01	0.20	—	0.20	0.18	—	0.18	—	1,157	1,157	0.05	0.01	—	1,161
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.47	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	105	105	< 0.005	< 0.005	—	105
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.60	0.60	< 0.005	0.06	0.06	—	7.43	7.43	< 0.005	< 0.005	0.01	7.79
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.3	17.3	< 0.005	< 0.005	—	17.4

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	1.23	1.23	< 0.005	< 0.005	< 0.005	1.29
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.04	2.40	0.30	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,011	1,011	< 0.005	0.16	0.04	1,059
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.22	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	91.5	91.5	< 0.005	0.01	0.06	95.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.1	15.1	< 0.005	< 0.005	0.01	15.9

3.55. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	5.17	4.99	0.01	0.20	—	0.20	0.18	—	0.18	—	1,157	1,157	0.05	0.01	—	1,161
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.45
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.40
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.57. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	4.96	4.95	0.01	0.19	—	0.19	0.17	—	0.17	—	1,157	1,157	0.05	0.01	—	1,161

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	80.9	80.9	< 0.005	0.01	< 0.005	84.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.22	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.6	51.6	< 0.005	< 0.005	—	51.8
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.30	0.30	< 0.005	0.03	0.03	—	3.61	3.61	< 0.005	< 0.005	< 0.005	3.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.55	8.55	< 0.005	< 0.005	—	8.58
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.63
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.59. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	1.30	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	132	132	0.01	< 0.005	0.57	134
Vendor	0.01	0.46	0.08	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	246	246	< 0.005	0.04	0.61	257
Hauling	0.02	1.26	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	1.07	689
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.10	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.1
Vendor	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.2	24.2	< 0.005	< 0.005	0.03	25.3
Hauling	< 0.005	0.13	0.01	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	64.8	64.8	< 0.005	0.01	0.05	67.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.01
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.01	4.01	< 0.005	< 0.005	< 0.005	4.20
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	0.01	11.2

3.61. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	2.38	1.57	< 0.005	0.10	—	0.10	0.09	—	0.09	—	312	312	0.01	< 0.005	—	313
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.12	5.12	< 0.005	< 0.005	—	5.14
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.85	0.85	< 0.005	< 0.005	—	0.85
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.63. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.20	17.2	16.0	0.04	0.69	—	0.69	0.63	—	0.63	—	4,664	4,664	0.19	0.04	—	4,680

Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.39	0.02	< 0.005	< 0.005	16.6	16.6	< 0.005	1.66	1.66	—	203	203	< 0.005	0.03	0.33	213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	1.18	1.09	< 0.005	0.05	—	0.05	0.04	—	0.04	—	319	319	0.01	< 0.005	—	321
Dust From Material Movement	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.03	< 0.005	< 0.005	< 0.005	1.14	1.14	< 0.005	0.11	0.11	—	13.9	13.9	< 0.005	< 0.005	0.01	14.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.21	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.9	52.9	< 0.005	< 0.005	—	53.1
Dust From Material Movement	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.21	0.21	< 0.005	0.02	0.02	—	2.31	2.31	< 0.005	< 0.005	< 0.005	2.42
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.65. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.19	1.76	< 0.005	0.04	—	0.04	0.04	—	0.04	—	290	290	0.01	< 0.005	—	291
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	0.07	43.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.97	3.97	< 0.005	< 0.005	—	3.99
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.60
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.66	0.66	< 0.005	< 0.005	—	0.66
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.10
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.67. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.17	1.59	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	196	196	0.01	0.01	0.02	201
Vendor	0.01	0.37	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	184	184	< 0.005	0.03	0.01	193
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.30	1.30	< 0.005	< 0.005	< 0.005	1.36
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.63	4.63	< 0.005	< 0.005	< 0.005	4.85
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.24
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.80

3.69. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.16	1.49	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	193	193	0.01	0.01	0.02	196

Vendor	0.01	0.34	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	181	181	< 0.005	0.03	0.01	189
Hauling	0.02	1.27	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	646	646	< 0.005	0.10	0.03	676
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.20	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.6	25.6	< 0.005	< 0.005	0.05	26.0
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.4	23.4	< 0.005	< 0.005	0.02	24.5
Hauling	< 0.005	0.16	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	83.5	83.5	< 0.005	0.01	0.06	87.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.24	4.24	< 0.005	< 0.005	0.01	4.31
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.88	3.88	< 0.005	< 0.005	< 0.005	4.06
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5

3.71. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	3.09	3.08	0.01	0.13	—	0.13	0.12	—	0.12	—	857	857	0.03	0.01	—	860
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.4	16.4	< 0.005	< 0.005	—	16.5
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.72	2.72	< 0.005	< 0.005	—	2.73
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.73. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.51	0.78	< 0.005	0.02	—	0.02	0.02	—	0.02	—	114	114	< 0.005	< 0.005	—	115
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.11	0.01	< 0.005	< 0.005	4.15	4.16	< 0.005	0.42	0.42	—	51.0	51.0	< 0.005	0.01	< 0.005	53.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.27	6.27	< 0.005	< 0.005	—	6.29
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.23	0.23	< 0.005	0.02	0.02	—	2.80	2.80	< 0.005	< 0.005	< 0.005	2.93
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.04	1.04	< 0.005	< 0.005	—	1.04
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.48
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.75. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.83	1.02	< 0.005	0.03	—	0.03	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.00	1.00	< 0.005	< 0.005	—	1.00
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.17	0.17	< 0.005	< 0.005	—	0.17

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.77. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.82	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.99	2.99	< 0.005	< 0.005	—	3.00
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.50	0.50	< 0.005	< 0.005	—	0.50
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.79. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	2.07	3.29	< 0.005	0.07	—	0.07	0.06	—	0.06	—	509	509	0.02	< 0.005	—	511

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.01	0.56	0.03	< 0.005	< 0.005	24.1	24.1	< 0.005	2.41	2.41	—	290	290	< 0.005	0.04	0.01	303
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.3	22.3	< 0.005	< 0.005	—	22.4
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	1.06	1.06	< 0.005	0.11	0.11	—	12.7	12.7	< 0.005	< 0.005	0.01	13.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.69	3.69	< 0.005	< 0.005	—	3.71
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	2.10	2.10	< 0.005	< 0.005	< 0.005	2.20
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.81. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	2.07	3.29	< 0.005	0.07	—	0.07	0.06	—	0.06	—	509	509	0.02	< 0.005	—	511
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.01	0.56	0.03	< 0.005	< 0.005	24.1	24.1	< 0.005	2.41	2.41	—	290	290	< 0.005	0.04	0.01	303
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.7	16.7	< 0.005	< 0.005	—	16.8

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.79	0.79	< 0.005	0.08	0.08	—	9.52	9.52	< 0.005	< 0.005	0.01	9.97
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.77	2.77	< 0.005	< 0.005	—	2.78
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	1.58	1.58	< 0.005	< 0.005	< 0.005	1.65
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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

3.83. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	1.23	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	130	130	0.01	< 0.005	0.53	132
Vendor	< 0.005	0.22	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	121	121	< 0.005	0.02	0.27	127
Hauling	0.02	1.20	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	646	646	< 0.005	0.10	1.02	677
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.83	7.83	< 0.005	< 0.005	0.02	7.95
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.95	7.95	< 0.005	< 0.005	0.01	8.31
Hauling	< 0.005	0.08	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.5	42.5	< 0.005	0.01	0.03	44.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.30	1.30	< 0.005	< 0.005	< 0.005	1.32
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.32	1.32	< 0.005	< 0.005	< 0.005	1.38
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.03	7.03	< 0.005	< 0.005	< 0.005	7.36

3.85. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	3.09	3.08	0.01	0.13	—	0.13	0.12	—	0.12	—	857	857	0.03	0.01	—	860

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.1	41.1	< 0.005	0.01	0.06	43.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.89	3.89	< 0.005	< 0.005	—	3.90
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.87. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	4.34	4.12	0.01	0.18	—	0.18	0.17	—	0.17	—	1,155	1,155	0.05	0.01	—	1,159
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.1	41.1	< 0.005	0.01	0.06	43.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.14	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.0	38.0	< 0.005	< 0.005	—	38.1
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	1.35	1.35	< 0.005	< 0.005	< 0.005	1.42
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.29	6.29	< 0.005	< 0.005	—	6.31
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.22	0.22	< 0.005	< 0.005	< 0.005	0.23
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.89. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	4.34	4.12	0.01	0.18	—	0.18	0.17	—	0.17	—	1,155	1,155	0.05	0.01	—	1,159
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.1	41.1	< 0.005	0.01	0.06	43.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.14	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.0	38.0	< 0.005	< 0.005	—	38.1
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	1.35	1.35	< 0.005	< 0.005	< 0.005	1.42
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.29	6.29	< 0.005	< 0.005	—	6.31
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.22	0.22	< 0.005	< 0.005	< 0.005	0.23
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.91. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	2.93	1.30	< 0.005	0.26	—	0.26	0.24	—	0.24	—	149	149	0.01	< 0.005	—	149
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.21	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	10.7	10.7	< 0.005	< 0.005	—	10.7
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.77	1.77	< 0.005	< 0.005	—	1.77

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.93. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	4.41	1.81	< 0.005	0.32	—	0.32	0.30	—	0.30	—	151	151	0.01	< 0.005	—	151
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	4.41	1.81	< 0.005	0.32	—	0.32	0.30	—	0.30	—	151	151	0.01	< 0.005	—	151
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	1.89	0.77	< 0.005	0.14	—	0.14	0.13	—	0.13	—	64.7	64.7	< 0.005	< 0.005	—	64.9
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.35	0.14	< 0.005	0.03	—	0.03	0.02	—	0.02	—	10.7	10.7	< 0.005	< 0.005	—	10.7

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
P4.2 - Crest form and pour concrete	Grading	5/30/2025	10/24/2025	6.00	127	—
P4.1 - Crest excavation/ subgrade	Grading	4/21/2025	5/29/2025	6.00	34.0	—
P4 - Crest structure	Grading	4/21/2025	10/24/2025	6.00	161	—
P3.6 - Trench Cutoff Concrete 3	Grading	4/14/2025	4/14/2025	1.00	1.00	—
P3.5 - Trench Cutoff Concrete 2	Grading	4/7/2025	4/7/2025	1.00	1.00	—
P3.4 - Trench Cutoff Concrete 1	Grading	3/31/2025	3/31/2025	1.00	1.00	—
P3.3 - Place piles, sheets, and concrete	Grading	3/27/2025	4/18/2025	6.00	20.0	—
P3.1 - Mass concrete	Grading	11/16/2024	12/20/2024	6.00	30.0	—
P3 - Cofferdam	Grading	11/16/2024	4/18/2025	6.00	132	—
P2.3 - Drains, Cleanouts, and Backfill	Grading	4/28/2025	5/19/2025	6.00	19.0	—
P2.2 - Spillway form and pour concrete	Grading	11/16/2024	4/25/2025	6.00	138	—
P2.1 - Spillway excavation/subgrade	Grading	9/7/2024	11/9/2024	6.00	55.0	—
P2 - Spillway chute and flip bucket	Grading	9/7/2024	5/19/2025	6.00	218	—
P1.4 - Access road construction	Grading	8/22/2024	11/16/2024	6.00	75.0	—
P3.2 - Excavate cofferdam	Grading	3/18/2025	3/26/2025	6.00	8.00	—
P1.3 - Laydown area development	Grading	8/22/2024	8/28/2024	6.00	6.00	—
P1.2 - Mobilization	Grading	8/5/2024	8/21/2024	6.00	15.0	—

P1.1 - Tree removal	Grading	7/8/2024	8/17/2024	6.00	36.0	—
P1 - Mobilization and access development	Grading	7/8/2024	11/16/2024	6.00	114	—
P5 - Dam notch and tie-in chute	Grading	10/25/2025	1/19/2026	6.00	74.0	—
P5.1 - Demolition	Grading	10/25/2025	11/5/2025	6.00	10.0	—
P5.2 - Excavation, Subgrade	Grading	11/6/2025	11/20/2025	6.00	13.0	—
P5.3 - Form and Pour Concrete	Grading	11/21/2025	12/29/2025	6.00	33.0	—
P5.4 - Install Footbridge	Grading	12/30/2025	1/19/2026	6.00	18.0	—
P6 - Plunge pool	Grading	8/5/2025	9/15/2025	6.00	36.0	—
P6.1 - Flow bypass	Grading	8/5/2025	8/11/2025	6.00	6.00	—
P6.2 - Excavation	Grading	8/12/2025	9/9/2025	6.00	25.0	—
P6.3 - Slope protection	Grading	9/10/2025	9/15/2025	6.00	5.00	—
P7 - Remaining Work Scope	Grading	12/29/2025	2/24/2026	6.00	50.0	—
P7.1 - Cofferdam removal	Grading	1/9/2026	1/16/2026	6.00	7.00	—
P7.2 - Lighting	Grading	1/19/2026	2/10/2026	6.00	20.0	—
P7.3 - Log boom	Grading	12/29/2025	1/9/2026	6.00	11.0	—
P7.4 - Restoration	Grading	1/16/2026	2/3/2026	6.00	16.0	—
P7.5 - Demobilization	Grading	2/11/2026	2/24/2026	6.00	12.0	—
P8 - Spillway abandonment	Grading	4/9/2026	5/6/2026	6.00	24.0	—
P8.1 - Remove Cofferdam	Grading	4/9/2026	4/20/2026	6.00	10.0	—
P8.2 - Canal Side Channel	Grading	4/9/2026	4/22/2026	6.00	12.0	—
P8.3 - Cover Bathtub	Grading	4/23/2026	5/6/2026	6.00	12.0	—
P9 - Batch Plant Equip	Grading	11/1/2024	12/31/2025	3.00	183	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
P4.2 - Crest form and pour concrete	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P4.2 - Crest form and pour concrete	Air Compressors	Diesel	Average	1.00	5.00	37.0	0.48
P4.2 - Crest form and pour concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P4.2 - Crest form and pour concrete	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P4.2 - Crest form and pour concrete	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P4.1 - Crest excavation/ subgrade	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
P4.1 - Crest excavation/ subgrade	Off-Highway Trucks	Diesel	Average	4.00	9.00	376	0.38
P4.1 - Crest excavation/ subgrade	Excavators	Diesel	Average	1.00	9.00	36.0	0.38
P4.1 - Crest excavation/ subgrade	Bore/Drill Rigs	Diesel	Average	1.00	5.00	83.0	0.50
P3.6 - Trench Cutoff Concrete 3	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.6 - Trench Cutoff Concrete 3	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P3.6 - Trench Cutoff Concrete 3	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P3.6 - Trench Cutoff Concrete 3	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
P3.5 - Trench Cutoff Concrete 2	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.5 - Trench Cutoff Concrete 2	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74

P3.5 - Trench Cutoff Concrete 2	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P3.5 - Trench Cutoff Concrete 2	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
P3.4 - Trench Cutoff Concrete 1	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.4 - Trench Cutoff Concrete 1	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P3.4 - Trench Cutoff Concrete 1	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P3.4 - Trench Cutoff Concrete 1	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
P3.3 - Place piles, sheets, and concrete	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.3 - Place piles, sheets, and concrete	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P3.3 - Place piles, sheets, and concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P3.1 - Mass concrete	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.1 - Mass concrete	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P3.1 - Mass concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P2.2 - Spillway form and pour concrete	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P2.2 - Spillway form and pour concrete	Air Compressors	Diesel	Average	1.00	5.00	37.0	0.48
P2.2 - Spillway form and pour concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P2.2 - Spillway form and pour concrete	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P2.2 - Spillway form and pour concrete	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P2.1 - Spillway excavation/subgrade	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

P2.1 - Spillway excavation/subgrade	Off-Highway Trucks	Diesel	Average	4.00	9.00	376	0.38
P2.1 - Spillway excavation/subgrade	Excavators	Diesel	Average	1.00	9.00	36.0	0.38
P2.1 - Spillway excavation/subgrade	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P2.1 - Spillway excavation/subgrade	Bore/Drill Rigs	Diesel	Average	1.00	5.00	83.0	0.50
P1.4 - Access road construction	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
P1.4 - Access road construction	Off-Highway Trucks	Diesel	Average	4.00	9.00	376	0.38
P1.4 - Access road construction	Excavators	Diesel	Average	1.00	9.00	36.0	0.38
P1.4 - Access road construction	Rollers	Diesel	Average	1.00	10.0	36.0	0.38
P3.2 - Excavate cofferdam	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.2 - Excavate cofferdam	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P3.2 - Excavate cofferdam	Cranes	Diesel	Average	1.00	6.00	367	0.29
P1.3 - Laydown area development	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
P1.3 - Laydown area development	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P1.3 - Laydown area development	Rubber Tired Loaders	Diesel	Average	1.00	6.00	150	0.36
P1.1 - Tree removal	Rubber Tired Loaders	Diesel	Average	1.00	8.00	96.0	0.40
P1.1 - Tree removal	Skid Steer Loaders	Diesel	Average	1.00	8.00	82.0	0.20
P1.1 - Tree removal	Skid Steer Loaders	Diesel	Average	1.00	6.00	71.0	0.37
P1.1 - Tree removal	Rubber Tired Loaders	Diesel	Average	1.00	6.00	150	0.36

P1.1 - Tree removal	Other Construction Equipment	Diesel	Average	2.00	8.00	82.0	0.42
P1.1 - Tree removal	Other Construction Equipment	Diesel	Average	1.00	6.00	82.0	0.42
P1.1 - Tree removal	Other Material Handling Equipment	Gasoline	Average	3.00	8.00	1.86	0.69
P5.1 - Demolition	Excavators	Diesel	Average	2.00	10.0	36.0	0.38
P5.1 - Demolition	Off-Highway Trucks	Diesel	Average	1.00	3.00	376	0.38
P5.2 - Excavation, Subgrade	Excavators	Diesel	Average	2.00	10.0	36.0	0.38
P5.2 - Excavation, Subgrade	Off-Highway Trucks	Diesel	Average	1.00	3.00	376	0.38
P5.3 - Form and Pour Concrete	Pumps	Diesel	Average	1.00	2.00	11.0	0.74
P5.3 - Form and Pour Concrete	Air Compressors	Diesel	Average	1.00	5.00	37.0	0.48
P5.3 - Form and Pour Concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P5.3 - Form and Pour Concrete	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P5.3 - Form and Pour Concrete	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P5.4 - Install Footbridge	Pumps	Diesel	Average	1.00	2.00	11.0	0.74
P5.4 - Install Footbridge	Air Compressors	Diesel	Average	1.00	5.00	37.0	0.48
P5.4 - Install Footbridge	Cranes	Diesel	Average	1.00	6.00	367	0.29
P5.4 - Install Footbridge	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P5.4 - Install Footbridge	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P6.1 - Flow bypass	Generator Sets	Diesel	Average	1.00	24.0	14.0	0.74
P6.2 - Excavation	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P6.2 - Excavation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
P6.2 - Excavation	Off-Highway Trucks	Diesel	Average	2.00	9.00	376	0.38

P6.2 - Excavation	Excavators	Diesel	Average	1.00	9.00	36.0	0.38
P6.3 - Slope protection	Bore/Drill Rigs	Diesel	Average	1.00	5.00	83.0	0.50
P6.3 - Slope protection	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P7.1 - Cofferdam removal	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P7.1 - Cofferdam removal	Cranes	Diesel	Average	1.00	6.00	367	0.29
P7.2 - Lighting	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P7.3 - Log boom	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
P7.4 - Restoration	Skid Steer Loaders	Diesel	Average	1.00	10.0	71.0	0.37
P7.4 - Restoration	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P7.4 - Restoration	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P7.5 - Demobilization	Skid Steer Loaders	Diesel	Average	1.00	10.0	71.0	0.37
P7.5 - Demobilization	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P7.5 - Demobilization	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P8.1 - Remove Cofferdam	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P8.1 - Remove Cofferdam	Cranes	Diesel	Average	1.00	6.00	367	0.29
P8.2 - Canal Side Channel	Cranes	Diesel	Average	1.00	8.00	367	0.29
P8.2 - Canal Side Channel	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P8.2 - Canal Side Channel	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P8.3 - Cover Bathtub	Cranes	Diesel	Average	1.00	8.00	367	0.29
P8.3 - Cover Bathtub	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P8.3 - Cover Bathtub	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P9 - Batch Plant Equip	Rubber Tired Loaders	Diesel	Average	1.00	6.00	60.0	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
P1 - Mobilization and access development	—	—	—	—
P1 - Mobilization and access development	Worker	20.0	14.1	LDA,LDT1,LDT2
P1 - Mobilization and access development	Vendor	10.0	8.98	HHDT,MHDT
P1 - Mobilization and access development	Hauling	6.00	40.3	HHDT
P1 - Mobilization and access development	Onsite truck	0.00	0.00	HHDT
P1.1 - Tree removal	—	—	—	—
P1.1 - Tree removal	Worker	0.00	14.1	LDA,LDT1,LDT2
P1.1 - Tree removal	Vendor	0.00	8.98	HHDT,MHDT
P1.1 - Tree removal	Hauling	20.0	40.3	HHDT
P1.1 - Tree removal	Onsite truck	1.00	52.5	HHDT
P1.2 - Mobilization	—	—	—	—
P1.2 - Mobilization	Worker	0.00	14.1	LDA,LDT1,LDT2
P1.2 - Mobilization	Vendor	0.00	8.98	HHDT,MHDT
P1.2 - Mobilization	Hauling	12.0	40.3	HHDT
P1.2 - Mobilization	Onsite truck	0.00	0.00	HHDT
P1.3 - Laydown area development	—	—	—	—
P1.3 - Laydown area development	Worker	0.00	14.1	LDA,LDT1,LDT2
P1.3 - Laydown area development	Vendor	0.00	8.98	HHDT,MHDT
P1.3 - Laydown area development	Hauling	0.00	20.0	HHDT
P1.3 - Laydown area development	Onsite truck	1.00	47.5	HHDT

P1.4 - Access road construction	—	—	—	—
P1.4 - Access road construction	Worker	0.00	14.1	LDA,LDT1,LDT2
P1.4 - Access road construction	Vendor	0.00	8.98	HHDT,MHDT
P1.4 - Access road construction	Hauling	0.00	20.0	HHDT
P1.4 - Access road construction	Onsite truck	1.00	60.0	HHDT
P2 - Spillway chute and flip bucket	—	—	—	—
P2 - Spillway chute and flip bucket	Worker	40.0	14.1	LDA,LDT1,LDT2
P2 - Spillway chute and flip bucket	Vendor	8.00	8.98	HHDT,MHDT
P2 - Spillway chute and flip bucket	Hauling	4.00	40.3	HHDT
P2 - Spillway chute and flip bucket	Onsite truck	0.00	0.00	HHDT
P4.2 - Crest form and pour concrete	—	—	—	—
P4.2 - Crest form and pour concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P4.2 - Crest form and pour concrete	Vendor	0.00	8.98	HHDT,MHDT
P4.2 - Crest form and pour concrete	Hauling	30.0	8.00	HHDT
P4.2 - Crest form and pour concrete	Onsite truck	1.00	20.0	HHDT
P4.1 - Crest excavation/ subgrade	—	—	—	—
P4.1 - Crest excavation/ subgrade	Worker	0.00	14.1	LDA,LDT1,LDT2
P4.1 - Crest excavation/ subgrade	Vendor	0.00	8.98	HHDT,MHDT
P4.1 - Crest excavation/ subgrade	Hauling	0.00	20.0	HHDT
P4.1 - Crest excavation/ subgrade	Onsite truck	1.00	60.0	HHDT
P4 - Crest structure	—	—	—	—
P4 - Crest structure	Worker	40.0	14.1	LDA,LDT1,LDT2
P4 - Crest structure	Vendor	8.00	8.98	HHDT,MHDT
P4 - Crest structure	Hauling	4.00	40.3	HHDT
P4 - Crest structure	Onsite truck	0.00	0.00	HHDT
P3.6 - Trench Cutoff Concrete 3	—	—	—	—
P3.6 - Trench Cutoff Concrete 3	Worker	0.00	14.1	LDA,LDT1,LDT2

P3.6 - Trench Cutoff Concrete 3	Vendor	0.00	8.98	HHDT,MHDT
P3.6 - Trench Cutoff Concrete 3	Hauling	40.0	8.00	HHDT
P3.6 - Trench Cutoff Concrete 3	Onsite truck	1.00	10.0	HHDT
P3.5 - Trench Cutoff Concrete 2	—	—	—	—
P3.5 - Trench Cutoff Concrete 2	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.5 - Trench Cutoff Concrete 2	Vendor	0.00	8.98	HHDT,MHDT
P3.5 - Trench Cutoff Concrete 2	Hauling	40.0	8.00	HHDT
P3.5 - Trench Cutoff Concrete 2	Onsite truck	1.00	10.0	HHDT
P3.4 - Trench Cutoff Concrete 1	—	—	—	—
P3.4 - Trench Cutoff Concrete 1	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.4 - Trench Cutoff Concrete 1	Vendor	0.00	8.98	HHDT,MHDT
P3.4 - Trench Cutoff Concrete 1	Hauling	40.0	8.00	HHDT
P3.4 - Trench Cutoff Concrete 1	Onsite truck	1.00	10.0	HHDT
P3.3 - Place piles, sheets, and concrete	—	—	—	—
P3.3 - Place piles, sheets, and concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.3 - Place piles, sheets, and concrete	Vendor	0.00	8.98	HHDT,MHDT
P3.3 - Place piles, sheets, and concrete	Hauling	0.00	20.0	HHDT
P3.3 - Place piles, sheets, and concrete	Onsite truck	1.00	20.0	HHDT
P3.1 - Mass concrete	—	—	—	—
P3.1 - Mass concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.1 - Mass concrete	Vendor	0.00	8.98	HHDT,MHDT
P3.1 - Mass concrete	Hauling	0.00	20.0	HHDT
P3.1 - Mass concrete	Onsite truck	1.00	20.0	HHDT
P3 - Cofferdam	—	—	—	—
P3 - Cofferdam	Worker	12.0	14.1	LDA,LDT1,LDT2
P3 - Cofferdam	Vendor	4.00	8.98	HHDT,MHDT
P3 - Cofferdam	Hauling	4.00	40.3	HHDT

P3 - Cofferdam	Onsite truck	0.00	0.00	HHDT
P2.3 - Drains, Cleanouts, and Backfill	—	—	—	—
P2.3 - Drains, Cleanouts, and Backfill	Worker	0.00	14.1	LDA,LDT1,LDT2
P2.3 - Drains, Cleanouts, and Backfill	Vendor	0.00	8.98	HHDT,MHDT
P2.3 - Drains, Cleanouts, and Backfill	Hauling	0.00	20.0	HHDT
P2.3 - Drains, Cleanouts, and Backfill	Onsite truck	0.00	0.00	HHDT
P2.2 - Spillway form and pour concrete	—	—	—	—
P2.2 - Spillway form and pour concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P2.2 - Spillway form and pour concrete	Vendor	0.00	8.98	HHDT,MHDT
P2.2 - Spillway form and pour concrete	Hauling	30.0	8.00	HHDT
P2.2 - Spillway form and pour concrete	Onsite truck	1.00	50.0	HHDT
P2.1 - Spillway excavation/subgrade	—	—	—	—
P2.1 - Spillway excavation/subgrade	Worker	0.00	14.1	LDA,LDT1,LDT2
P2.1 - Spillway excavation/subgrade	Vendor	0.00	8.98	HHDT,MHDT
P2.1 - Spillway excavation/subgrade	Hauling	0.00	20.0	HHDT
P2.1 - Spillway excavation/subgrade	Onsite truck	1.00	60.0	HHDT
P3.2 - Excavate cofferdam	—	—	—	—
P3.2 - Excavate cofferdam	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.2 - Excavate cofferdam	Vendor	0.00	8.98	HHDT,MHDT
P3.2 - Excavate cofferdam	Hauling	0.00	20.0	HHDT
P3.2 - Excavate cofferdam	Onsite truck	1.00	20.0	HHDT
P5 - Dam notch and tie-in chute	—	—	—	—
P5 - Dam notch and tie-in chute	Worker	12.0	14.1	LDA,LDT1,LDT2
P5 - Dam notch and tie-in chute	Vendor	2.00	8.98	HHDT,MHDT
P5 - Dam notch and tie-in chute	Hauling	4.00	40.3	HHDT
P5 - Dam notch and tie-in chute	Onsite truck	0.00	0.00	HHDT
P5.1 - Demolition	—	—	—	—

P5.1 - Demolition	Worker	0.00	14.1	LDA,LDT1,LDT2
P5.1 - Demolition	Vendor	0.00	8.98	HHDT,MHDT
P5.1 - Demolition	Hauling	0.00	20.0	HHDT
P5.1 - Demolition	Onsite truck	1.00	10.0	HHDT
P5.2 - Excavation, Subgrade	—	—	—	—
P5.2 - Excavation, Subgrade	Worker	0.00	14.1	LDA,LDT1,LDT2
P5.2 - Excavation, Subgrade	Vendor	0.00	8.98	HHDT,MHDT
P5.2 - Excavation, Subgrade	Hauling	0.00	20.0	HHDT
P5.2 - Excavation, Subgrade	Onsite truck	1.00	10.0	HHDT
P5.3 - Form and Pour Concrete	—	—	—	—
P5.3 - Form and Pour Concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P5.3 - Form and Pour Concrete	Vendor	0.00	8.98	HHDT,MHDT
P5.3 - Form and Pour Concrete	Hauling	30.0	8.00	HHDT
P5.3 - Form and Pour Concrete	Onsite truck	1.00	20.0	HHDT
P5.4 - Install Footbridge	—	—	—	—
P5.4 - Install Footbridge	Worker	0.00	14.1	LDA,LDT1,LDT2
P5.4 - Install Footbridge	Vendor	0.00	8.98	HHDT,MHDT
P5.4 - Install Footbridge	Hauling	0.00	20.0	HHDT
P5.4 - Install Footbridge	Onsite truck	1.00	20.0	HHDT
P6 - Plunge pool	—	—	—	—
P6 - Plunge pool	Worker	12.0	14.1	LDA,LDT1,LDT2
P6 - Plunge pool	Vendor	8.00	8.98	HHDT,MHDT
P6 - Plunge pool	Hauling	4.00	40.3	HHDT
P6 - Plunge pool	Onsite truck	0.00	0.00	HHDT
P6.1 - Flow bypass	—	—	—	—
P6.1 - Flow bypass	Worker	0.00	14.1	LDA,LDT1,LDT2
P6.1 - Flow bypass	Vendor	0.00	8.98	HHDT,MHDT

P6.1 - Flow bypass	Hauling	0.00	20.0	HHDT
P6.1 - Flow bypass	Onsite truck	0.00	0.00	HHDT
P6.2 - Excavation	—	—	—	—
P6.2 - Excavation	Worker	0.00	14.1	LDA,LDT1,LDT2
P6.2 - Excavation	Vendor	0.00	8.98	HHDT,MHDT
P6.2 - Excavation	Hauling	0.00	20.0	HHDT
P6.2 - Excavation	Onsite truck	1.00	50.0	HHDT
P6.3 - Slope protection	—	—	—	—
P6.3 - Slope protection	Worker	0.00	14.1	LDA,LDT1,LDT2
P6.3 - Slope protection	Vendor	0.00	8.98	HHDT,MHDT
P6.3 - Slope protection	Hauling	0.00	20.0	HHDT
P6.3 - Slope protection	Onsite truck	1.00	10.0	HHDT
P7 - Remaining Work Scope	—	—	—	—
P7 - Remaining Work Scope	Worker	20.0	14.1	LDA,LDT1,LDT2
P7 - Remaining Work Scope	Vendor	6.00	8.98	HHDT,MHDT
P7 - Remaining Work Scope	Hauling	4.00	40.3	HHDT
P7 - Remaining Work Scope	Onsite truck	0.00	0.00	HHDT
P7.1 - Cofferdam removal	—	—	—	—
P7.1 - Cofferdam removal	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.1 - Cofferdam removal	Vendor	0.00	8.98	HHDT,MHDT
P7.1 - Cofferdam removal	Hauling	0.00	20.0	HHDT
P7.1 - Cofferdam removal	Onsite truck	0.00	0.00	HHDT
P7.2 - Lighting	—	—	—	—
P7.2 - Lighting	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.2 - Lighting	Vendor	0.00	8.98	HHDT,MHDT
P7.2 - Lighting	Hauling	0.00	20.0	HHDT
P7.2 - Lighting	Onsite truck	1.00	12.5	HHDT

P7.3 - Log boom	—	—	—	—
P7.3 - Log boom	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.3 - Log boom	Vendor	0.00	8.98	HHDT,MHDT
P7.3 - Log boom	Hauling	0.00	20.0	HHDT
P7.3 - Log boom	Onsite truck	0.00	0.00	HHDT
P7.4 - Restoration	—	—	—	—
P7.4 - Restoration	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.4 - Restoration	Vendor	0.00	8.98	HHDT,MHDT
P7.4 - Restoration	Hauling	0.00	20.0	HHDT
P7.4 - Restoration	Onsite truck	1.00	72.5	HHDT
P7.5 - Demobilization	—	—	—	—
P7.5 - Demobilization	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.5 - Demobilization	Vendor	0.00	8.98	HHDT,MHDT
P7.5 - Demobilization	Hauling	0.00	20.0	HHDT
P7.5 - Demobilization	Onsite truck	1.00	72.5	HHDT
P8 - Spillway abandonment	—	—	—	—
P8 - Spillway abandonment	Worker	12.0	14.1	LDA,LDT1,LDT2
P8 - Spillway abandonment	Vendor	4.00	8.98	HHDT,MHDT
P8 - Spillway abandonment	Hauling	4.00	40.3	HHDT
P8 - Spillway abandonment	Onsite truck	0.00	0.00	HHDT
P8.1 - Remove Cofferdam	—	—	—	—
P8.1 - Remove Cofferdam	Worker	0.00	14.1	LDA,LDT1,LDT2
P8.1 - Remove Cofferdam	Vendor	0.00	8.98	HHDT,MHDT
P8.1 - Remove Cofferdam	Hauling	0.00	20.0	HHDT
P8.1 - Remove Cofferdam	Onsite truck	1.00	10.0	HHDT
P8.2 - Canal Side Channel	—	—	—	—
P8.2 - Canal Side Channel	Worker	0.00	14.1	LDA,LDT1,LDT2

P8.2 - Canal Side Channel	Vendor	0.00	8.98	HHDT,MHDT
P8.2 - Canal Side Channel	Hauling	0.00	20.0	HHDT
P8.2 - Canal Side Channel	Onsite truck	1.00	10.0	HHDT
P8.3 - Cover Bathtub	—	—	—	—
P8.3 - Cover Bathtub	Worker	0.00	14.1	LDA,LDT1,LDT2
P8.3 - Cover Bathtub	Vendor	0.00	8.98	HHDT,MHDT
P8.3 - Cover Bathtub	Hauling	0.00	20.0	HHDT
P8.3 - Cover Bathtub	Onsite truck	1.00	10.0	HHDT
P9 - Batch Plant Equip	—	—	—	—
P9 - Batch Plant Equip	Worker	0.00	14.1	LDA,LDT1,LDT2
P9 - Batch Plant Equip	Vendor	0.00	8.98	HHDT,MHDT
P9 - Batch Plant Equip	Hauling	0.00	20.0	HHDT
P9 - Batch Plant Equip	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
P4.2 - Crest form and pour concrete	0.00	0.00	0.00	0.00	—

P4.1 - Crest excavation/ subgrade	0.00	0.00	0.00	0.00	—
P4 - Crest structure	0.00	0.00	0.00	0.00	—
P3.6 - Trench Cutoff Concrete 3	0.00	0.00	0.00	0.00	—
P3.5 - Trench Cutoff Concrete 2	0.00	0.00	0.00	0.00	—
P3.4 - Trench Cutoff Concrete 1	0.00	0.00	0.00	0.00	—
P3.3 - Place piles, sheets, and concrete	0.00	0.00	0.00	0.00	—
P3.1 - Mass concrete	0.00	0.00	0.00	0.00	—
P3 - Cofferdam	200	0.00	0.00	0.00	—
P2.3 - Drains, Cleanouts, and Backfill	0.00	0.00	0.00	0.00	—
P2.2 - Spillway form and pour concrete	0.00	0.00	0.00	0.00	—
P2.1 - Spillway excavation/subgrade	0.00	0.00	0.00	0.00	—
P2 - Spillway chute and flip bucket	20,000	0.00	2.00	0.00	—
P1.4 - Access road construction	16,000	0.00	3.00	0.00	—
P3.2 - Excavate cofferdam	0.00	0.00	0.00	0.00	—
P1.3 - Laydown area development	0.00	0.00	0.00	0.00	—
P1.2 - Mobilization	0.00	0.00	0.00	0.00	—
P1.1 - Tree removal	0.00	0.00	0.00	0.00	—
P1 - Mobilization and access development	5,000	0.00	10.0	0.00	—
P5 - Dam notch and tie-in chute	100	0.00	0.00	1,500	—
P5.1 - Demolition	0.00	0.00	0.00	0.00	—
P5.2 - Excavation, Subgrade	0.00	0.00	0.00	0.00	—
P5.3 - Form and Pour Concrete	0.00	0.00	0.00	0.00	—

P5.4 - Install Footbridge	0.00	0.00	0.00	0.00	—
P6 - Plunge pool	9,000	0.00	0.20	0.00	—
P6.1 - Flow bypass	0.00	0.00	0.00	0.00	—
P6.2 - Excavation	0.00	0.00	0.00	0.00	—
P6.3 - Slope protection	0.00	0.00	0.00	0.00	—
P7 - Remaining Work Scope	0.00	0.00	0.00	0.00	—
P7.1 - Cofferdam removal	0.00	0.00	0.00	0.00	—
P7.2 - Lighting	0.00	0.00	0.00	0.00	—
P7.3 - Log boom	0.00	0.00	0.00	0.00	—
P7.4 - Restoration	0.00	0.00	0.00	0.00	—
P7.5 - Demobilization	0.00	0.00	0.00	0.00	—
P8 - Spillway abandonment	0.00	0.00	0.00	0.00	—
P8.1 - Remove Cofferdam	0.00	0.00	0.00	0.00	—
P8.2 - Canal Side Channel	0.00	0.00	0.00	0.00	—
P8.3 - Cover Bathtub	0.00	0.00	0.00	0.00	—
P9 - Batch Plant Equip	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	5,750	204	0.03	< 0.005
2025	19,750	204	0.03	< 0.005
2026	2,500	204	0.03	< 0.005

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5.6.2. Construction Earthmoving Control Strategies

5.8. Construction Electricity Consumption and Emissions Factors

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Tiger Creek Const v2
Construction Start Date	7/8/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	38.2
Location	38.477123683429426, -120.45229072675
County	Amador
City	Unincorporated
Air District	Amador County APCD
Air Basin	Mountain Counties
TAZ	3002
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	1.00	1.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.39	59.2	57.3	0.17	2.14	46.1	48.3	1.98	6.89	8.87	—	19,010	19,010	0.67	1.10	12.4	19,205
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.69	62.5	56.8	0.17	2.41	47.2	49.0	2.22	6.89	9.11	—	19,083	19,083	0.68	0.70	0.26	19,277
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.07	15.6	14.4	0.04	0.59	12.8	13.4	0.54	1.74	2.28	—	4,751	4,751	0.14	0.24	1.78	4,829
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.38	2.84	2.62	0.01	0.11	2.34	2.45	0.10	0.32	0.42	—	787	787	0.02	0.04	0.29	799

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	7.39	59.2	57.3	0.17	2.14	46.1	48.3	1.98	6.89	8.87	—	19,010	19,010	0.67	1.10	12.4	19,205
2025	5.01	38.0	39.5	0.11	1.46	40.4	41.8	1.34	5.28	6.62	—	12,338	12,338	0.42	0.58	8.34	12,497
2026	0.92	9.10	8.56	0.03	0.33	6.95	7.27	0.30	0.74	1.04	—	2,994	2,994	0.09	0.15	1.95	3,044
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	7.69	62.5	56.8	0.17	2.41	47.2	49.0	2.22	6.89	9.11	—	19,083	19,083	0.68	0.70	0.26	19,277
2025	2.34	24.3	18.4	0.06	0.85	27.8	28.7	0.79	2.97	3.76	—	6,725	6,725	0.15	0.60	0.22	6,909
2026	1.35	14.1	14.0	0.04	0.42	35.6	35.9	0.39	3.66	3.95	—	4,739	4,739	0.12	0.33	0.12	4,840
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	2.07	15.6	14.4	0.04	0.59	12.8	13.4	0.54	1.74	2.28	—	4,751	4,751	0.14	0.24	1.38	4,829
2025	1.48	12.6	11.6	0.03	0.46	12.3	12.7	0.42	1.49	1.91	—	3,788	3,788	0.11	0.24	1.78	3,863
2026	0.12	1.31	1.29	< 0.005	0.04	2.76	2.80	0.03	0.29	0.32	—	477	477	0.01	0.04	0.24	489
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.38	2.84	2.62	0.01	0.11	2.34	2.45	0.10	0.32	0.42	—	787	787	0.02	0.04	0.23	799
2025	0.27	2.30	2.13	0.01	0.08	2.24	2.32	0.08	0.27	0.35	—	627	627	0.02	0.04	0.29	640
2026	0.02	0.24	0.24	< 0.005	0.01	0.50	0.51	0.01	0.05	0.06	—	79.0	79.0	< 0.005	0.01	0.04	81.0

3. Construction Emissions Details

3.1. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.61	5.40	5.16	0.01	0.21	—	0.21	0.19	—	0.19	—	1,188	1,188	0.05	0.01	—	1,192
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	0.13	86.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	5.40	5.16	0.01	0.21	—	0.21	0.19	—	0.19	—	1,188	1,188	0.05	0.01	—	1,192
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	1.88	1.79	< 0.005	0.07	—	0.07	0.07	—	0.07	—	413	413	0.02	< 0.005	—	415
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.06	< 0.005	< 0.005	< 0.005	2.31	2.31	< 0.005	0.23	0.23	—	28.6	28.6	< 0.005	< 0.005	0.02	30.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.34	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	68.4	68.4	< 0.005	< 0.005	—	68.7
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.42	0.42	< 0.005	0.04	0.04	—	4.74	4.74	< 0.005	< 0.005	< 0.005	4.96
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.22	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	95.6	95.6	< 0.005	0.02	0.15	100
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.23	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	95.6	95.6	< 0.005	0.02	< 0.005	100
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.08	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.3	33.3	< 0.005	0.01	0.02	34.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.51	5.51	< 0.005	< 0.005	< 0.005	5.77

3.3. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.15	23.1	23.5	0.07	0.89	—	0.89	0.82	—	0.82	—	7,770	7,770	0.32	0.06	—	7,797
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.46	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	244	244	< 0.005	0.04	0.40	256
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.15	2.19	0.01	0.08	—	0.08	0.08	—	0.08	—	724	724	0.03	0.01	—	726
Dust From Material Movement	—	—	—	—	—	0.24	0.24	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.05	< 0.005	< 0.005	< 0.005	1.86	1.86	< 0.005	0.19	0.19	—	22.7	22.7	< 0.005	< 0.005	0.02	23.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.39	0.40	< 0.005	0.02	—	0.02	0.01	—	0.01	—	120	120	< 0.005	< 0.005	—	120
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.34	0.34	< 0.005	0.03	0.03	—	3.76	3.76	< 0.005	< 0.005	< 0.005	3.94
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.5. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.28	4.35	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	441	441	0.02	0.02	1.90	448
Vendor	0.01	0.46	0.08	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	246	246	< 0.005	0.04	0.61	257
Hauling	0.02	1.26	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	1.07	689

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.35	3.17	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	392	392	0.03	0.03	0.05	402
Vendor	0.01	0.49	0.09	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	245	245	< 0.005	0.04	0.02	257
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.14	1.48	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	178	178	0.01	0.01	0.36	181
Vendor	< 0.005	0.21	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	108	108	< 0.005	0.02	0.12	113
Hauling	0.01	0.59	0.04	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	290	290	< 0.005	0.05	0.20	304
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.03	0.27	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	29.5	29.5	< 0.005	< 0.005	0.06	29.9
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	17.9	17.9	< 0.005	< 0.005	0.02	18.8
Hauling	< 0.005	0.11	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.0	48.0	< 0.005	0.01	0.03	50.3

3.7. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	2.71	2.81	0.01	0.11	—	0.11	0.10	—	0.10	—	479	479	0.02	< 0.005	—	480
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	0.07	43.8

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.31	1.31	< 0.005	< 0.005	—	1.32
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.12
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.22	0.22	< 0.005	< 0.005	—	0.22
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.05	3.04	0.37	0.01	0.02	0.30	0.32	0.02	0.08	0.10	—	1,349	1,349	< 0.005	0.21	2.13	1,415
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	< 0.005	3.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.9. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	2.71	2.81	0.01	0.11	—	0.11	0.10	—	0.10	—	479	479	0.02	< 0.005	—	480
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	0.07	43.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.31	1.31	< 0.005	< 0.005	—	1.32

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.12
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.22	0.22	< 0.005	< 0.005	—	0.22
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.05	3.04	0.37	0.01	0.02	0.30	0.32	0.02	0.08	0.10	—	1,349	1,349	< 0.005	0.21	2.13	1,415
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	< 0.005	3.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.11. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	2.71	2.81	0.01	0.11	—	0.11	0.10	—	0.10	—	479	479	0.02	< 0.005	—	480
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.10	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	< 0.005	43.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.31	1.31	< 0.005	< 0.005	—	1.32
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.12
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.22	0.22	< 0.005	< 0.005	—	0.22

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.02	0.02	< 0.005	< 0.005	< 0.005	0.02
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.05	3.19	0.39	0.01	0.02	0.30	0.32	0.02	0.08	0.10	—	1,348	1,348	< 0.005	0.21	0.06	1,412
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.70	3.70	< 0.005	< 0.005	< 0.005	3.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64

3.13. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	3.82	3.76	0.01	0.16	—	0.16	0.14	—	0.14	—	946	946	0.04	0.01	—	949
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	0.13	86.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	3.82	3.76	0.01	0.16	—	0.16	0.14	—	0.14	—	946	946	0.04	0.01	—	949
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.8	51.8	< 0.005	< 0.005	—	52.0
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.36	0.36	< 0.005	0.04	0.04	—	4.50	4.50	< 0.005	< 0.005	< 0.005	4.72
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.58	8.58	< 0.005	< 0.005	—	8.61

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.75	0.75	< 0.005	< 0.005	< 0.005	0.78
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.15. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	4.12	3.78	0.01	0.17	—	0.17	0.16	—	0.16	—	946	946	0.04	0.01	—	949
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.18	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	83.4	83.4	< 0.005	0.01	< 0.005	87.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.34	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	77.7	77.7	< 0.005	< 0.005	—	78.0
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.55	0.55	< 0.005	0.05	0.05	—	6.86	6.86	< 0.005	< 0.005	< 0.005	7.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.9	12.9	< 0.005	< 0.005	—	12.9
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.10	0.10	< 0.005	0.01	0.01	—	1.14	1.14	< 0.005	< 0.005	< 0.005	1.19
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.17. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.11	1.02	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	120	120	0.01	0.01	0.02	122
Vendor	< 0.005	0.26	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	124	124	< 0.005	0.02	0.01	130
Hauling	0.02	1.42	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	667	667	< 0.005	0.10	0.03	698

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.03	13.6
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.4	13.4	< 0.005	< 0.005	0.01	14.1
Hauling	< 0.005	0.15	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	72.0	72.0	< 0.005	0.01	0.05	75.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.20	2.20	< 0.005	< 0.005	< 0.005	2.26
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.23	2.23	< 0.005	< 0.005	< 0.005	2.33
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.01	12.5

3.19. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	1.30	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	132	132	0.01	< 0.005	0.57	134
Vendor	0.01	0.23	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	123	123	< 0.005	0.02	0.31	128
Hauling	0.02	1.26	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	1.07	689
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.10	0.95	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	118	118	0.01	0.01	0.01	120
Vendor	< 0.005	0.24	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	123	123	< 0.005	0.02	0.01	128
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.26	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.7	30.7	< 0.005	< 0.005	0.06	31.2
Vendor	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.1	31.1	< 0.005	< 0.005	0.03	32.6
Hauling	< 0.005	0.34	0.02	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	167	167	< 0.005	0.03	0.12	175

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.08	5.08	< 0.005	< 0.005	0.01	5.16
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.15	5.15	< 0.005	< 0.005	0.01	5.40
Hauling	< 0.005	0.06	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.6	27.6	< 0.005	< 0.005	0.02	28.9

3.21. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.23. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.63	5.70	5.19	0.01	0.22	—	0.22	0.20	—	0.20	—	1,188	1,188	0.05	0.01	—	1,192
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.44	0.02	< 0.005	< 0.005	16.6	16.6	< 0.005	1.66	1.66	—	206	206	< 0.005	0.03	0.01	216
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.62	0.56	< 0.005	0.02	—	0.02	0.02	—	0.02	—	128	128	0.01	< 0.005	—	129
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.05	< 0.005	< 0.005	< 0.005	1.80	1.80	< 0.005	0.18	0.18	—	22.3	22.3	< 0.005	< 0.005	0.02	23.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.2	21.2	< 0.005	< 0.005	—	21.3
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.33	0.33	< 0.005	0.03	0.03	—	3.69	3.69	< 0.005	< 0.005	< 0.005	3.87
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.23	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	91.7	91.7	< 0.005	0.01	< 0.005	96.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.91	9.91	< 0.005	< 0.005	0.01	10.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.72

3.25. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	5.40	5.16	0.01	0.21	—	0.21	0.19	—	0.19	—	1,188	1,188	0.05	0.01	—	1,192

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.39	0.02	< 0.005	< 0.005	16.6	16.6	< 0.005	1.66	1.66	—	203	203	< 0.005	0.03	0.33	213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	5.40	5.16	0.01	0.21	—	0.21	0.19	—	0.19	—	1,188	1,188	0.05	0.01	—	1,192
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.41	0.02	< 0.005	< 0.005	16.6	16.6	< 0.005	1.66	1.66	—	203	203	< 0.005	0.03	0.01	213
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.46	1.39	< 0.005	0.06	—	0.06	0.05	—	0.05	—	321	321	0.01	< 0.005	—	322
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.11	0.01	< 0.005	< 0.005	4.49	4.49	< 0.005	0.45	0.45	—	54.9	54.9	< 0.005	0.01	0.04	57.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.27	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	53.1	53.1	< 0.005	< 0.005	—	53.3
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.82	0.82	< 0.005	0.08	0.08	—	9.10	9.10	< 0.005	< 0.005	0.01	9.53

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.20	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	90.4	90.4	< 0.005	0.01	0.14	94.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.21	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	90.4	90.4	< 0.005	0.01	< 0.005	94.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.4	24.4	< 0.005	< 0.005	0.02	25.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.04	4.04	< 0.005	< 0.005	< 0.005	4.24

3.27. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.37	26.8	25.6	0.07	1.05	—	1.05	0.96	—	0.96	—	7,914	7,914	0.32	0.06	—	7,941
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.49	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	247	247	< 0.005	0.04	0.40	259
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.37	26.8	25.6	0.07	1.05	—	1.05	0.96	—	0.96	—	7,914	7,914	0.32	0.06	—	7,941
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.52	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	247	247	< 0.005	0.04	0.01	259
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	4.04	3.85	0.01	0.16	—	0.16	0.15	—	0.15	—	1,192	1,192	0.05	0.01	—	1,197
Dust From Material Movement	—	—	—	—	—	0.39	0.39	—	0.20	0.20	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.08	< 0.005	< 0.005	< 0.005	3.00	3.01	< 0.005	0.30	0.30	—	37.3	37.3	< 0.005	0.01	0.03	39.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.74	0.70	< 0.005	0.03	—	0.03	0.03	—	0.03	—	197	197	0.01	< 0.005	—	198
Dust From Material Movement	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—

Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.55	0.55	< 0.005	0.05	0.05	—	6.17	6.17	< 0.005	< 0.005	< 0.005	6.46
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.29. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.34	0.29	4.64	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	449	449	0.02	0.02	2.01	456
Vendor	0.01	0.49	0.09	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	249	249	< 0.005	0.04	0.62	261
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	667	667	< 0.005	0.10	1.08	699
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.38	3.41	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	399	399	0.03	0.03	0.05	408
Vendor	0.01	0.52	0.09	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	249	249	< 0.005	0.04	0.02	260
Hauling	0.02	1.42	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	667	667	< 0.005	0.10	0.03	698
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.09	0.98	0.00	0.00	0.11	0.11	0.00	0.02	0.02	—	112	112	0.01	0.01	0.24	115
Vendor	< 0.005	0.14	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	67.8	67.8	< 0.005	0.01	0.07	70.9
Hauling	< 0.005	0.38	0.02	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	182	182	< 0.005	0.03	0.13	190
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.18	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.5	18.5	< 0.005	< 0.005	0.04	19.0
Vendor	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.01	11.7
Hauling	< 0.005	0.07	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.1	30.1	< 0.005	< 0.005	0.02	31.5

3.31. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Architectu Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Architectu ral Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.28	4.35	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	441	441	0.02	0.02	1.90	448
Vendor	0.01	0.46	0.08	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	246	246	< 0.005	0.04	0.61	257
Hauling	0.02	1.26	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	1.07	689
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.35	3.17	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	392	392	0.03	0.03	0.05	402
Vendor	0.01	0.49	0.09	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	245	245	< 0.005	0.04	0.02	257
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.10	1.09	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	132	132	0.01	0.01	0.27	134
Vendor	< 0.005	0.16	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	80.1	80.1	< 0.005	0.01	0.09	83.9
Hauling	0.01	0.43	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	214	214	< 0.005	0.03	0.15	225

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.20	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	21.8	21.8	< 0.005	< 0.005	0.04	22.1
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.01	13.9
Hauling	< 0.005	0.08	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.5	35.5	< 0.005	0.01	0.03	37.2

3.33. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.44	26.5	24.4	0.07	1.05	—	1.05	0.97	—	0.97	—	7,699	7,699	0.31	0.06	—	7,726
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.49	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	247	247	< 0.005	0.04	0.40	259
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.44	26.5	24.4	0.07	1.05	—	1.05	0.97	—	0.97	—	7,699	7,699	0.31	0.06	—	7,726
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	0.01	0.52	0.03	< 0.005	< 0.005	19.9	19.9	< 0.005	1.99	2.00	—	247	247	< 0.005	0.04	0.01	259
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.71	5.44	5.01	0.01	0.22	—	0.22	0.20	—	0.20	—	1,582	1,582	0.06	0.01	—	1,587
Dust From Material Movement	—	—	—	—	—	0.53	0.53	—	0.27	0.27	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.11	0.01	< 0.005	< 0.005	4.10	4.10	< 0.005	0.41	0.41	—	50.8	50.8	< 0.005	0.01	0.04	53.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.99	0.91	< 0.005	0.04	—	0.04	0.04	—	0.04	—	262	262	0.01	< 0.005	—	263
Dust From Material Movement	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.75	0.75	< 0.005	0.07	0.07	—	8.42	8.42	< 0.005	< 0.005	0.01	8.81
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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

Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.35. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	3.82	3.76	0.01	0.16	—	0.16	0.14	—	0.14	—	946	946	0.04	0.01	—	949
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.7	20.7	< 0.005	< 0.005	—	20.8

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.15	0.15	< 0.005	0.01	0.01	—	1.80	1.80	< 0.005	< 0.005	< 0.005	1.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.43	3.43	< 0.005	< 0.005	—	3.44
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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

3.37. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.30	12.3	11.6	0.02	0.57	—	0.57	0.52	—	0.52	—	1,868	1,868	0.08	0.02	—	1,875
Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.39	0.02	< 0.005	< 0.005	15.8	15.8	< 0.005	1.58	1.58	—	196	196	< 0.005	0.03	0.32	206
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.20	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.7	30.7	< 0.005	< 0.005	—	30.8
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.26	0.26	< 0.005	0.03	0.03	—	3.22	3.22	< 0.005	< 0.005	< 0.005	3.38
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.08	5.08	< 0.005	< 0.005	—	5.10

Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.56
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.39. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.05	4.02	0.25	0.02	0.03	0.45	0.48	0.03	0.12	0.15	—	2,000	2,000	< 0.005	0.31	3.25	2,096

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.17	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	82.2	82.2	< 0.005	0.01	0.06	86.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.6	13.6	< 0.005	< 0.005	0.01	14.2

3.41. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.34	18.4	25.1	0.02	1.26	—	1.26	1.15	—	1.15	—	2,333	2,333	0.09	0.02	—	2,341
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.01	0.43	0.02	< 0.005	< 0.005	17.4	17.5	< 0.005	1.74	1.75	—	217	217	< 0.005	0.03	0.35	227
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.53	1.82	2.48	< 0.005	0.12	—	0.12	0.11	—	0.11	—	230	230	0.01	< 0.005	—	231
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.04	< 0.005	< 0.005	< 0.005	1.72	1.72	< 0.005	0.17	0.17	—	21.4	21.4	< 0.005	< 0.005	0.02	22.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.33	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	38.1	38.1	< 0.005	< 0.005	—	38.2
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	3.54	3.54	< 0.005	< 0.005	< 0.005	3.71
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.08	6.70	0.41	0.04	0.05	0.75	0.80	0.05	0.20	0.26	—	3,333	3,333	< 0.005	0.52	5.41	3,494
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	0.01	0.69	0.04	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	329	329	< 0.005	0.05	0.23	344
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.13	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	54.4	54.4	< 0.005	0.01	0.04	57.0

3.43. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	2.32	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	224	224	0.01	0.01	1.00	228
Vendor	0.01	0.61	0.11	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	311	311	< 0.005	0.05	0.77	326
Hauling	0.02	2.01	0.12	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,000	1,000	< 0.005	0.16	1.62	1,048
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.19	1.70	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	199	199	0.01	0.01	0.03	204
Vendor	0.01	0.65	0.11	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	311	311	< 0.005	0.05	0.02	325
Hauling	0.02	2.13	0.13	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	1,000	1,000	< 0.005	0.16	0.04	1,046
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.56	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	64.1	64.1	< 0.005	< 0.005	0.14	65.7
Vendor	< 0.005	0.20	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	97.2	97.2	< 0.005	0.01	0.10	102
Hauling	0.01	0.66	0.04	< 0.005	0.01	0.07	0.07	0.01	0.02	0.02	—	312	312	< 0.005	0.05	0.22	327
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.10	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.02	10.9
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.1	16.1	< 0.005	< 0.005	0.02	16.8
Hauling	< 0.005	0.12	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	51.7	51.7	< 0.005	0.01	0.04	54.1

3.45. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.10	0.95	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	118	118	0.01	0.01	0.01	120
Vendor	< 0.005	0.12	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	61.4	61.4	< 0.005	0.01	< 0.005	64.2
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.02	0.16	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.3	19.3	< 0.005	< 0.005	0.04	19.6
Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	0.01	10.3
Hauling	< 0.005	0.21	0.01	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	105	105	< 0.005	0.02	0.07	110
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	0.01	3.25
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.70
Hauling	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.4	17.4	< 0.005	< 0.005	0.01	18.2

3.47. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.10	0.89	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	116	116	0.01	0.01	0.01	117
Vendor	< 0.005	0.11	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	60.5	60.5	< 0.005	0.01	< 0.005	63.2
Hauling	0.02	1.27	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	646	646	< 0.005	0.10	0.03	676
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.31	5.31	< 0.005	< 0.005	0.01	5.39
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.70	2.70	< 0.005	< 0.005	< 0.005	2.82
Hauling	< 0.005	0.06	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.8	28.8	< 0.005	< 0.005	0.02	30.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.89
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.47
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.77	4.77	< 0.005	< 0.005	< 0.005	5.00

3.49. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	3.11	3.65	0.01	0.10	—	0.10	0.09	—	0.09	—	854	854	0.03	0.01	—	857

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.10	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	< 0.005	43.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.4	23.4	< 0.005	< 0.005	—	23.5
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	1.15	1.15	< 0.005	< 0.005	< 0.005	1.20
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.87	3.87	< 0.005	< 0.005	—	3.89
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.51. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	3.11	3.65	0.01	0.10	—	0.10	0.09	—	0.09	—	854	854	0.03	0.01	—	857
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.10	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	< 0.005	43.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.4	30.4	< 0.005	< 0.005	—	30.5

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.12	0.12	< 0.005	0.01	0.01	—	1.49	1.49	< 0.005	< 0.005	< 0.005	1.56
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.03	5.03	< 0.005	< 0.005	—	5.05
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.25	0.25	< 0.005	< 0.005	< 0.005	0.26
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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

3.53. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	5.17	4.99	0.01	0.20	—	0.20	0.18	—	0.18	—	1,157	1,157	0.05	0.01	—	1,161
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.47	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	105	105	< 0.005	< 0.005	—	105
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.60	0.60	< 0.005	0.06	0.06	—	7.43	7.43	< 0.005	< 0.005	0.01	7.79
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.3	17.3	< 0.005	< 0.005	—	17.4

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	1.23	1.23	< 0.005	< 0.005	< 0.005	1.29
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.12	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	51.1	51.1	< 0.005	0.01	< 0.005	53.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.62	4.62	< 0.005	< 0.005	< 0.005	4.84
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.76	0.76	< 0.005	< 0.005	< 0.005	0.80

3.55. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	5.17	4.99	0.01	0.20	—	0.20	0.18	—	0.18	—	1,157	1,157	0.05	0.01	—	1,161
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	82.2	82.2	< 0.005	0.01	< 0.005	86.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.44	5.44	< 0.005	< 0.005	—	5.45
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.40
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.90	0.90	< 0.005	< 0.005	—	0.90
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.07
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.57. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	4.96	4.95	0.01	0.19	—	0.19	0.17	—	0.17	—	1,157	1,157	0.05	0.01	—	1,161

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.17	0.01	< 0.005	< 0.005	6.65	6.65	< 0.005	0.66	0.67	—	80.9	80.9	< 0.005	0.01	< 0.005	84.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.22	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.6	51.6	< 0.005	< 0.005	—	51.8
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.30	0.30	< 0.005	0.03	0.03	—	3.61	3.61	< 0.005	< 0.005	< 0.005	3.78
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.55	8.55	< 0.005	< 0.005	—	8.58
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.63
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.59. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	1.30	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	132	132	0.01	< 0.005	0.57	134
Vendor	0.01	0.46	0.08	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	246	246	< 0.005	0.04	0.61	257
Hauling	0.02	1.26	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	1.07	689
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.10	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.1
Vendor	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.2	24.2	< 0.005	< 0.005	0.03	25.3
Hauling	< 0.005	0.13	0.01	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	64.8	64.8	< 0.005	0.01	0.05	67.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.01
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.01	4.01	< 0.005	< 0.005	< 0.005	4.20
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	0.01	11.2

3.61. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	2.38	1.57	< 0.005	0.10	—	0.10	0.09	—	0.09	—	312	312	0.01	< 0.005	—	313
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.12	5.12	< 0.005	< 0.005	—	5.14
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.85	0.85	< 0.005	< 0.005	—	0.85
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.63. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.20	17.2	16.0	0.04	0.69	—	0.69	0.63	—	0.63	—	4,664	4,664	0.19	0.04	—	4,680

Dust From Material Movement	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.39	0.02	< 0.005	< 0.005	16.6	16.6	< 0.005	1.66	1.66	—	203	203	< 0.005	0.03	0.33	213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	1.18	1.09	< 0.005	0.05	—	0.05	0.04	—	0.04	—	319	319	0.01	< 0.005	—	321
Dust From Material Movement	—	—	—	—	—	0.18	0.18	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.03	< 0.005	< 0.005	< 0.005	1.14	1.14	< 0.005	0.11	0.11	—	13.9	13.9	< 0.005	< 0.005	0.01	14.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.21	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.9	52.9	< 0.005	< 0.005	—	53.1
Dust From Material Movement	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.21	0.21	< 0.005	0.02	0.02	—	2.31	2.31	< 0.005	< 0.005	< 0.005	2.42
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.65. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.19	1.76	< 0.005	0.04	—	0.04	0.04	—	0.04	—	290	290	0.01	< 0.005	—	291
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.8	41.8	< 0.005	0.01	0.07	43.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.97	3.97	< 0.005	< 0.005	—	3.99
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.60
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.66	0.66	< 0.005	< 0.005	—	0.66
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.10
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.67. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.17	1.59	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	196	196	0.01	0.01	0.02	201
Vendor	0.01	0.37	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	184	184	< 0.005	0.03	0.01	193
Hauling	0.02	1.34	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	657	657	< 0.005	0.10	0.03	688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.30	1.30	< 0.005	< 0.005	< 0.005	1.36
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.63	4.63	< 0.005	< 0.005	< 0.005	4.85
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.24
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.80

3.69. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.16	1.49	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	193	193	0.01	0.01	0.02	196

Vendor	0.01	0.34	0.06	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	181	181	< 0.005	0.03	0.01	189
Hauling	0.02	1.27	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	646	646	< 0.005	0.10	0.03	676
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.20	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.6	25.6	< 0.005	< 0.005	0.05	26.0
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.4	23.4	< 0.005	< 0.005	0.02	24.5
Hauling	< 0.005	0.16	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	83.5	83.5	< 0.005	0.01	0.06	87.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.24	4.24	< 0.005	< 0.005	0.01	4.31
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.88	3.88	< 0.005	< 0.005	< 0.005	4.06
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5

3.71. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	3.09	3.08	0.01	0.13	—	0.13	0.12	—	0.12	—	857	857	0.03	0.01	—	860
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.4	16.4	< 0.005	< 0.005	—	16.5
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.72	2.72	< 0.005	< 0.005	—	2.73
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.73. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.51	0.78	< 0.005	0.02	—	0.02	0.02	—	0.02	—	114	114	< 0.005	< 0.005	—	115
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.11	0.01	< 0.005	< 0.005	4.15	4.16	< 0.005	0.42	0.42	—	51.0	51.0	< 0.005	0.01	< 0.005	53.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.27	6.27	< 0.005	< 0.005	—	6.29
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.23	0.23	< 0.005	0.02	0.02	—	2.80	2.80	< 0.005	< 0.005	< 0.005	2.93
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.04	1.04	< 0.005	< 0.005	—	1.04
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.48
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.75. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.83	1.02	< 0.005	0.03	—	0.03	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.00	1.00	< 0.005	< 0.005	—	1.00
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.17	0.17	< 0.005	< 0.005	—	0.17

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.77. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.82	1.02	< 0.005	0.02	—	0.02	0.02	—	0.02	—	142	142	0.01	< 0.005	—	142
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.99	2.99	< 0.005	< 0.005	—	3.00
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.50	0.50	< 0.005	< 0.005	—	0.50
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.79. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	2.07	3.29	< 0.005	0.07	—	0.07	0.06	—	0.06	—	509	509	0.02	< 0.005	—	511

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.01	0.56	0.03	< 0.005	< 0.005	24.1	24.1	< 0.005	2.41	2.41	—	290	290	< 0.005	0.04	0.01	303
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.3	22.3	< 0.005	< 0.005	—	22.4
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	1.06	1.06	< 0.005	0.11	0.11	—	12.7	12.7	< 0.005	< 0.005	0.01	13.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.69	3.69	< 0.005	< 0.005	—	3.71
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	2.10	2.10	< 0.005	< 0.005	< 0.005	2.20
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.81. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	2.07	3.29	< 0.005	0.07	—	0.07	0.06	—	0.06	—	509	509	0.02	< 0.005	—	511
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.01	0.56	0.03	< 0.005	< 0.005	24.1	24.1	< 0.005	2.41	2.41	—	290	290	< 0.005	0.04	0.01	303
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.7	16.7	< 0.005	< 0.005	—	16.8

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.79	0.79	< 0.005	0.08	0.08	—	9.52	9.52	< 0.005	< 0.005	0.01	9.97
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.77	2.77	< 0.005	< 0.005	—	2.78
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	1.58	1.58	< 0.005	< 0.005	< 0.005	1.65
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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

3.83. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	1.23	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	130	130	0.01	< 0.005	0.53	132
Vendor	< 0.005	0.22	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	121	121	< 0.005	0.02	0.27	127
Hauling	0.02	1.20	0.08	0.01	0.01	0.15	0.16	0.01	0.04	0.05	—	646	646	< 0.005	0.10	1.02	677
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.83	7.83	< 0.005	< 0.005	0.02	7.95
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.95	7.95	< 0.005	< 0.005	0.01	8.31
Hauling	< 0.005	0.08	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	42.5	42.5	< 0.005	0.01	0.03	44.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.30	1.30	< 0.005	< 0.005	< 0.005	1.32
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.32	1.32	< 0.005	< 0.005	< 0.005	1.38
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.03	7.03	< 0.005	< 0.005	< 0.005	7.36

3.85. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	3.09	3.08	0.01	0.13	—	0.13	0.12	—	0.12	—	857	857	0.03	0.01	—	860

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.1	41.1	< 0.005	0.01	0.06	43.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.89	3.89	< 0.005	< 0.005	—	3.90
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.87. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	4.34	4.12	0.01	0.18	—	0.18	0.17	—	0.17	—	1,155	1,155	0.05	0.01	—	1,159
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.1	41.1	< 0.005	0.01	0.06	43.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.14	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.0	38.0	< 0.005	< 0.005	—	38.1
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	1.35	1.35	< 0.005	< 0.005	< 0.005	1.42
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.29	6.29	< 0.005	< 0.005	—	6.31
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.22	0.22	< 0.005	< 0.005	< 0.005	0.23
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.89. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	4.34	4.12	0.01	0.18	—	0.18	0.17	—	0.17	—	1,155	1,155	0.05	0.01	—	1,159
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.09	0.01	< 0.005	< 0.005	3.32	3.32	< 0.005	0.33	0.33	—	41.1	41.1	< 0.005	0.01	0.06	43.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.14	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.0	38.0	< 0.005	< 0.005	—	38.1
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	1.35	1.35	< 0.005	< 0.005	< 0.005	1.42
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.29	6.29	< 0.005	< 0.005	—	6.31
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.22	0.22	< 0.005	< 0.005	< 0.005	0.23
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.91. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	2.93	1.30	< 0.005	0.26	—	0.26	0.24	—	0.24	—	149	149	0.01	< 0.005	—	149
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.21	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	10.7	10.7	< 0.005	< 0.005	—	10.7
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.77	1.77	< 0.005	< 0.005	—	1.77

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.93. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	4.41	1.81	< 0.005	0.32	—	0.32	0.30	—	0.30	—	151	151	0.01	< 0.005	—	151
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	4.41	1.81	< 0.005	0.32	—	0.32	0.30	—	0.30	—	151	151	0.01	< 0.005	—	151
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	1.89	0.77	< 0.005	0.14	—	0.14	0.13	—	0.13	—	64.7	64.7	< 0.005	< 0.005	—	64.9
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.35	0.14	< 0.005	0.03	—	0.03	0.02	—	0.02	—	10.7	10.7	< 0.005	< 0.005	—	10.7

Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
P4.2 - Crest form and pour concrete	Grading	5/30/2025	10/24/2025	6.00	127	—
P4.1 - Crest excavation/ subgrade	Grading	4/21/2025	5/29/2025	6.00	34.0	—
P4 - Crest structure	Grading	4/21/2025	10/24/2025	6.00	161	—
P3.6 - Trench Cutoff Concrete 3	Grading	4/14/2025	4/14/2025	1.00	1.00	—
P3.5 - Trench Cutoff Concrete 2	Grading	4/7/2025	4/7/2025	1.00	1.00	—
P3.4 - Trench Cutoff Concrete 1	Grading	3/31/2025	3/31/2025	1.00	1.00	—
P3.3 - Place piles, sheets, and concrete	Grading	3/27/2025	4/18/2025	6.00	20.0	—
P3.1 - Mass concrete	Grading	11/16/2024	12/20/2024	6.00	30.0	—
P3 - Cofferdam	Grading	11/16/2024	4/18/2025	6.00	132	—
P2.3 - Drains, Cleanouts, and Backfill	Grading	4/28/2025	5/19/2025	6.00	19.0	—
P2.2 - Spillway form and pour concrete	Grading	11/16/2024	4/25/2025	6.00	138	—
P2.1 - Spillway excavation/subgrade	Grading	9/7/2024	11/9/2024	6.00	55.0	—
P2 - Spillway chute and flip bucket	Grading	9/7/2024	5/19/2025	6.00	218	—
P1.4 - Access road construction	Grading	8/22/2024	11/16/2024	6.00	75.0	—
P3.2 - Excavate cofferdam	Grading	3/18/2025	3/26/2025	6.00	8.00	—
P1.3 - Laydown area development	Grading	8/22/2024	8/28/2024	6.00	6.00	—
P1.2 - Mobilization	Grading	8/5/2024	8/21/2024	6.00	15.0	—

P1.1 - Tree removal	Grading	7/8/2024	8/17/2024	6.00	36.0	—
P1 - Mobilization and access development	Grading	7/8/2024	11/16/2024	6.00	114	—
P5 - Dam notch and tie-in chute	Grading	10/25/2025	1/19/2026	6.00	74.0	—
P5.1 - Demolition	Grading	10/25/2025	11/5/2025	6.00	10.0	—
P5.2 - Excavation, Subgrade	Grading	11/6/2025	11/20/2025	6.00	13.0	—
P5.3 - Form and Pour Concrete	Grading	11/21/2025	12/29/2025	6.00	33.0	—
P5.4 - Install Footbridge	Grading	12/30/2025	1/19/2026	6.00	18.0	—
P6 - Plunge pool	Grading	8/5/2025	9/15/2025	6.00	36.0	—
P6.1 - Flow bypass	Grading	8/5/2025	8/11/2025	6.00	6.00	—
P6.2 - Excavation	Grading	8/12/2025	9/9/2025	6.00	25.0	—
P6.3 - Slope protection	Grading	9/10/2025	9/15/2025	6.00	5.00	—
P7 - Remaining Work Scope	Grading	12/29/2025	2/24/2026	6.00	50.0	—
P7.1 - Cofferdam removal	Grading	1/9/2026	1/16/2026	6.00	7.00	—
P7.2 - Lighting	Grading	1/19/2026	2/10/2026	6.00	20.0	—
P7.3 - Log boom	Grading	12/29/2025	1/9/2026	6.00	11.0	—
P7.4 - Restoration	Grading	1/16/2026	2/3/2026	6.00	16.0	—
P7.5 - Demobilization	Grading	2/11/2026	2/24/2026	6.00	12.0	—
P8 - Spillway abandonment	Grading	4/9/2026	5/6/2026	6.00	24.0	—
P8.1 - Remove Cofferdam	Grading	4/9/2026	4/20/2026	6.00	10.0	—
P8.2 - Canal Side Channel	Grading	4/9/2026	4/22/2026	6.00	12.0	—
P8.3 - Cover Bathtub	Grading	4/23/2026	5/6/2026	6.00	12.0	—
P9 - Batch Plant Equip	Grading	11/1/2024	12/31/2025	3.00	183	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
P4.2 - Crest form and pour concrete	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P4.2 - Crest form and pour concrete	Air Compressors	Diesel	Average	1.00	5.00	37.0	0.48
P4.2 - Crest form and pour concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P4.2 - Crest form and pour concrete	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P4.2 - Crest form and pour concrete	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P4.1 - Crest excavation/ subgrade	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
P4.1 - Crest excavation/ subgrade	Off-Highway Trucks	Diesel	Average	4.00	9.00	376	0.38
P4.1 - Crest excavation/ subgrade	Excavators	Diesel	Average	1.00	9.00	36.0	0.38
P4.1 - Crest excavation/ subgrade	Bore/Drill Rigs	Diesel	Average	1.00	5.00	83.0	0.50
P3.6 - Trench Cutoff Concrete 3	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.6 - Trench Cutoff Concrete 3	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P3.6 - Trench Cutoff Concrete 3	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P3.6 - Trench Cutoff Concrete 3	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
P3.5 - Trench Cutoff Concrete 2	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.5 - Trench Cutoff Concrete 2	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74

P3.5 - Trench Cutoff Concrete 2	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P3.5 - Trench Cutoff Concrete 2	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
P3.4 - Trench Cutoff Concrete 1	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.4 - Trench Cutoff Concrete 1	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P3.4 - Trench Cutoff Concrete 1	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P3.4 - Trench Cutoff Concrete 1	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
P3.3 - Place piles, sheets, and concrete	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.3 - Place piles, sheets, and concrete	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P3.3 - Place piles, sheets, and concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P3.1 - Mass concrete	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.1 - Mass concrete	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P3.1 - Mass concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P2.2 - Spillway form and pour concrete	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P2.2 - Spillway form and pour concrete	Air Compressors	Diesel	Average	1.00	5.00	37.0	0.48
P2.2 - Spillway form and pour concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P2.2 - Spillway form and pour concrete	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P2.2 - Spillway form and pour concrete	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P2.1 - Spillway excavation/subgrade	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

P2.1 - Spillway excavation/subgrade	Off-Highway Trucks	Diesel	Average	4.00	9.00	376	0.38
P2.1 - Spillway excavation/subgrade	Excavators	Diesel	Average	1.00	9.00	36.0	0.38
P2.1 - Spillway excavation/subgrade	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P2.1 - Spillway excavation/subgrade	Bore/Drill Rigs	Diesel	Average	1.00	5.00	83.0	0.50
P1.4 - Access road construction	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
P1.4 - Access road construction	Off-Highway Trucks	Diesel	Average	4.00	9.00	376	0.38
P1.4 - Access road construction	Excavators	Diesel	Average	1.00	9.00	36.0	0.38
P1.4 - Access road construction	Rollers	Diesel	Average	1.00	10.0	36.0	0.38
P3.2 - Excavate cofferdam	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P3.2 - Excavate cofferdam	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P3.2 - Excavate cofferdam	Cranes	Diesel	Average	1.00	6.00	367	0.29
P1.3 - Laydown area development	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
P1.3 - Laydown area development	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P1.3 - Laydown area development	Rubber Tired Loaders	Diesel	Average	1.00	6.00	150	0.36
P1.1 - Tree removal	Rubber Tired Loaders	Diesel	Average	1.00	8.00	96.0	0.40
P1.1 - Tree removal	Skid Steer Loaders	Diesel	Average	1.00	8.00	82.0	0.20
P1.1 - Tree removal	Skid Steer Loaders	Diesel	Average	1.00	6.00	71.0	0.37
P1.1 - Tree removal	Rubber Tired Loaders	Diesel	Average	1.00	6.00	150	0.36

P1.1 - Tree removal	Other Construction Equipment	Diesel	Average	2.00	8.00	82.0	0.42
P1.1 - Tree removal	Other Construction Equipment	Diesel	Average	1.00	6.00	82.0	0.42
P1.1 - Tree removal	Other Material Handling Equipment	Gasoline	Average	3.00	8.00	1.86	0.69
P5.1 - Demolition	Excavators	Diesel	Average	2.00	10.0	36.0	0.38
P5.1 - Demolition	Off-Highway Trucks	Diesel	Average	1.00	3.00	376	0.38
P5.2 - Excavation, Subgrade	Excavators	Diesel	Average	2.00	10.0	36.0	0.38
P5.2 - Excavation, Subgrade	Off-Highway Trucks	Diesel	Average	1.00	3.00	376	0.38
P5.3 - Form and Pour Concrete	Pumps	Diesel	Average	1.00	2.00	11.0	0.74
P5.3 - Form and Pour Concrete	Air Compressors	Diesel	Average	1.00	5.00	37.0	0.48
P5.3 - Form and Pour Concrete	Cranes	Diesel	Average	1.00	6.00	367	0.29
P5.3 - Form and Pour Concrete	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P5.3 - Form and Pour Concrete	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P5.4 - Install Footbridge	Pumps	Diesel	Average	1.00	2.00	11.0	0.74
P5.4 - Install Footbridge	Air Compressors	Diesel	Average	1.00	5.00	37.0	0.48
P5.4 - Install Footbridge	Cranes	Diesel	Average	1.00	6.00	367	0.29
P5.4 - Install Footbridge	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P5.4 - Install Footbridge	Skid Steer Loaders	Diesel	Average	1.00	5.00	71.0	0.37
P6.1 - Flow bypass	Generator Sets	Diesel	Average	1.00	24.0	14.0	0.74
P6.2 - Excavation	Generator Sets	Diesel	Average	1.00	10.0	14.0	0.74
P6.2 - Excavation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
P6.2 - Excavation	Off-Highway Trucks	Diesel	Average	2.00	9.00	376	0.38

P6.2 - Excavation	Excavators	Diesel	Average	1.00	9.00	36.0	0.38
P6.3 - Slope protection	Bore/Drill Rigs	Diesel	Average	1.00	5.00	83.0	0.50
P6.3 - Slope protection	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P7.1 - Cofferdam removal	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P7.1 - Cofferdam removal	Cranes	Diesel	Average	1.00	6.00	367	0.29
P7.2 - Lighting	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P7.3 - Log boom	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
P7.4 - Restoration	Skid Steer Loaders	Diesel	Average	1.00	10.0	71.0	0.37
P7.4 - Restoration	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P7.4 - Restoration	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P7.5 - Demobilization	Skid Steer Loaders	Diesel	Average	1.00	10.0	71.0	0.37
P7.5 - Demobilization	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
P7.5 - Demobilization	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P8.1 - Remove Cofferdam	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P8.1 - Remove Cofferdam	Cranes	Diesel	Average	1.00	6.00	367	0.29
P8.2 - Canal Side Channel	Cranes	Diesel	Average	1.00	8.00	367	0.29
P8.2 - Canal Side Channel	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P8.2 - Canal Side Channel	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P8.3 - Cover Bathtub	Cranes	Diesel	Average	1.00	8.00	367	0.29
P8.3 - Cover Bathtub	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
P8.3 - Cover Bathtub	Pumps	Diesel	Average	1.00	5.00	11.0	0.74
P9 - Batch Plant Equip	Rubber Tired Loaders	Diesel	Average	1.00	6.00	60.0	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
P1 - Mobilization and access development	—	—	—	—
P1 - Mobilization and access development	Worker	20.0	14.1	LDA,LDT1,LDT2
P1 - Mobilization and access development	Vendor	10.0	8.98	HHDT,MHDT
P1 - Mobilization and access development	Hauling	6.00	40.3	HHDT
P1 - Mobilization and access development	Onsite truck	0.00	0.00	HHDT
P1.1 - Tree removal	—	—	—	—
P1.1 - Tree removal	Worker	0.00	14.1	LDA,LDT1,LDT2
P1.1 - Tree removal	Vendor	0.00	8.98	HHDT,MHDT
P1.1 - Tree removal	Hauling	20.0	40.3	HHDT
P1.1 - Tree removal	Onsite truck	1.00	52.5	HHDT
P1.2 - Mobilization	—	—	—	—
P1.2 - Mobilization	Worker	0.00	14.1	LDA,LDT1,LDT2
P1.2 - Mobilization	Vendor	0.00	8.98	HHDT,MHDT
P1.2 - Mobilization	Hauling	12.0	40.3	HHDT
P1.2 - Mobilization	Onsite truck	0.00	0.00	HHDT
P1.3 - Laydown area development	—	—	—	—
P1.3 - Laydown area development	Worker	0.00	14.1	LDA,LDT1,LDT2
P1.3 - Laydown area development	Vendor	0.00	8.98	HHDT,MHDT
P1.3 - Laydown area development	Hauling	0.00	20.0	HHDT
P1.3 - Laydown area development	Onsite truck	1.00	47.5	HHDT

P1.4 - Access road construction	—	—	—	—
P1.4 - Access road construction	Worker	0.00	14.1	LDA,LDT1,LDT2
P1.4 - Access road construction	Vendor	0.00	8.98	HHDT,MHDT
P1.4 - Access road construction	Hauling	0.00	20.0	HHDT
P1.4 - Access road construction	Onsite truck	1.00	60.0	HHDT
P2 - Spillway chute and flip bucket	—	—	—	—
P2 - Spillway chute and flip bucket	Worker	40.0	14.1	LDA,LDT1,LDT2
P2 - Spillway chute and flip bucket	Vendor	8.00	8.98	HHDT,MHDT
P2 - Spillway chute and flip bucket	Hauling	4.00	40.3	HHDT
P2 - Spillway chute and flip bucket	Onsite truck	0.00	0.00	HHDT
P4.2 - Crest form and pour concrete	—	—	—	—
P4.2 - Crest form and pour concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P4.2 - Crest form and pour concrete	Vendor	0.00	8.98	HHDT,MHDT
P4.2 - Crest form and pour concrete	Hauling	2.83	8.00	HHDT
P4.2 - Crest form and pour concrete	Onsite truck	1.00	20.0	HHDT
P4.1 - Crest excavation/ subgrade	—	—	—	—
P4.1 - Crest excavation/ subgrade	Worker	0.00	14.1	LDA,LDT1,LDT2
P4.1 - Crest excavation/ subgrade	Vendor	0.00	8.98	HHDT,MHDT
P4.1 - Crest excavation/ subgrade	Hauling	0.00	20.0	HHDT
P4.1 - Crest excavation/ subgrade	Onsite truck	1.00	60.0	HHDT
P4 - Crest structure	—	—	—	—
P4 - Crest structure	Worker	40.0	14.1	LDA,LDT1,LDT2
P4 - Crest structure	Vendor	8.00	8.98	HHDT,MHDT
P4 - Crest structure	Hauling	4.00	40.3	HHDT
P4 - Crest structure	Onsite truck	0.00	0.00	HHDT
P3.6 - Trench Cutoff Concrete 3	—	—	—	—
P3.6 - Trench Cutoff Concrete 3	Worker	0.00	14.1	LDA,LDT1,LDT2

P3.6 - Trench Cutoff Concrete 3	Vendor	0.00	8.98	HHDT,MHDT
P3.6 - Trench Cutoff Concrete 3	Hauling	40.0	8.00	HHDT
P3.6 - Trench Cutoff Concrete 3	Onsite truck	1.00	10.0	HHDT
P3.5 - Trench Cutoff Concrete 2	—	—	—	—
P3.5 - Trench Cutoff Concrete 2	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.5 - Trench Cutoff Concrete 2	Vendor	0.00	8.98	HHDT,MHDT
P3.5 - Trench Cutoff Concrete 2	Hauling	40.0	8.00	HHDT
P3.5 - Trench Cutoff Concrete 2	Onsite truck	1.00	10.0	HHDT
P3.4 - Trench Cutoff Concrete 1	—	—	—	—
P3.4 - Trench Cutoff Concrete 1	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.4 - Trench Cutoff Concrete 1	Vendor	0.00	8.98	HHDT,MHDT
P3.4 - Trench Cutoff Concrete 1	Hauling	40.0	8.00	HHDT
P3.4 - Trench Cutoff Concrete 1	Onsite truck	1.00	10.0	HHDT
P3.3 - Place piles, sheets, and concrete	—	—	—	—
P3.3 - Place piles, sheets, and concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.3 - Place piles, sheets, and concrete	Vendor	0.00	8.98	HHDT,MHDT
P3.3 - Place piles, sheets, and concrete	Hauling	0.00	20.0	HHDT
P3.3 - Place piles, sheets, and concrete	Onsite truck	1.00	20.0	HHDT
P3.1 - Mass concrete	—	—	—	—
P3.1 - Mass concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.1 - Mass concrete	Vendor	0.00	8.98	HHDT,MHDT
P3.1 - Mass concrete	Hauling	0.00	20.0	HHDT
P3.1 - Mass concrete	Onsite truck	1.00	20.0	HHDT
P3 - Cofferdam	—	—	—	—
P3 - Cofferdam	Worker	12.0	14.1	LDA,LDT1,LDT2
P3 - Cofferdam	Vendor	4.00	8.98	HHDT,MHDT
P3 - Cofferdam	Hauling	4.00	40.3	HHDT

P3 - Cofferdam	Onsite truck	0.00	0.00	HHDT
P2.3 - Drains, Cleanouts, and Backfill	—	—	—	—
P2.3 - Drains, Cleanouts, and Backfill	Worker	0.00	14.1	LDA,LDT1,LDT2
P2.3 - Drains, Cleanouts, and Backfill	Vendor	0.00	8.98	HHDT,MHDT
P2.3 - Drains, Cleanouts, and Backfill	Hauling	0.00	20.0	HHDT
P2.3 - Drains, Cleanouts, and Backfill	Onsite truck	0.00	0.00	HHDT
P2.2 - Spillway form and pour concrete	—	—	—	—
P2.2 - Spillway form and pour concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P2.2 - Spillway form and pour concrete	Vendor	0.00	8.98	HHDT,MHDT
P2.2 - Spillway form and pour concrete	Hauling	2.68	8.00	HHDT
P2.2 - Spillway form and pour concrete	Onsite truck	1.00	50.0	HHDT
P2.1 - Spillway excavation/subgrade	—	—	—	—
P2.1 - Spillway excavation/subgrade	Worker	0.00	14.1	LDA,LDT1,LDT2
P2.1 - Spillway excavation/subgrade	Vendor	0.00	8.98	HHDT,MHDT
P2.1 - Spillway excavation/subgrade	Hauling	0.00	20.0	HHDT
P2.1 - Spillway excavation/subgrade	Onsite truck	1.00	60.0	HHDT
P3.2 - Excavate cofferdam	—	—	—	—
P3.2 - Excavate cofferdam	Worker	0.00	14.1	LDA,LDT1,LDT2
P3.2 - Excavate cofferdam	Vendor	0.00	8.98	HHDT,MHDT
P3.2 - Excavate cofferdam	Hauling	0.00	20.0	HHDT
P3.2 - Excavate cofferdam	Onsite truck	1.00	20.0	HHDT
P5 - Dam notch and tie-in chute	—	—	—	—
P5 - Dam notch and tie-in chute	Worker	12.0	14.1	LDA,LDT1,LDT2
P5 - Dam notch and tie-in chute	Vendor	2.00	8.98	HHDT,MHDT
P5 - Dam notch and tie-in chute	Hauling	4.00	40.3	HHDT
P5 - Dam notch and tie-in chute	Onsite truck	0.00	0.00	HHDT
P5.1 - Demolition	—	—	—	—

P5.1 - Demolition	Worker	0.00	14.1	LDA,LDT1,LDT2
P5.1 - Demolition	Vendor	0.00	8.98	HHDT,MHDT
P5.1 - Demolition	Hauling	0.00	20.0	HHDT
P5.1 - Demolition	Onsite truck	1.00	10.0	HHDT
P5.2 - Excavation, Subgrade	—	—	—	—
P5.2 - Excavation, Subgrade	Worker	0.00	14.1	LDA,LDT1,LDT2
P5.2 - Excavation, Subgrade	Vendor	0.00	8.98	HHDT,MHDT
P5.2 - Excavation, Subgrade	Hauling	0.00	20.0	HHDT
P5.2 - Excavation, Subgrade	Onsite truck	1.00	10.0	HHDT
P5.3 - Form and Pour Concrete	—	—	—	—
P5.3 - Form and Pour Concrete	Worker	0.00	14.1	LDA,LDT1,LDT2
P5.3 - Form and Pour Concrete	Vendor	0.00	8.98	HHDT,MHDT
P5.3 - Form and Pour Concrete	Hauling	1.51	8.00	HHDT
P5.3 - Form and Pour Concrete	Onsite truck	1.00	20.0	HHDT
P5.4 - Install Footbridge	—	—	—	—
P5.4 - Install Footbridge	Worker	0.00	14.1	LDA,LDT1,LDT2
P5.4 - Install Footbridge	Vendor	0.00	8.98	HHDT,MHDT
P5.4 - Install Footbridge	Hauling	0.00	20.0	HHDT
P5.4 - Install Footbridge	Onsite truck	1.00	20.0	HHDT
P6 - Plunge pool	—	—	—	—
P6 - Plunge pool	Worker	12.0	14.1	LDA,LDT1,LDT2
P6 - Plunge pool	Vendor	8.00	8.98	HHDT,MHDT
P6 - Plunge pool	Hauling	4.00	40.3	HHDT
P6 - Plunge pool	Onsite truck	0.00	0.00	HHDT
P6.1 - Flow bypass	—	—	—	—
P6.1 - Flow bypass	Worker	0.00	14.1	LDA,LDT1,LDT2
P6.1 - Flow bypass	Vendor	0.00	8.98	HHDT,MHDT

P6.1 - Flow bypass	Hauling	0.00	20.0	HHDT
P6.1 - Flow bypass	Onsite truck	0.00	0.00	HHDT
P6.2 - Excavation	—	—	—	—
P6.2 - Excavation	Worker	0.00	14.1	LDA,LDT1,LDT2
P6.2 - Excavation	Vendor	0.00	8.98	HHDT,MHDT
P6.2 - Excavation	Hauling	0.00	20.0	HHDT
P6.2 - Excavation	Onsite truck	1.00	50.0	HHDT
P6.3 - Slope protection	—	—	—	—
P6.3 - Slope protection	Worker	0.00	14.1	LDA,LDT1,LDT2
P6.3 - Slope protection	Vendor	0.00	8.98	HHDT,MHDT
P6.3 - Slope protection	Hauling	0.00	20.0	HHDT
P6.3 - Slope protection	Onsite truck	1.00	10.0	HHDT
P7 - Remaining Work Scope	—	—	—	—
P7 - Remaining Work Scope	Worker	20.0	14.1	LDA,LDT1,LDT2
P7 - Remaining Work Scope	Vendor	6.00	8.98	HHDT,MHDT
P7 - Remaining Work Scope	Hauling	4.00	40.3	HHDT
P7 - Remaining Work Scope	Onsite truck	0.00	0.00	HHDT
P7.1 - Cofferdam removal	—	—	—	—
P7.1 - Cofferdam removal	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.1 - Cofferdam removal	Vendor	0.00	8.98	HHDT,MHDT
P7.1 - Cofferdam removal	Hauling	0.00	20.0	HHDT
P7.1 - Cofferdam removal	Onsite truck	0.00	0.00	HHDT
P7.2 - Lighting	—	—	—	—
P7.2 - Lighting	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.2 - Lighting	Vendor	0.00	8.98	HHDT,MHDT
P7.2 - Lighting	Hauling	0.00	20.0	HHDT
P7.2 - Lighting	Onsite truck	1.00	12.5	HHDT

P7.3 - Log boom	—	—	—	—
P7.3 - Log boom	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.3 - Log boom	Vendor	0.00	8.98	HHDT,MHDT
P7.3 - Log boom	Hauling	0.00	20.0	HHDT
P7.3 - Log boom	Onsite truck	0.00	0.00	HHDT
P7.4 - Restoration	—	—	—	—
P7.4 - Restoration	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.4 - Restoration	Vendor	0.00	8.98	HHDT,MHDT
P7.4 - Restoration	Hauling	0.00	20.0	HHDT
P7.4 - Restoration	Onsite truck	1.00	72.5	HHDT
P7.5 - Demobilization	—	—	—	—
P7.5 - Demobilization	Worker	0.00	14.1	LDA,LDT1,LDT2
P7.5 - Demobilization	Vendor	0.00	8.98	HHDT,MHDT
P7.5 - Demobilization	Hauling	0.00	20.0	HHDT
P7.5 - Demobilization	Onsite truck	1.00	72.5	HHDT
P8 - Spillway abandonment	—	—	—	—
P8 - Spillway abandonment	Worker	12.0	14.1	LDA,LDT1,LDT2
P8 - Spillway abandonment	Vendor	4.00	8.98	HHDT,MHDT
P8 - Spillway abandonment	Hauling	4.00	40.3	HHDT
P8 - Spillway abandonment	Onsite truck	0.00	0.00	HHDT
P8.1 - Remove Cofferdam	—	—	—	—
P8.1 - Remove Cofferdam	Worker	0.00	14.1	LDA,LDT1,LDT2
P8.1 - Remove Cofferdam	Vendor	0.00	8.98	HHDT,MHDT
P8.1 - Remove Cofferdam	Hauling	0.00	20.0	HHDT
P8.1 - Remove Cofferdam	Onsite truck	1.00	10.0	HHDT
P8.2 - Canal Side Channel	—	—	—	—
P8.2 - Canal Side Channel	Worker	0.00	14.1	LDA,LDT1,LDT2

P8.2 - Canal Side Channel	Vendor	0.00	8.98	HHDT,MHDT
P8.2 - Canal Side Channel	Hauling	0.00	20.0	HHDT
P8.2 - Canal Side Channel	Onsite truck	1.00	10.0	HHDT
P8.3 - Cover Bathtub	—	—	—	—
P8.3 - Cover Bathtub	Worker	0.00	14.1	LDA,LDT1,LDT2
P8.3 - Cover Bathtub	Vendor	0.00	8.98	HHDT,MHDT
P8.3 - Cover Bathtub	Hauling	0.00	20.0	HHDT
P8.3 - Cover Bathtub	Onsite truck	1.00	10.0	HHDT
P9 - Batch Plant Equip	—	—	—	—
P9 - Batch Plant Equip	Worker	0.00	14.1	LDA,LDT1,LDT2
P9 - Batch Plant Equip	Vendor	0.00	8.98	HHDT,MHDT
P9 - Batch Plant Equip	Hauling	0.00	20.0	HHDT
P9 - Batch Plant Equip	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
P4.2 - Crest form and pour concrete	0.00	0.00	0.00	0.00	—

P4.1 - Crest excavation/ subgrade	0.00	0.00	0.00	0.00	—
P4 - Crest structure	0.00	0.00	0.00	0.00	—
P3.6 - Trench Cutoff Concrete 3	0.00	0.00	0.00	0.00	—
P3.5 - Trench Cutoff Concrete 2	0.00	0.00	0.00	0.00	—
P3.4 - Trench Cutoff Concrete 1	0.00	0.00	0.00	0.00	—
P3.3 - Place piles, sheets, and concrete	0.00	0.00	0.00	0.00	—
P3.1 - Mass concrete	0.00	0.00	0.00	0.00	—
P3 - Cofferdam	200	0.00	0.00	0.00	—
P2.3 - Drains, Cleanouts, and Backfill	0.00	0.00	0.00	0.00	—
P2.2 - Spillway form and pour concrete	0.00	0.00	0.00	0.00	—
P2.1 - Spillway excavation/subgrade	0.00	0.00	0.00	0.00	—
P2 - Spillway chute and flip bucket	20,000	0.00	2.00	0.00	—
P1.4 - Access road construction	16,000	0.00	3.00	0.00	—
P3.2 - Excavate cofferdam	0.00	0.00	0.00	0.00	—
P1.3 - Laydown area development	0.00	0.00	0.00	0.00	—
P1.2 - Mobilization	0.00	0.00	0.00	0.00	—
P1.1 - Tree removal	0.00	0.00	0.00	0.00	—
P1 - Mobilization and access development	5,000	0.00	10.0	0.00	—
P5 - Dam notch and tie-in chute	100	0.00	0.00	1,500	—
P5.1 - Demolition	0.00	0.00	0.00	0.00	—
P5.2 - Excavation, Subgrade	0.00	0.00	0.00	0.00	—
P5.3 - Form and Pour Concrete	0.00	0.00	0.00	0.00	—

P5.4 - Install Footbridge	0.00	0.00	0.00	0.00	—
P6 - Plunge pool	9,000	0.00	0.20	0.00	—
P6.1 - Flow bypass	0.00	0.00	0.00	0.00	—
P6.2 - Excavation	0.00	0.00	0.00	0.00	—
P6.3 - Slope protection	0.00	0.00	0.00	0.00	—
P7 - Remaining Work Scope	0.00	0.00	0.00	0.00	—
P7.1 - Cofferdam removal	0.00	0.00	0.00	0.00	—
P7.2 - Lighting	0.00	0.00	0.00	0.00	—
P7.3 - Log boom	0.00	0.00	0.00	0.00	—
P7.4 - Restoration	0.00	0.00	0.00	0.00	—
P7.5 - Demobilization	0.00	0.00	0.00	0.00	—
P8 - Spillway abandonment	0.00	0.00	0.00	0.00	—
P8.1 - Remove Cofferdam	0.00	0.00	0.00	0.00	—
P8.2 - Canal Side Channel	0.00	0.00	0.00	0.00	—
P8.3 - Cover Bathtub	0.00	0.00	0.00	0.00	—
P9 - Batch Plant Equip	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	5,750	204	0.03	< 0.005
2025	19,750	204	0.03	< 0.005
2026	2,500	204	0.03	< 0.005

Tiger Creek Const SMAQMD

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Tiger Creek Const v2
Construction Start Date	7/8/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	36.4
Location	Sacramento, CA, USA
County	Sacramento
City	Sacramento
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	502
EDFZ	13
Electric Utility	Sacramento Municipal Utility District
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	1.00	1.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	7.43	2.72	0.05	0.07	1.04	1.11	0.07	0.28	0.35	—	4,099	4,099	0.38	0.66	8.60	4,313
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04	2.95	1.01	0.02	0.03	0.38	0.41	0.03	0.10	0.13	—	1,510	1,510	0.14	0.24	0.08	1,586
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	1.21	0.42	0.01	0.01	0.16	0.17	0.01	0.04	0.05	—	632	632	0.06	0.10	0.57	665
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	0.22	0.08	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	105	105	0.01	0.02	0.09	110

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	0.12	7.43	2.72	0.05	0.07	1.04	1.11	0.07	0.28	0.35	—	4,099	4,099	0.38	0.66	8.60	4,313
2025	0.02	1.48	0.56	0.01	0.02	0.22	0.23	0.02	0.06	0.07	—	845	845	0.08	0.13	1.79	888
2026	0.01	0.70	0.27	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	413	413	0.04	0.07	0.84	435
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.04	2.95	1.01	0.02	0.03	0.38	0.41	0.03	0.10	0.13	—	1,510	1,510	0.14	0.24	0.08	1,586
2025	0.02	1.59	0.56	0.01	0.02	0.22	0.23	0.02	0.06	0.07	—	845	845	0.08	0.13	0.05	887
2026	0.02	1.51	0.55	0.01	0.02	0.22	0.23	0.02	0.06	0.07	—	827	827	0.07	0.13	0.04	868
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.02	1.21	0.42	0.01	0.01	0.16	0.17	0.01	0.04	0.05	—	632	632	0.06	0.10	0.57	665
2025	0.01	1.00	0.36	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	543	543	0.05	0.09	0.50	571
2026	< 0.005	0.18	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	99.0	99.0	0.01	0.02	0.09	104
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	< 0.005	0.22	0.08	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	105	105	0.01	0.02	0.09	110
2025	< 0.005	0.18	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	90.0	90.0	0.01	0.01	0.08	94.5
2026	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.01	17.2

3. Construction Emissions Details

3.1. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.3. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.5. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.74	0.28	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	422	422	0.04	0.07	0.89	444
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.79	0.28	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	422	422	0.04	0.07	0.02	443
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.34	0.12	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	186	186	0.02	0.03	0.17	196
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.8	30.8	< 0.005	< 0.005	0.03	32.4

3.7. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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
Vendor	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
Hauling	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

3.9. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.11. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.13. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.15. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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

Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.17. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.84	0.29	0.01	0.01	0.11	0.12	0.01	0.03	0.04	—	431	431	0.04	0.07	0.02	453
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.09	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.6	46.6	< 0.005	0.01	0.04	49.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.72	7.72	< 0.005	< 0.005	0.01	8.11

3.19. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.74	0.28	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	422	422	0.04	0.07	0.89	444
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.79	0.28	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	422	422	0.04	0.07	0.02	443
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.20	0.07	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	107	107	0.01	0.02	0.10	113

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.04	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	17.7	17.7	< 0.005	< 0.005	0.02	18.6

3.21. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.23. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.25. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.27. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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

Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.29. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.78	0.29	0.01	0.01	0.11	0.12	0.01	0.03	0.04	—	431	431	0.04	0.07	0.90	454
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	0.01	0.84	0.29	0.01	0.01	0.11	0.12	0.01	0.03	0.04	—	431	431	0.04	0.07	0.02	453
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.23	0.08	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	118	118	0.01	0.02	0.11	124
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.5	19.5	< 0.005	< 0.005	0.02	20.5

3.31. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.74	0.28	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	422	422	0.04	0.07	0.89	444
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.79	0.28	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	422	422	0.04	0.07	0.02	443
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.25	0.09	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	138	138	0.01	0.02	0.13	145
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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
Vendor	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
Hauling	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.8	22.8	< 0.005	< 0.005	0.02	24.0

3.33. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.35. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.37. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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
Vendor	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
Hauling	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

3.39. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.04	2.35	0.86	0.02	0.02	0.33	0.35	0.02	0.09	0.11	—	1,294	1,294	0.12	0.21	2.71	1,362

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.10	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.2	53.2	< 0.005	0.01	0.05	55.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.81	8.81	< 0.005	< 0.005	0.01	9.26

3.41. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.06	3.91	1.43	0.03	0.04	0.54	0.58	0.04	0.15	0.18	—	2,157	2,157	0.20	0.35	4.52	2,270
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.41	0.14	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	213	213	0.02	0.03	0.19	224
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.2	35.2	< 0.005	0.01	0.03	37.0

3.43. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.02	1.17	0.43	0.01	0.01	0.16	0.17	0.01	0.04	0.06	—	647	647	0.06	0.10	1.36	681
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.02	1.26	0.43	0.01	0.01	0.16	0.17	0.01	0.04	0.06	—	647	647	0.06	0.10	0.04	680
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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
Vendor	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
Hauling	0.01	0.39	0.13	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	202	202	0.02	0.03	0.18	212
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.5	33.5	< 0.005	0.01	0.03	35.2

3.45. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.79	0.28	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	422	422	0.04	0.07	0.02	443
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	67.4	67.4	0.01	0.01	0.06	70.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.01	11.7

3.47. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.75	0.27	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	413	413	0.04	0.07	0.02	434
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	0.02	19.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.05	3.05	< 0.005	< 0.005	< 0.005	3.21

3.49. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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

Vendor	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
Hauling	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

3.51. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.53. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.55. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.57. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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
Vendor	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
Hauling	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

3.59. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.74	0.28	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	422	422	0.04	0.07	0.89	444

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.08	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.7	41.7	< 0.005	0.01	0.04	43.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.90	6.90	< 0.005	< 0.005	0.01	7.25

3.61. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.63. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.65. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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

Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.67. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.79	0.28	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	422	422	0.04	0.07	0.02	443
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.98	2.98	< 0.005	< 0.005	< 0.005	3.13
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.49	0.49	< 0.005	< 0.005	< 0.005	0.52

3.69. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.75	0.27	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	413	413	0.04	0.07	0.02	434
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.10	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.4	53.4	< 0.005	0.01	0.05	56.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.84	8.84	< 0.005	< 0.005	0.01	9.29

3.71. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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

Vendor	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
Hauling	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

3.73. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.75. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.77. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.79. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	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
Vendor	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
Hauling	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

3.81. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.83. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	0.01	0.70	0.27	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	413	413	0.04	0.07	0.84	435
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.2	27.2	< 0.005	< 0.005	0.02	28.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.50	4.50	< 0.005	< 0.005	< 0.005	4.73

3.85. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.87. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.89. Grading (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.91. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

3.93. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
P4.2 - Crest form and pour concrete	Grading	5/30/2025	10/24/2025	6.00	127	—
P4.1 - Crest excavation/ subgrade	Grading	4/21/2025	5/29/2025	6.00	34.0	—
P4 - Crest structure	Grading	4/21/2025	10/24/2025	6.00	161	—
P3.6 - Trench Cutoff Concrete 3	Grading	4/14/2025	4/14/2025	1.00	1.00	—
P3.5 - Trench Cutoff Concrete 2	Grading	4/7/2025	4/7/2025	1.00	1.00	—
P3.4 - Trench Cutoff Concrete 1	Grading	3/31/2025	3/31/2025	1.00	1.00	—
P3.3 - Place piles, sheets, and concrete	Grading	3/27/2025	4/18/2025	6.00	20.0	—
P3.1 - Mass concrete	Grading	11/16/2024	12/20/2024	6.00	30.0	—
P3 - Cofferdam	Grading	11/16/2024	4/18/2025	6.00	132	—
P2.3 - Drains, Cleanouts, and Backfill	Grading	4/28/2025	5/19/2025	6.00	19.0	—
P2.2 - Spillway form and pour concrete	Grading	11/16/2024	4/25/2025	6.00	138	—
P2.1 - Spillway excavation/subgrade	Grading	9/7/2024	11/9/2024	6.00	55.0	—

P2 - Spillway chute and flip bucket	Grading	9/7/2024	5/19/2025	6.00	218	—
P1.4 - Access road construction	Grading	8/22/2024	11/16/2024	6.00	75.0	—
P3.2 - Excavate cofferdam	Grading	3/18/2025	3/26/2025	6.00	8.00	—
P1.3 - Laydown area development	Grading	8/22/2024	8/28/2024	6.00	6.00	—
P1.2 - Mobilization	Grading	8/5/2024	8/21/2024	6.00	15.0	—
P1.1 - Tree removal	Grading	7/8/2024	8/17/2024	6.00	36.0	—
P1 - Mobilization and access development	Grading	7/8/2024	11/16/2024	6.00	114	—
P5 - Dam notch and tie-in chute	Grading	10/25/2025	1/19/2026	6.00	74.0	—
P5.1 - Demolition	Grading	10/25/2025	11/5/2025	6.00	10.0	—
P5.2 - Excavation, Subgrade	Grading	11/6/2025	11/20/2025	6.00	13.0	—
P5.3 - Form and Pour Concrete	Grading	11/21/2025	12/29/2025	6.00	33.0	—
P5.4 - Install Footbridge	Grading	12/30/2025	1/19/2026	6.00	18.0	—
P6 - Plunge pool	Grading	8/5/2025	9/15/2025	6.00	36.0	—
P6.1 - Flow bypass	Grading	8/5/2025	8/11/2025	6.00	6.00	—
P6.2 - Excavation	Grading	8/12/2025	9/9/2025	6.00	25.0	—
P6.3 - Slope protection	Grading	9/10/2025	9/15/2025	6.00	5.00	—
P7 - Remaining Work Scope	Grading	12/29/2025	2/24/2026	6.00	50.0	—
P7.1 - Cofferdam removal	Grading	1/9/2026	1/16/2026	6.00	7.00	—
P7.2 - Lighting	Grading	1/19/2026	2/10/2026	6.00	20.0	—
P7.3 - Log boom	Grading	12/29/2025	1/9/2026	6.00	11.0	—
P7.4 - Restoration	Grading	1/16/2026	2/3/2026	6.00	16.0	—
P7.5 - Demobilization	Grading	2/11/2026	2/24/2026	6.00	12.0	—

P8 - Spillway abandonment	Grading	4/9/2026	5/6/2026	6.00	24.0	—
P8.1 - Remove Cofferdam	Grading	4/9/2026	4/20/2026	6.00	10.0	—
P8.2 - Canal Side Channel	Grading	4/9/2026	4/22/2026	6.00	12.0	—
P8.3 - Cover Bathtub	Grading	4/23/2026	5/6/2026	6.00	12.0	—
P9 - Batch Plant Equip	Grading	11/1/2024	12/31/2025	3.00	183	—

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
P1 - Mobilization and access development	—	—	—	—
P1 - Mobilization and access development	Worker	0.00	14.3	LDA,LDT1,LDT2
P1 - Mobilization and access development	Vendor	0.00	8.80	HHDT,MHDT
P1 - Mobilization and access development	Hauling	6.00	28.7	HHDT
P1 - Mobilization and access development	Onsite truck	0.00	0.00	HHDT
P1.1 - Tree removal	—	—	—	—
P1.1 - Tree removal	Worker	0.00	14.3	LDA,LDT1,LDT2
P1.1 - Tree removal	Vendor	0.00	8.80	HHDT,MHDT
P1.1 - Tree removal	Hauling	20.0	28.7	HHDT
P1.1 - Tree removal	Onsite truck	0.00	52.5	HHDT
P1.2 - Mobilization	—	—	—	—
P1.2 - Mobilization	Worker	0.00	14.3	LDA,LDT1,LDT2
P1.2 - Mobilization	Vendor	0.00	8.80	HHDT,MHDT
P1.2 - Mobilization	Hauling	12.0	28.7	HHDT

P1.2 - Mobilization	Onsite truck	0.00	0.00	HHDT
P1.3 - Laydown area development	—	—	—	—
P1.3 - Laydown area development	Worker	0.00	14.3	LDA,LDT1,LDT2
P1.3 - Laydown area development	Vendor	0.00	8.80	HHDT,MHDT
P1.3 - Laydown area development	Hauling	0.00	20.0	HHDT
P1.3 - Laydown area development	Onsite truck	0.00	47.5	HHDT
P1.4 - Access road construction	—	—	—	—
P1.4 - Access road construction	Worker	0.00	14.3	LDA,LDT1,LDT2
P1.4 - Access road construction	Vendor	0.00	8.80	HHDT,MHDT
P1.4 - Access road construction	Hauling	0.00	20.0	HHDT
P1.4 - Access road construction	Onsite truck	0.00	60.0	HHDT
P2 - Spillway chute and flip bucket	—	—	—	—
P2 - Spillway chute and flip bucket	Worker	0.00	14.3	LDA,LDT1,LDT2
P2 - Spillway chute and flip bucket	Vendor	0.00	8.80	HHDT,MHDT
P2 - Spillway chute and flip bucket	Hauling	4.00	28.7	HHDT
P2 - Spillway chute and flip bucket	Onsite truck	0.00	0.00	HHDT
P4.2 - Crest form and pour concrete	—	—	—	—
P4.2 - Crest form and pour concrete	Worker	0.00	14.3	LDA,LDT1,LDT2
P4.2 - Crest form and pour concrete	Vendor	0.00	8.80	HHDT,MHDT
P4.2 - Crest form and pour concrete	Hauling	0.00	8.00	HHDT
P4.2 - Crest form and pour concrete	Onsite truck	0.00	20.0	HHDT
P4.1 - Crest excavation/ subgrade	—	—	—	—
P4.1 - Crest excavation/ subgrade	Worker	0.00	14.3	LDA,LDT1,LDT2
P4.1 - Crest excavation/ subgrade	Vendor	0.00	8.80	HHDT,MHDT
P4.1 - Crest excavation/ subgrade	Hauling	0.00	20.0	HHDT
P4.1 - Crest excavation/ subgrade	Onsite truck	0.00	60.0	HHDT
P4 - Crest structure	—	—	—	—

P4 - Crest structure	Worker	0.00	14.3	LDA,LDT1,LDT2
P4 - Crest structure	Vendor	0.00	8.80	HHDT,MHDT
P4 - Crest structure	Hauling	4.00	28.7	HHDT
P4 - Crest structure	Onsite truck	0.00	0.00	HHDT
P3.6 - Trench Cutoff Concrete 3	—	—	—	—
P3.6 - Trench Cutoff Concrete 3	Worker	0.00	14.3	LDA,LDT1,LDT2
P3.6 - Trench Cutoff Concrete 3	Vendor	0.00	8.80	HHDT,MHDT
P3.6 - Trench Cutoff Concrete 3	Hauling	0.00	8.00	HHDT
P3.6 - Trench Cutoff Concrete 3	Onsite truck	0.00	10.0	HHDT
P3.5 - Trench Cutoff Concrete 2	—	—	—	—
P3.5 - Trench Cutoff Concrete 2	Worker	0.00	14.3	LDA,LDT1,LDT2
P3.5 - Trench Cutoff Concrete 2	Vendor	0.00	8.80	HHDT,MHDT
P3.5 - Trench Cutoff Concrete 2	Hauling	0.00	8.00	HHDT
P3.5 - Trench Cutoff Concrete 2	Onsite truck	0.00	10.0	HHDT
P3.4 - Trench Cutoff Concrete 1	—	—	—	—
P3.4 - Trench Cutoff Concrete 1	Worker	0.00	14.3	LDA,LDT1,LDT2
P3.4 - Trench Cutoff Concrete 1	Vendor	0.00	8.80	HHDT,MHDT
P3.4 - Trench Cutoff Concrete 1	Hauling	0.00	8.00	HHDT
P3.4 - Trench Cutoff Concrete 1	Onsite truck	0.00	10.0	HHDT
P3.3 - Place piles, sheets, and concrete	—	—	—	—
P3.3 - Place piles, sheets, and concrete	Worker	0.00	14.3	LDA,LDT1,LDT2
P3.3 - Place piles, sheets, and concrete	Vendor	0.00	8.80	HHDT,MHDT
P3.3 - Place piles, sheets, and concrete	Hauling	0.00	20.0	HHDT
P3.3 - Place piles, sheets, and concrete	Onsite truck	0.00	20.0	HHDT
P3.1 - Mass concrete	—	—	—	—
P3.1 - Mass concrete	Worker	0.00	14.3	LDA,LDT1,LDT2
P3.1 - Mass concrete	Vendor	0.00	8.80	HHDT,MHDT

P3.1 - Mass concrete	Hauling	0.00	20.0	HHDT
P3.1 - Mass concrete	Onsite truck	0.00	20.0	HHDT
P3 - Cofferdam	—	—	—	—
P3 - Cofferdam	Worker	0.00	14.3	LDA,LDT1,LDT2
P3 - Cofferdam	Vendor	0.00	8.80	HHDT,MHDT
P3 - Cofferdam	Hauling	4.00	28.7	HHDT
P3 - Cofferdam	Onsite truck	0.00	0.00	HHDT
P2.3 - Drains, Cleanouts, and Backfill	—	—	—	—
P2.3 - Drains, Cleanouts, and Backfill	Worker	0.00	14.3	LDA,LDT1,LDT2
P2.3 - Drains, Cleanouts, and Backfill	Vendor	0.00	8.80	HHDT,MHDT
P2.3 - Drains, Cleanouts, and Backfill	Hauling	0.00	20.0	HHDT
P2.3 - Drains, Cleanouts, and Backfill	Onsite truck	0.00	0.00	HHDT
P2.2 - Spillway form and pour concrete	—	—	—	—
P2.2 - Spillway form and pour concrete	Worker	0.00	14.3	LDA,LDT1,LDT2
P2.2 - Spillway form and pour concrete	Vendor	0.00	8.80	HHDT,MHDT
P2.2 - Spillway form and pour concrete	Hauling	0.00	8.00	HHDT
P2.2 - Spillway form and pour concrete	Onsite truck	0.00	50.0	HHDT
P2.1 - Spillway excavation/subgrade	—	—	—	—
P2.1 - Spillway excavation/subgrade	Worker	0.00	14.3	LDA,LDT1,LDT2
P2.1 - Spillway excavation/subgrade	Vendor	0.00	8.80	HHDT,MHDT
P2.1 - Spillway excavation/subgrade	Hauling	0.00	20.0	HHDT
P2.1 - Spillway excavation/subgrade	Onsite truck	0.00	60.0	HHDT
P3.2 - Excavate cofferdam	—	—	—	—
P3.2 - Excavate cofferdam	Worker	0.00	14.3	LDA,LDT1,LDT2
P3.2 - Excavate cofferdam	Vendor	0.00	8.80	HHDT,MHDT
P3.2 - Excavate cofferdam	Hauling	0.00	20.0	HHDT
P3.2 - Excavate cofferdam	Onsite truck	0.00	20.0	HHDT

P5 - Dam notch and tie-in chute	—	—	—	—
P5 - Dam notch and tie-in chute	Worker	0.00	14.3	LDA,LDT1,LDT2
P5 - Dam notch and tie-in chute	Vendor	0.00	8.80	HHDT,MHDT
P5 - Dam notch and tie-in chute	Hauling	4.00	28.7	HHDT
P5 - Dam notch and tie-in chute	Onsite truck	0.00	0.00	HHDT
P5.1 - Demolition	—	—	—	—
P5.1 - Demolition	Worker	0.00	14.3	LDA,LDT1,LDT2
P5.1 - Demolition	Vendor	0.00	8.80	HHDT,MHDT
P5.1 - Demolition	Hauling	0.00	20.0	HHDT
P5.1 - Demolition	Onsite truck	0.00	10.0	HHDT
P5.2 - Excavation, Subgrade	—	—	—	—
P5.2 - Excavation, Subgrade	Worker	0.00	14.3	LDA,LDT1,LDT2
P5.2 - Excavation, Subgrade	Vendor	0.00	8.80	HHDT,MHDT
P5.2 - Excavation, Subgrade	Hauling	0.00	20.0	HHDT
P5.2 - Excavation, Subgrade	Onsite truck	0.00	10.0	HHDT
P5.3 - Form and Pour Concrete	—	—	—	—
P5.3 - Form and Pour Concrete	Worker	0.00	14.3	LDA,LDT1,LDT2
P5.3 - Form and Pour Concrete	Vendor	0.00	8.80	HHDT,MHDT
P5.3 - Form and Pour Concrete	Hauling	0.00	8.00	HHDT
P5.3 - Form and Pour Concrete	Onsite truck	0.00	20.0	HHDT
P5.4 - Install Footbridge	—	—	—	—
P5.4 - Install Footbridge	Worker	0.00	14.3	LDA,LDT1,LDT2
P5.4 - Install Footbridge	Vendor	0.00	8.80	HHDT,MHDT
P5.4 - Install Footbridge	Hauling	0.00	20.0	HHDT
P5.4 - Install Footbridge	Onsite truck	0.00	20.0	HHDT
P6 - Plunge pool	—	—	—	—
P6 - Plunge pool	Worker	0.00	14.3	LDA,LDT1,LDT2

P6 - Plunge pool	Vendor	0.00	8.80	HHDT,MHDT
P6 - Plunge pool	Hauling	4.00	28.7	HHDT
P6 - Plunge pool	Onsite truck	0.00	0.00	HHDT
P6.1 - Flow bypass	—	—	—	—
P6.1 - Flow bypass	Worker	0.00	14.3	LDA,LDT1,LDT2
P6.1 - Flow bypass	Vendor	0.00	8.80	HHDT,MHDT
P6.1 - Flow bypass	Hauling	0.00	20.0	HHDT
P6.1 - Flow bypass	Onsite truck	0.00	0.00	HHDT
P6.2 - Excavation	—	—	—	—
P6.2 - Excavation	Worker	0.00	14.3	LDA,LDT1,LDT2
P6.2 - Excavation	Vendor	0.00	8.80	HHDT,MHDT
P6.2 - Excavation	Hauling	0.00	20.0	HHDT
P6.2 - Excavation	Onsite truck	0.00	50.0	HHDT
P6.3 - Slope protection	—	—	—	—
P6.3 - Slope protection	Worker	0.00	14.3	LDA,LDT1,LDT2
P6.3 - Slope protection	Vendor	0.00	8.80	HHDT,MHDT
P6.3 - Slope protection	Hauling	0.00	20.0	HHDT
P6.3 - Slope protection	Onsite truck	0.00	10.0	HHDT
P7 - Remaining Work Scope	—	—	—	—
P7 - Remaining Work Scope	Worker	0.00	14.3	LDA,LDT1,LDT2
P7 - Remaining Work Scope	Vendor	0.00	8.80	HHDT,MHDT
P7 - Remaining Work Scope	Hauling	4.00	28.7	HHDT
P7 - Remaining Work Scope	Onsite truck	0.00	0.00	HHDT
P7.1 - Cofferdam removal	—	—	—	—
P7.1 - Cofferdam removal	Worker	0.00	14.3	LDA,LDT1,LDT2
P7.1 - Cofferdam removal	Vendor	0.00	8.80	HHDT,MHDT
P7.1 - Cofferdam removal	Hauling	0.00	20.0	HHDT

P7.1 - Cofferdam removal	Onsite truck	0.00	0.00	HHDT
P7.2 - Lighting	—	—	—	—
P7.2 - Lighting	Worker	0.00	14.3	LDA,LDT1,LDT2
P7.2 - Lighting	Vendor	0.00	8.80	HHDT,MHDT
P7.2 - Lighting	Hauling	0.00	20.0	HHDT
P7.2 - Lighting	Onsite truck	0.00	12.5	HHDT
P7.3 - Log boom	—	—	—	—
P7.3 - Log boom	Worker	0.00	14.3	LDA,LDT1,LDT2
P7.3 - Log boom	Vendor	0.00	8.80	HHDT,MHDT
P7.3 - Log boom	Hauling	0.00	20.0	HHDT
P7.3 - Log boom	Onsite truck	0.00	0.00	HHDT
P7.4 - Restoration	—	—	—	—
P7.4 - Restoration	Worker	0.00	14.3	LDA,LDT1,LDT2
P7.4 - Restoration	Vendor	0.00	8.80	HHDT,MHDT
P7.4 - Restoration	Hauling	0.00	20.0	HHDT
P7.4 - Restoration	Onsite truck	0.00	72.5	HHDT
P7.5 - Demobilization	—	—	—	—
P7.5 - Demobilization	Worker	0.00	14.3	LDA,LDT1,LDT2
P7.5 - Demobilization	Vendor	0.00	8.80	HHDT,MHDT
P7.5 - Demobilization	Hauling	0.00	20.0	HHDT
P7.5 - Demobilization	Onsite truck	0.00	72.5	HHDT
P8 - Spillway abandonment	—	—	—	—
P8 - Spillway abandonment	Worker	0.00	14.3	LDA,LDT1,LDT2
P8 - Spillway abandonment	Vendor	0.00	8.80	HHDT,MHDT
P8 - Spillway abandonment	Hauling	4.00	28.7	HHDT
P8 - Spillway abandonment	Onsite truck	0.00	0.00	HHDT
P8.1 - Remove Cofferdam	—	—	—	—

P8.1 - Remove Cofferdam	Worker	0.00	14.3	LDA,LDT1,LDT2
P8.1 - Remove Cofferdam	Vendor	0.00	8.80	HHDT,MHDT
P8.1 - Remove Cofferdam	Hauling	0.00	20.0	HHDT
P8.1 - Remove Cofferdam	Onsite truck	0.00	10.0	HHDT
P8.2 - Canal Side Channel	—	—	—	—
P8.2 - Canal Side Channel	Worker	0.00	14.3	LDA,LDT1,LDT2
P8.2 - Canal Side Channel	Vendor	0.00	8.80	HHDT,MHDT
P8.2 - Canal Side Channel	Hauling	0.00	20.0	HHDT
P8.2 - Canal Side Channel	Onsite truck	0.00	10.0	HHDT
P8.3 - Cover Bathtub	—	—	—	—
P8.3 - Cover Bathtub	Worker	0.00	14.3	LDA,LDT1,LDT2
P8.3 - Cover Bathtub	Vendor	0.00	8.80	HHDT,MHDT
P8.3 - Cover Bathtub	Hauling	0.00	20.0	HHDT
P8.3 - Cover Bathtub	Onsite truck	0.00	10.0	HHDT
P9 - Batch Plant Equip	—	—	—	—
P9 - Batch Plant Equip	Worker	0.00	14.3	LDA,LDT1,LDT2
P9 - Batch Plant Equip	Vendor	0.00	8.80	HHDT,MHDT
P9 - Batch Plant Equip	Hauling	0.00	20.0	HHDT
P9 - Batch Plant Equip	Onsite truck	0.00	0.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

This data was produced from the i-Tree Planting Calculator version 2.6.0 for Pioneer; CA.
Location: Pioneer; CA
Lifetime: 99
Project Lifetime Tree Mortality: 70
Run Date: 6-9-2023

Species	Number	DBH (inches)	TreeCondition	CrownLightExposure	CO2 Seqt (pounds)	CO2 Seqt (MT)
Cedar spp(Cedrus)	6	17.33	dead	full sun	0	0.00
Ponderosa pine(Pinus ponderosa)	151	25.55	excellent	full sun	1,869,534.80	848.01
White fir(Abies concolor)	2	8	excellent	full sun	12,311.00	5.58
Sugar pine(Pinus lambertiana)	19	17.26	excellent	full sun	250,211.30	113.49
Black oak(Quercus velutina)	12	17.33	excellent	full sun	376,283.60	170.68
Madrone spp(Arbutus)	2	6	excellent	full sun	9,559.00	4.34
Live oak(Quercus virginiana)	16	12.67	excellent	full sun	260,639.60	118.22
Pine spp(Pinus)	1	18	excellent	full sun	14,144.20	6.42
Oak spp(Quercus)	3	10.67	excellent	full sun	59,410.90	26.95
Douglas fir(Pseudotsuga menziesii)	1	10	excellent	full sun	8,065.80	3.66
Cedar spp(Cedrus)	1	22	dying	full sun	1937.1	0.88
Alder spp(Alnus)	1	12	dead	full sun	0	0.00
Douglas fir(Pseudotsuga menziesii)	3	31	dying	full sun	4,307.20	1.95
Ponderosa pine(Pinus ponderosa)	1	16	dying	full sun	1016.2	0.46
Douglas fir(Pseudotsuga menziesii)	15	18.67	dead	full sun	0	0.00
Ponderosa pine(Pinus ponderosa)	4	21.5	dead	full sun	0	0.00
Sugar pine(Pinus lambertiana)	1	10	dead	full sun	0	0.00
Black oak(Quercus velutina)	3	18	dead	full sun	0	0.00
Cedar spp(Cedrus)	112	15.4	excellent	full sun	1,812,161.40	821.98
Alder spp(Alnus)	14	10.62	excellent	full sun	82,858.70	37.58
Douglas fir(Pseudotsuga menziesii)	394	17.21	excellent	full sun	3,468,087.80	1,573.10
Total over lifetime of 99 years					8,230,528.50	3,733.30
Average annual					83,137	38

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: Amador
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for ID

Region	Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT
Amador	2024	HHDT	Aggregate	Aggregate	Diesel	202.5510014	15545.49	15545.49	0.00

Road	Amount	Unit	Distance (ft)	PM10 (g/day)	g/sec	**g/sec/m^2**
Spur 1	38	one-way haul trips per day	1000	0.459648219	1.2768E-05	**6.24319E-09**
Tiger Creek Road	10	one-way haul trips per day	1000	0.120960058	3.36E-06	**1.64295E-09**
SR 88	38	one-way haul trips per day	1000	0.459648219	1.2768E-05	**6.24319E-09**

variable emissions operating seconds per day	36000	
road width	6.71	meters
feet per meter	3.281	

SchCode	Pounds per day		Pounds per day		Pounds per day	
	2024		2025		2026	
	PM10 D	PM2.5 D	PM10 D	PM2.5 D	PM10 D	PM2.5 D
Batch01	2.1	0.3	2.1	0.3	0.0	0.0

grams per pound	453.592
variable emissions operating seconds per day	36000
Max 24hr PM10 emission rate	0.0264268 g/s
Max 24hr PM2.5 emission rate	0.0039282 g/s

Annual Emissions

Year	Tons PM10	Tons PM2.5	MT CO2
2024	0.01	0.01	138
2025	0.03	0.03	911
2026	0.01	0.00	0
Total	0.05	0.03	1,049

grams per ton	907185	
variable emissions operating seconds per year	9360000	
Max annual PM10 emission rate	0.002708933	g/s
Max annual PM2.5 emission rate	0.002443219	g/s

PM Emissions from Concrete Batching at Onsite Facility

		Max Pounds per Day	
Code	Facility	PM10	PM2.5
Batch01	Ceder Mill	2.04	0.30

Pounds of PM10 per Day				
Sand Transfer	Aggregate Transfer	Cement Supplement Unloading	Weight Hopper Loading	Truck Mix Loading
0.04	0.18	0.04	0.28	1.48

Pounds of PM2.5 per Day				
Sand Transfer	Aggregate Transfer	Cement Supplement Unloading	Weight Hopper Loading	Truck Mix Loading
0.01	0.03	0.01	0.04	0.22

		Average Pounds per Day		**Tons PM10 per Year**			**Tons PM2.5 per Year**		
Code	Facility	PM10	PM2.5	2024	2025	2026	2024	2025	2026
Batch01	Ceder Mill	0.22	0.03	0.00	0.02	0.00	0.00	0.02	0.00

Pounds of PM10 per Day				
Sand Transfer	Aggregate Transfer	Cement Supplement Unloading	Weight Hopper Loading	Truck Mix Loading
0.00	0.02	0.00	0.03	0.16

Pounds of PM2.5 per Day				
Sand Transfer	Aggregate Transfer	Cement Supplement Unloading	Weight Hopper Loading	Truck Mix Loading
0.00	0.00	0.00	0.00	0.02

Dust Emissions from the Onsite Stockpile

Complex	Location	Pile Size (acre)	Pounds per Day		Tons PM10 per Year			Tons PM2.5 per Year		
			PM10	PM2.5	2024	2025	2026	2024	2025	2026
Ceder Mill	MCAB	0.5	0.06	0.01	0.01	0.01	0.01	0.00	0.00	0.00

Operational Lighting Electricity Consumption (2026)

Pollutant	Factor*	Unit	Consumption	Unit	Emissions	Unit
CO2	206.983	lb/MWh	2.608	MWh/yr	0.244854	MT/yr
CH4	0.033	lb/MWh	2.608	MWh/yr	0.000039	MT/yr
N2O	0.004	lb/MWh	2.608	MWh/yr	0.000005	MT/yr
				CO2e	0.247240	MT/yr

*Source: CalEEMod (PG&E data)

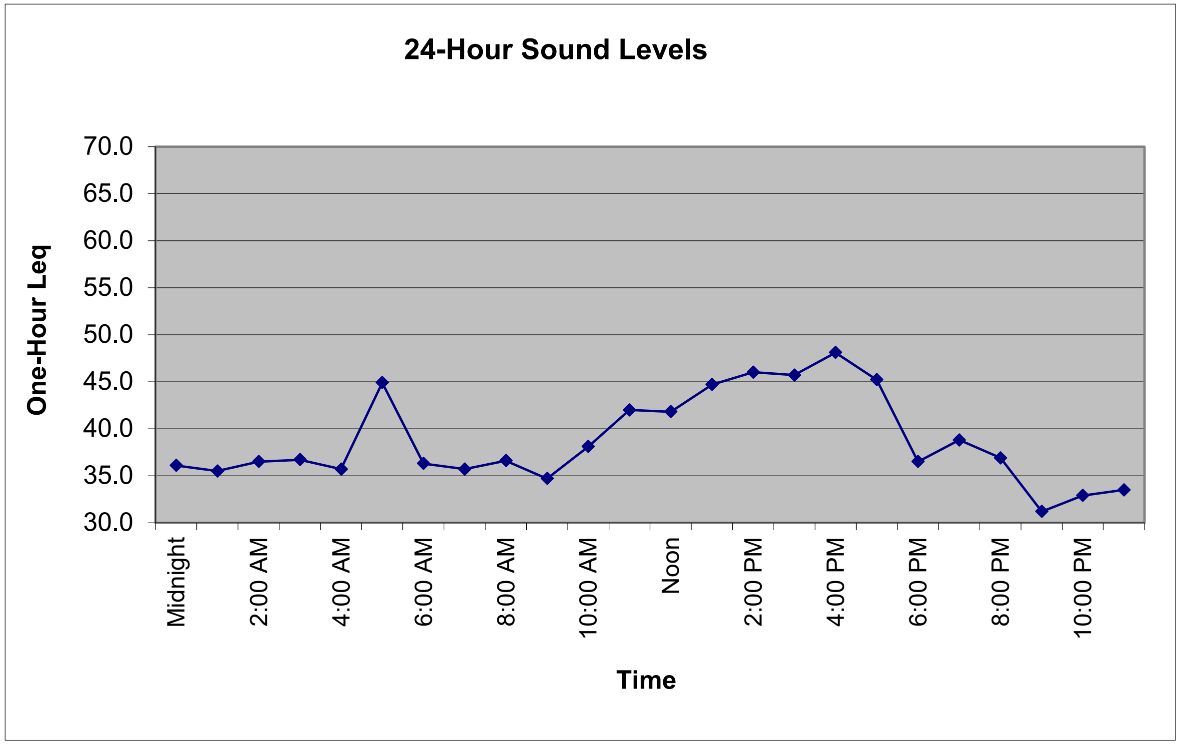
HRA and AAQA Files Available Upon Request

Appendix E
Noise Measurement Data and Modeling Files

Appendix E-1
Long-Term Measurement Data

Ldn/CNEL Calculation Spreadsheet

Project:	PG&E, Tiger Creek Spillway		Date:	6/21/2023	Analyst:	Schumaker, N		
Location:	LT-1							
Time	Wednesday 6/21/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	36.1	41.4	45.6	45.7	48.1	-2.5	0.1	Evening
1:00 AM	35.5		9.9	10.0				Night
2:00 AM	36.5							
3:00 AM	36.7							
4:00 AM	35.7							
5:00 AM	44.9							
6:00 AM	36.3							
7:00 AM	35.7							
8:00 AM	36.6							
9:00 AM	34.7							
10:00 AM	38.1							
11:00 AM	42.0							
Noon	41.8							
1:00 PM	44.7							
2:00 PM	46.0							
3:00 PM	45.7							
4:00 PM	48.1							
5:00 PM	45.2							
6:00 PM	36.5							
7:00 PM	38.8							
8:00 PM	36.9							
9:00 PM	31.2							
10:00 PM	32.9							
11:00 PM	33.5							



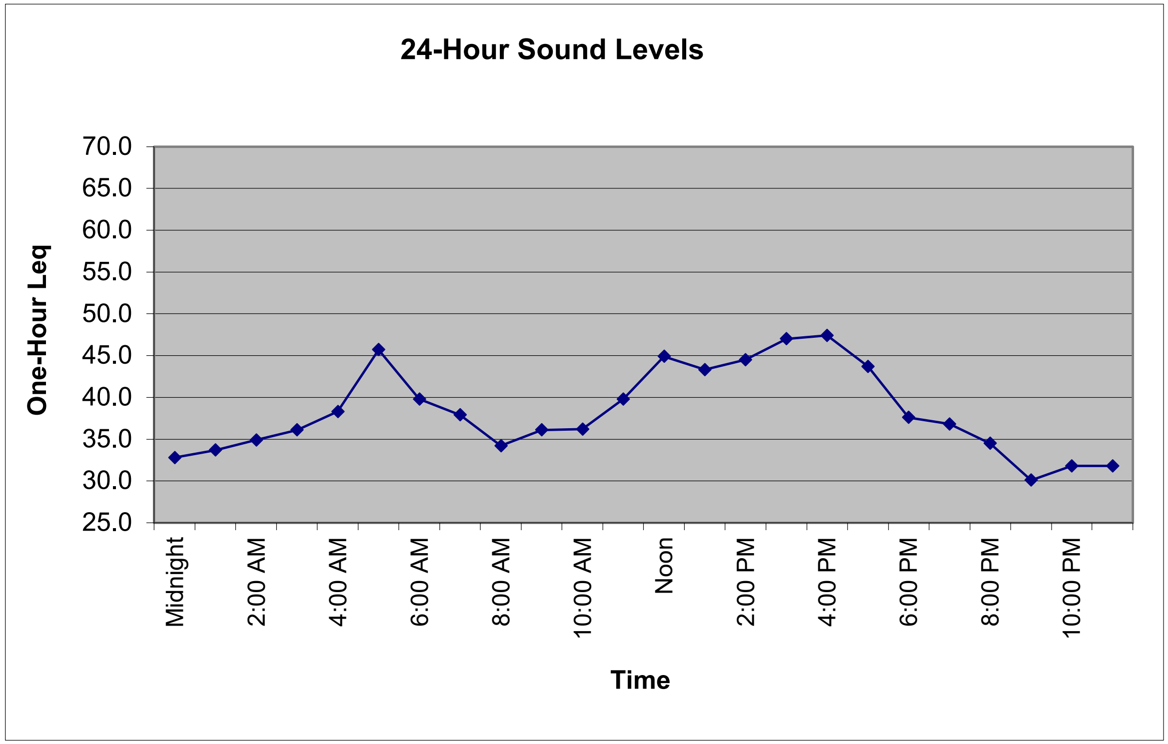
Ldn	45.6
Worst Hour Leq	48.1
Lowest Hour LEQ	31.2
12-hour Leq	43.6

Ldn/CNEL Calculation Spreadsheet

Project: PG&E, Tiger Creek Spillway Date: 6/22/2023 Analyst: Schumaker, N

Location: LT-1

Time	Thursday 6/22/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	
								Day
Midnight	32.8	41.2	45.9	46.0	47.4	-1.5	0.1	Evening
1:00 AM	33.7		8.0	8.1				Night
2:00 AM	34.9							
3:00 AM	36.1							
4:00 AM	38.3							
5:00 AM	45.7							
6:00 AM	39.8							
7:00 AM	37.9							
8:00 AM	34.2							
9:00 AM	36.1							
10:00 AM	36.2							
11:00 AM	39.8							
Noon	44.9							
1:00 PM	43.3							
2:00 PM	44.5							
3:00 PM	47.0							
4:00 PM	47.4							
5:00 PM	43.7							
6:00 PM	37.6							
7:00 PM	36.8							
8:00 PM	34.5							
9:00 PM	30.1							
10:00 PM	31.8							
11:00 PM	31.8							



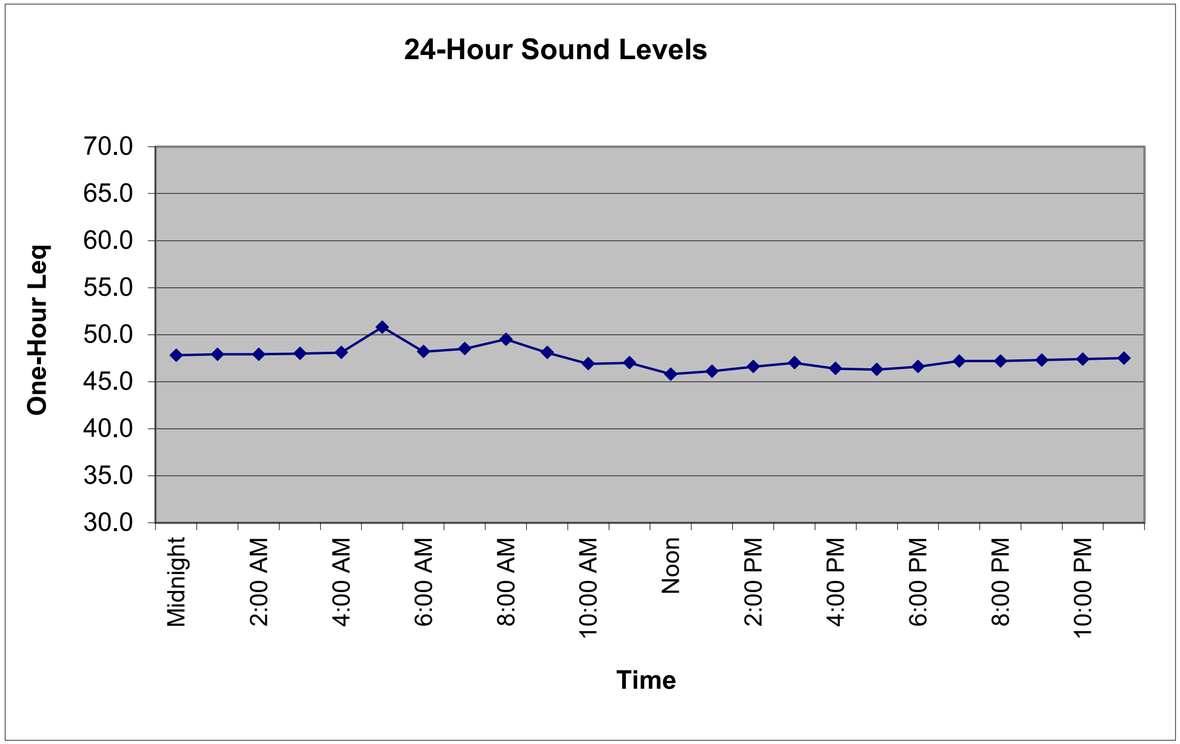
Ldn	45.9
Worst Hour Leq	47.4
Lowest Hour LEQ	30.1
11-hour Leq	43.3

Ldn/CNEL Calculation Spreadsheet

Project: PG&E, Tiger Creek Spillway   Date: 6/21/2023   Analyst: Schumaker, N

Location: LT-2

Time	Wednesday 6/21/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	
								Day
Midnight	47.8	47.7	54.6	54.8	50.8	3.8	0.2	Evening
1:00 AM	47.9		6.1	6.3				Night
2:00 AM	47.9							
3:00 AM	48.0							
4:00 AM	48.1							
5:00 AM	50.8							
6:00 AM	48.2							
7:00 AM	48.5							
8:00 AM	49.5							
9:00 AM	48.1							
10:00 AM	46.9							
11:00 AM	47.0							
Noon	45.8							
1:00 PM	46.1							
2:00 PM	46.6							
3:00 PM	47.0							
4:00 PM	46.4							
5:00 PM	46.3							
6:00 PM	46.6							
7:00 PM	47.2							
8:00 PM	47.2							
9:00 PM	47.3							
10:00 PM	47.4							
11:00 PM	47.5							



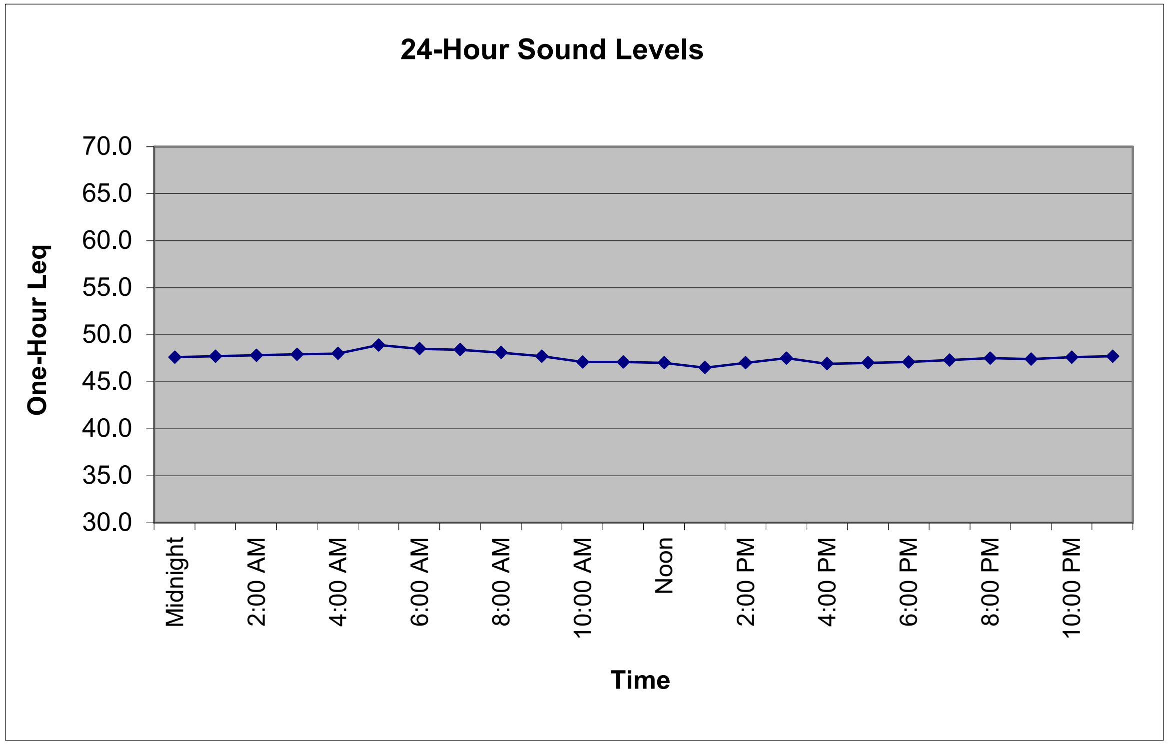
Ldn	54.6
Worst Hour Leq	50.8
Lowest Hour LEQ	45.8
11-hour Leq	47.3

Ldn/CNEL Calculation Spreadsheet

Project: PG&E, Tiger Creek Spillway Date: 6/22/2023 Analyst: Schumaker, N

Location: LT-2

Time	Thursday 6/22/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	
								Day
Midnight	47.6	47.6	54.3	54.5	48.9	5.4	0.2	Evening
1:00 AM	47.7		5.9	6.1				Night
2:00 AM	47.8							
3:00 AM	47.9							
4:00 AM	48.0							
5:00 AM	48.9							
6:00 AM	48.5							
7:00 AM	48.4							
8:00 AM	48.1							
9:00 AM	47.7							
10:00 AM	47.1							
11:00 AM	47.1							
Noon	47.0							
1:00 PM	46.5							
2:00 PM	47.0							
3:00 PM	47.5							
4:00 PM	46.9							
5:00 PM	47.0							
6:00 PM	47.1							
7:00 PM	47.3							
8:00 PM	47.5							
9:00 PM	47.4							
10:00 PM	47.6							
11:00 PM	47.7							

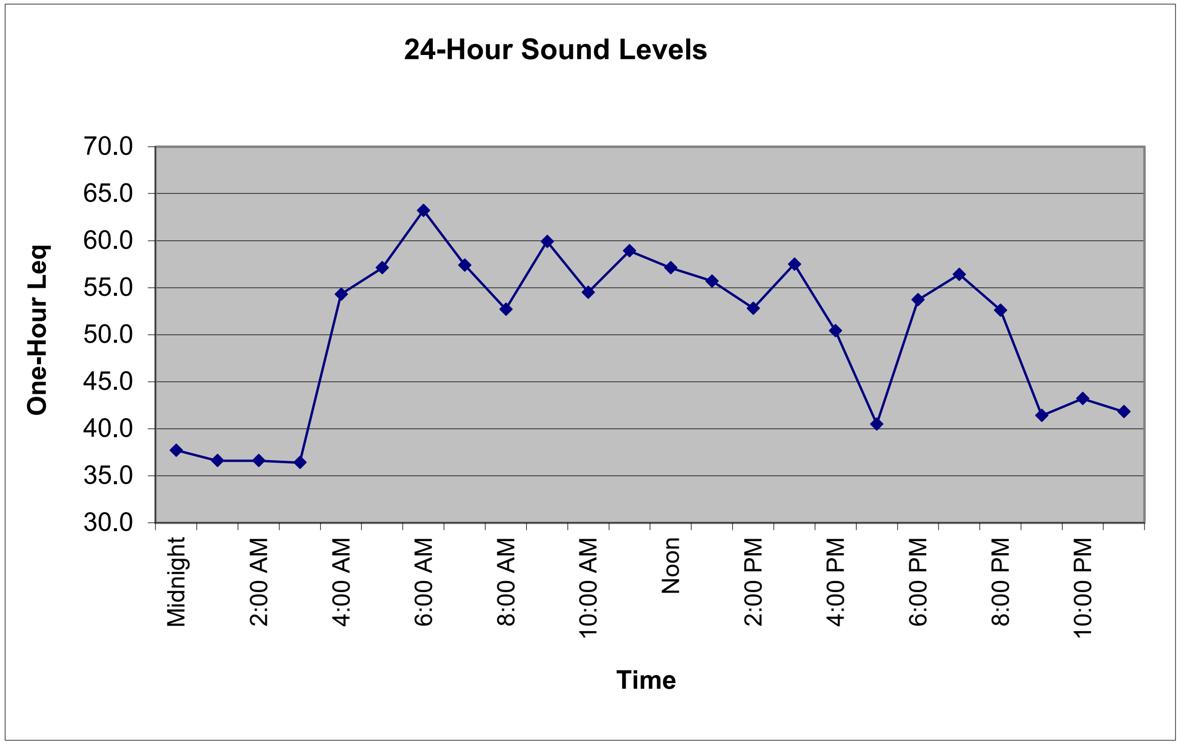


Ldn	54.3
Worst Hour Leq	48.9
Lowest Hour LEQ	46.5
11-hour Leq	47.3

Ldn/CNEL Calculation Spreadsheet

Project: PG&E, Tiger Creek Spillway Date: 6/21/2023 Analyst: Schumaker, N
Location: LT-3

Time	Wednesday 6/21/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	
Midnight	37.7	55.4	61.6	61.8	63.2	-1.6	0.2	Day
1:00 AM	36.6		4.2	4.4				Evening
2:00 AM	36.6							Night
3:00 AM	36.4							
4:00 AM	54.3							
5:00 AM	57.1							
6:00 AM	63.2							
7:00 AM	57.4							
8:00 AM	52.7							
9:00 AM	59.9							
10:00 AM	54.5							
11:00 AM	58.9							
Noon	57.1							
1:00 PM	55.7							
2:00 PM	52.8							
3:00 PM	57.5							
4:00 PM	50.4							
5:00 PM	40.5							
6:00 PM	53.7							
7:00 PM	56.4							
8:00 PM	52.6							
9:00 PM	41.4							
10:00 PM	43.2							
11:00 PM	41.8							



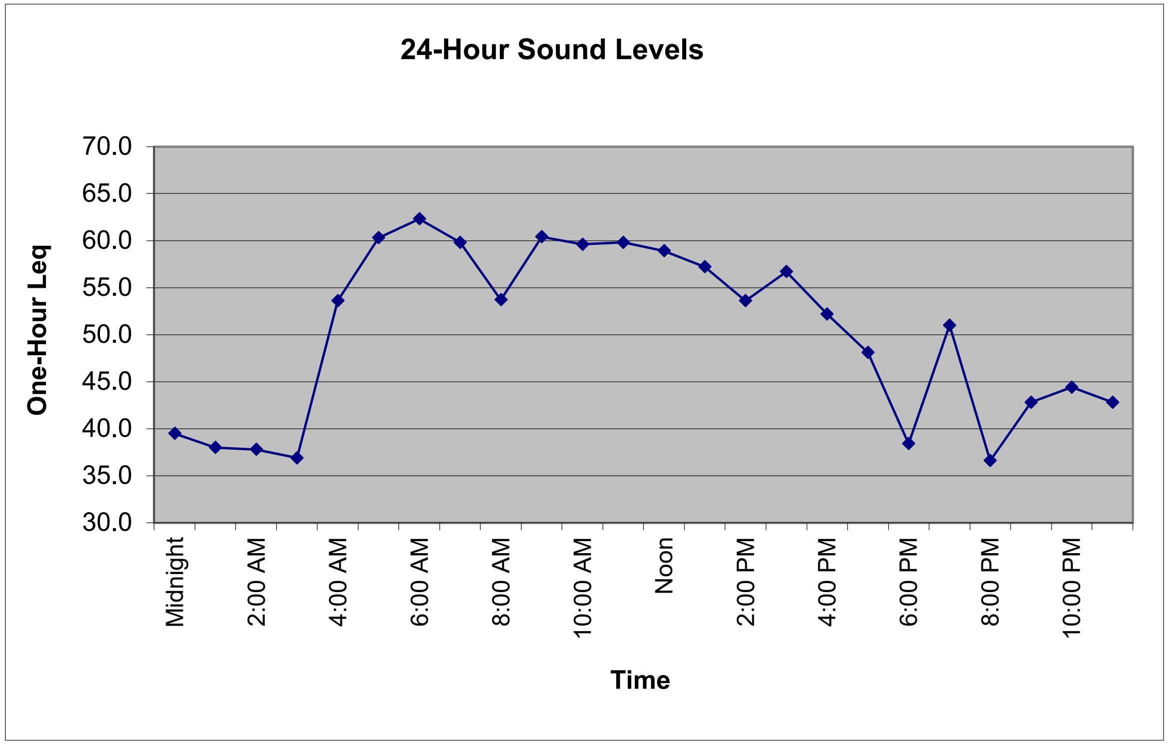
Ldn	61.6
Worst Hour Leq	63.2
Lowest Hour LEQ	36.4
11-hour Leq	56.1

Ldn/CNEL Calculation Spreadsheet

Project: PG&E, Tiger Creek Spillway | Date: 6/22/2023 | Analyst: Schumaker, N

Location: LT-3

Time	Thursday 6/22/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	
								Day
Midnight	39.5	56.0	61.9	61.9	62.3	-0.4	0.0	Evening
1:00 AM	38.0		2.1	2.1				Night
2:00 AM	37.8							
3:00 AM	36.9							
4:00 AM	53.6							
5:00 AM	60.3							
6:00 AM	62.3							
7:00 AM	59.8							
8:00 AM	53.7							
9:00 AM	60.4							
10:00 AM	59.6							
11:00 AM	59.8							
Noon	58.9							
1:00 PM	57.2							
2:00 PM	53.6							
3:00 PM	56.7							
4:00 PM	52.2							
5:00 PM	48.1							
6:00 PM	38.4							
7:00 PM	51.0							
8:00 PM	36.6							
9:00 PM	42.8							
10:00 PM	44.4							
11:00 PM	42.8							

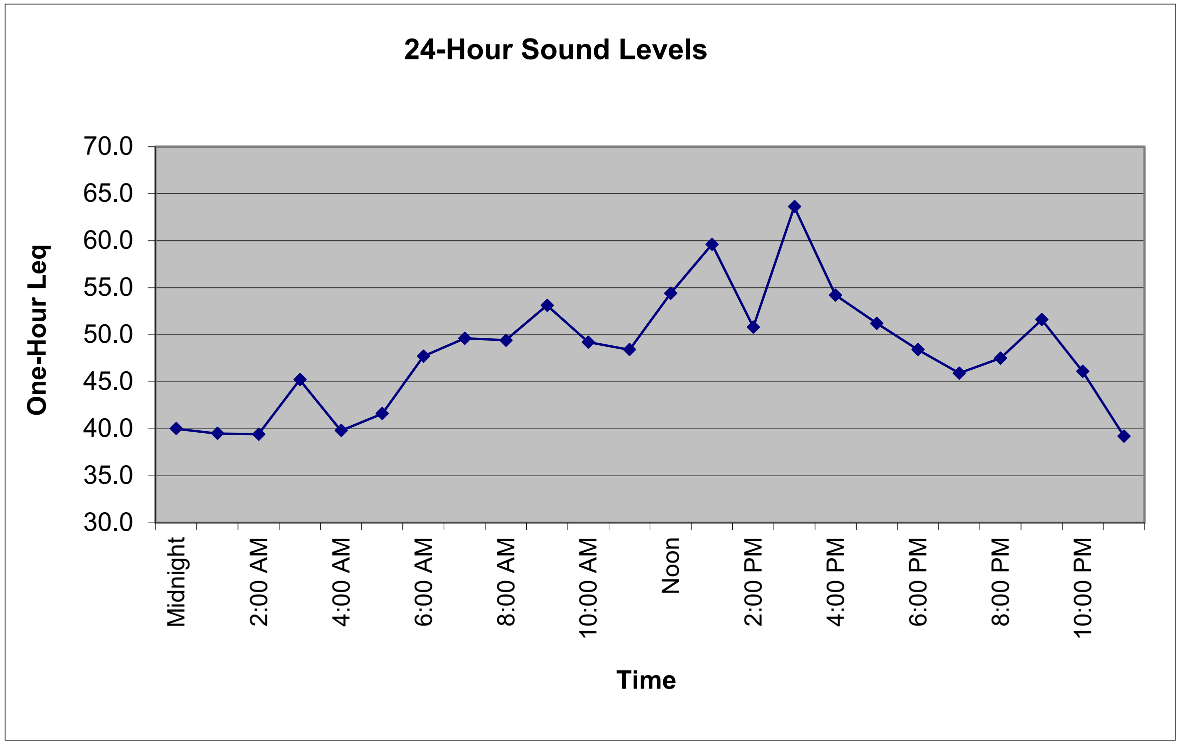


Ldn	61.9
Worst Hour Leq	62.3
Lowest Hour LEQ	36.6
11-hour Leq	57.6

Ldn/CNEL Calculation Spreadsheet

Project: PG&E, Tiger Creek Spillway   Date: 6/21/2023   Analyst: Schumaker, N
Location: LT-4

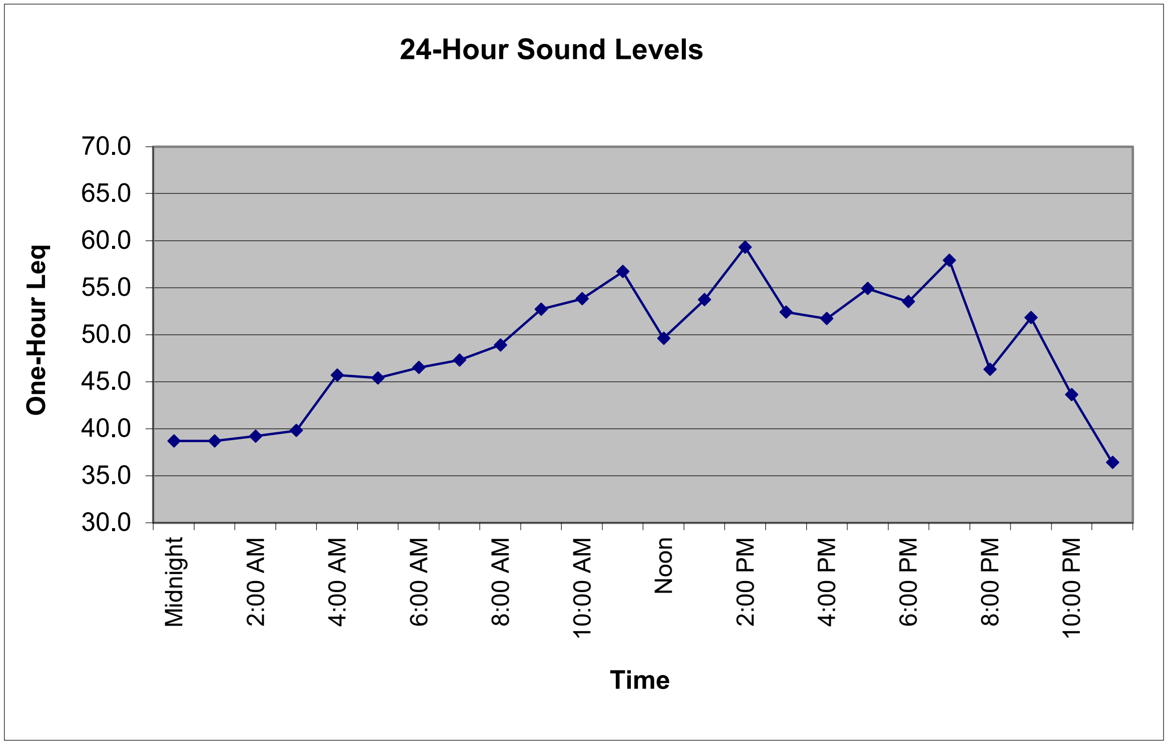
Time	Wednesday 6/21/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	40.0	53.2	54.5	54.8	63.6	-9.1	0.3	Evening
1:00 AM	39.5		4.9	5.2				Night
2:00 AM	39.4							
3:00 AM	45.2							
4:00 AM	39.8							
5:00 AM	41.6							
6:00 AM	47.7							
7:00 AM	49.6							
8:00 AM	49.4							
9:00 AM	53.1							
10:00 AM	49.2							
11:00 AM	48.4							
Noon	54.4							
1:00 PM	59.6							
2:00 PM	50.8							
3:00 PM	63.6							
4:00 PM	54.2							
5:00 PM	51.2							
6:00 PM	48.4							
7:00 PM	45.9							
8:00 PM	47.5							
9:00 PM	51.6							
10:00 PM	46.1							
11:00 PM	39.2							



Ldn	54.5
Worst Hour Leq	63.6
Lowest Hour LEQ	39.2
11-hour Leq	56.2

Ldn/CNEL Calculation Spreadsheet

Project:	PG&E, Tiger Creek Spillway		Date:	6/22/2023	Analyst:	Schumaker, N		
Location:	LT-4							
Time	Thursday 6/22/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	38.7	52.3	53.7	54.9	59.3	-5.6	1.2	Evening
1:00 AM	38.7		6.4	7.6				Night
2:00 AM	39.2							
3:00 AM	39.8							
4:00 AM	45.7							
5:00 AM	45.4							
6:00 AM	46.5							
7:00 AM	47.3							
8:00 AM	48.9							
9:00 AM	52.7							
10:00 AM	53.8							
11:00 AM	56.7							
Noon	49.6							
1:00 PM	53.7							
2:00 PM	59.3							
3:00 PM	52.4							
4:00 PM	51.7							
5:00 PM	54.9							
6:00 PM	53.5							
7:00 PM	57.9							
8:00 PM	46.3							
9:00 PM	51.8							
10:00 PM	43.6							
11:00 PM	36.4							



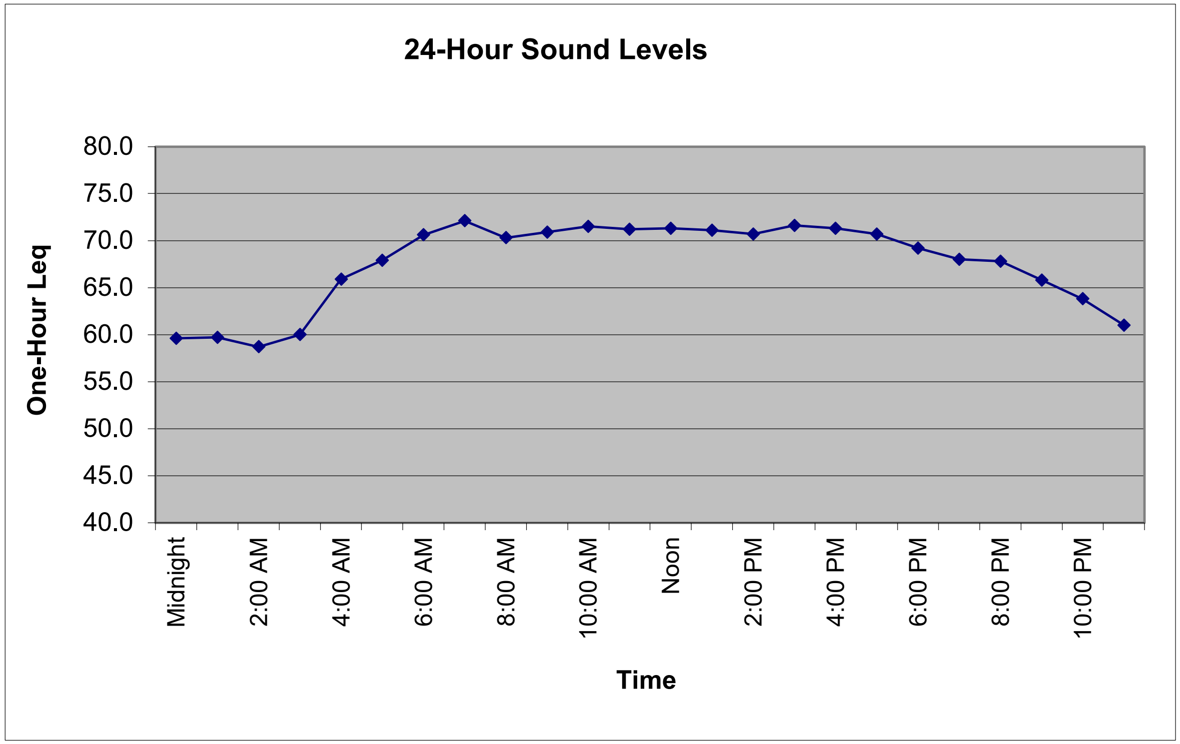
Ldn	53.7
Worst Hour Leq	59.3
Lowest Hour LEQ	36.4
11-hour Leq	54.4

Ldn/CNEL Calculation Spreadsheet

Project: PG&E, Tiger Creek Spillway Date: 6/21/2023 Analyst: Schumaker, N

Location: LT-5

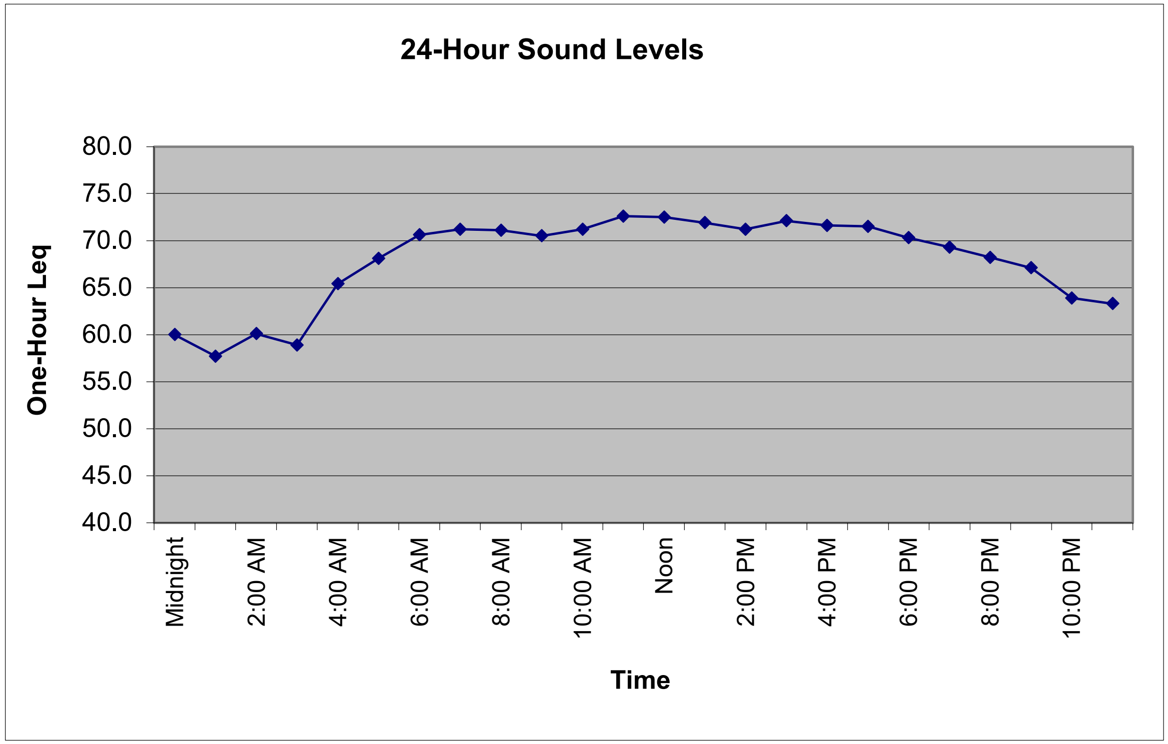
Time	Wednesday 6/21/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	
								Day
Midnight	59.6	69.2	72.8	73.1	72.1	0.7	0.3	Evening
1:00 AM	59.7		0.7	1.0				Night
2:00 AM	58.7							
3:00 AM	60.0							
4:00 AM	65.9							
5:00 AM	67.9							
6:00 AM	70.6							
7:00 AM	72.1							
8:00 AM	70.3							
9:00 AM	70.9							
10:00 AM	71.5							
11:00 AM	71.2							
Noon	71.3							
1:00 PM	71.1							
2:00 PM	70.7							
3:00 PM	71.6							
4:00 PM	71.3							
5:00 PM	70.7							
6:00 PM	69.2							
7:00 PM	68.0							
8:00 PM	67.8							
9:00 PM	65.8							
10:00 PM	63.8							
11:00 PM	61.0							



Ldn	72.8
Worst Hour Leq	72.1
Lowest Hour LEQ	58.7
11-hour Leq	71.2

Ldn/CNEL Calculation Spreadsheet

Project:	PG&E, Tiger Creek Spillway		Date:	6/22/2023	Analyst:	Schumaker, N		
Location:	LT-5							
Time	Thursday 6/22/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	60.0	69.6	73.1	73.4	72.6	0.5	0.4	Evening
1:00 AM	57.7		1.9	2.2				Night
2:00 AM	60.1							
3:00 AM	58.9							
4:00 AM	65.4							
5:00 AM	68.1							
6:00 AM	70.6							
7:00 AM	71.2							
8:00 AM	71.1							
9:00 AM	70.5							
10:00 AM	71.2							
11:00 AM	72.6							
Noon	72.5							
1:00 PM	71.9							
2:00 PM	71.2							
3:00 PM	72.1							
4:00 PM	71.6							
5:00 PM	71.5							
6:00 PM	70.3							
7:00 PM	69.3							
8:00 PM	68.2							
9:00 PM	67.1							
10:00 PM	63.9							
11:00 PM	63.3							

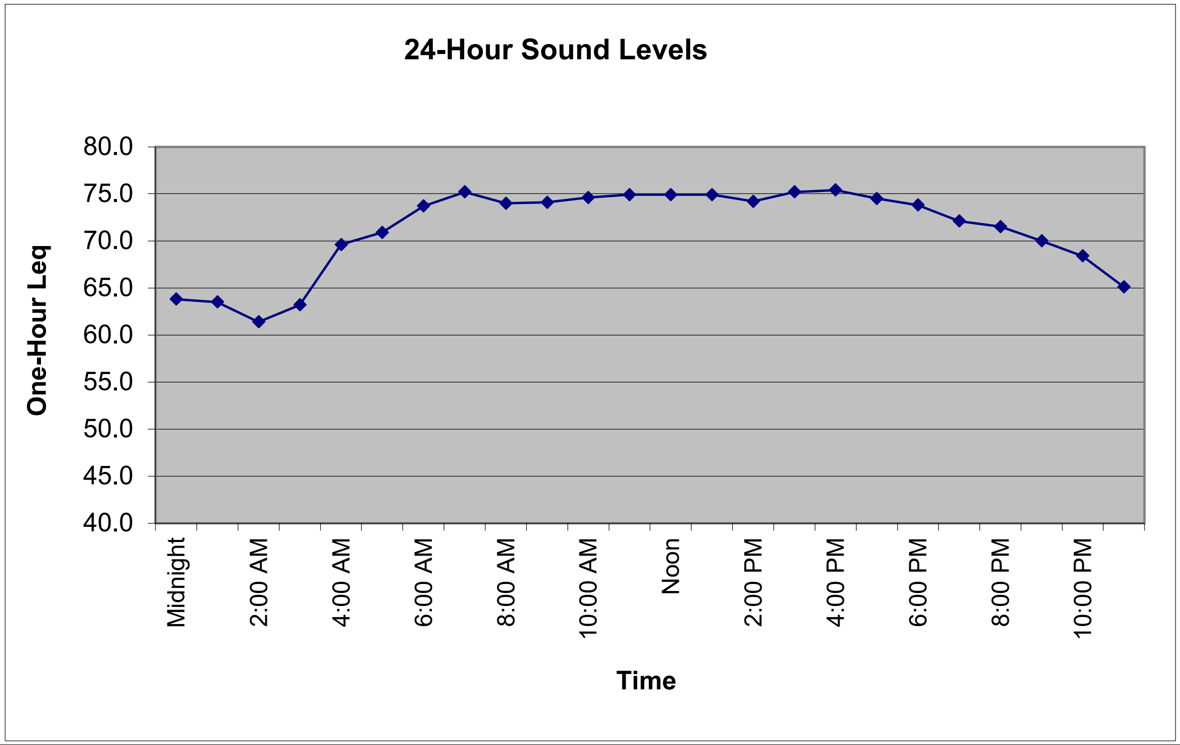


Ldn	73.1
Worst Hour Leq	72.6
Lowest Hour LEQ	57.7
11-hour Leq	71.6

Ldn/CNEL Calculation Spreadsheet

Project: PG&E, Tiger Creek Spillway Date: 6/21/2023 Analyst: Schumaker, N
Location: LT-6

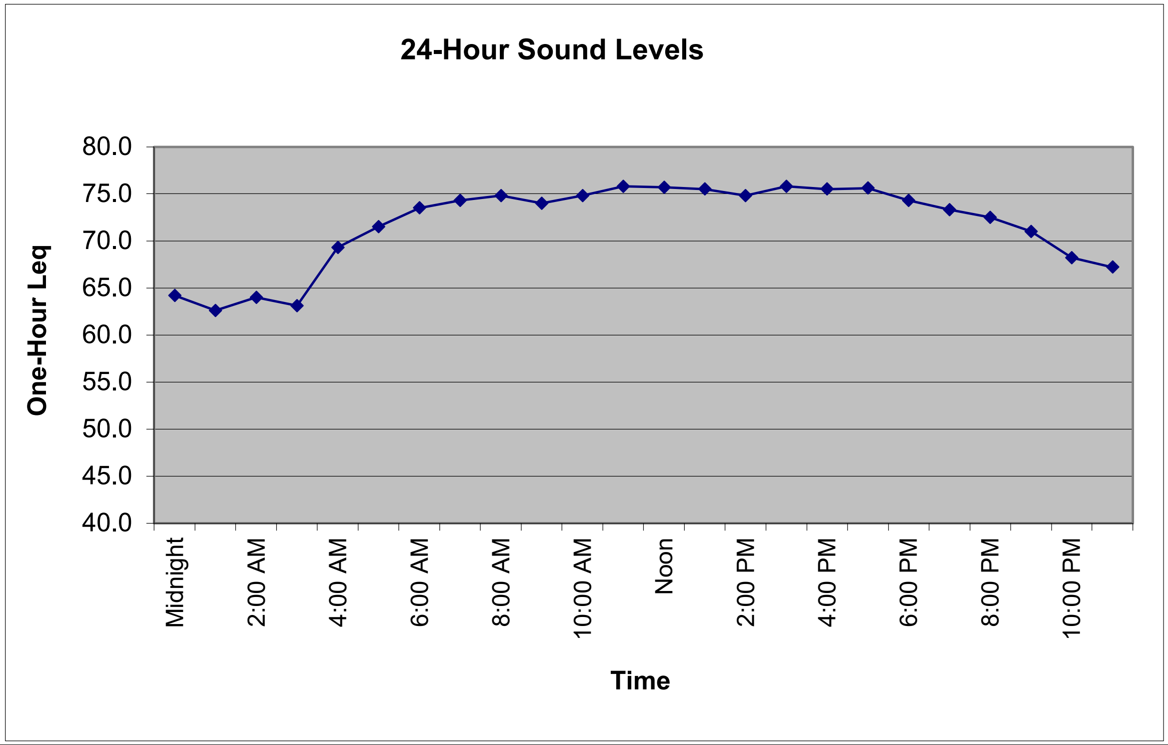
Time	Wednesday 6/21/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	63.8	72.8	76.3	76.7	75.4	0.9	0.4	Evening
1:00 AM	63.5		1.1	1.5				Night
2:00 AM	61.4							
3:00 AM	63.2							
4:00 AM	69.6							
5:00 AM	70.9							
6:00 AM	73.7							
7:00 AM	75.2							
8:00 AM	74.0							
9:00 AM	74.1							
10:00 AM	74.6							
11:00 AM	74.9							
Noon	74.9							
1:00 PM	74.9							
2:00 PM	74.2							
3:00 PM	75.2							
4:00 PM	75.4							
5:00 PM	74.5							
6:00 PM	73.8							
7:00 PM	72.1							
8:00 PM	71.5							
9:00 PM	70.0							
10:00 PM	68.4							
11:00 PM	65.1							



Ldn	76.3
Worst Hour Leq	75.4
Lowest Hour LEQ	61.4
11-hour Leq	74.7

Ldn/CNEL Calculation Spreadsheet

Project:	PG&E, Tiger Creek Spillway		Date:	6/22/2023	Analyst:	Schumaker, N		
Location:	LT-6							
Time	Thursday 6/22/2023	Leq(24)	Ldn	CNEL	Worst Hour Leq	Ldn minus Worst Hour Leq	CNEL minus Ldn	Day
Midnight	64.2	73.3	76.6	77.0	75.8	0.8	0.4	Evening
1:00 AM	62.6		2.3	2.7				Night
2:00 AM	64.0							
3:00 AM	63.1							
4:00 AM	69.3							
5:00 AM	71.5							
6:00 AM	73.5							
7:00 AM	74.3							
8:00 AM	74.8							
9:00 AM	74.0							
10:00 AM	74.8							
11:00 AM	75.8							
Noon	75.7							
1:00 PM	75.5							
2:00 PM	74.8							
3:00 PM	75.8							
4:00 PM	75.5							
5:00 PM	75.6							
6:00 PM	74.3							
7:00 PM	73.3							
8:00 PM	72.5							
9:00 PM	71.0							
10:00 PM	68.2							
11:00 PM	67.2							



Ldn	76.6
Worst Hour Leq	75.8
Lowest Hour LEQ	62.6
11-hour Leq	75.2

Number	Start Date	Start Time	Duration	LAeq	LASmax	LASmin	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	6/20/2023	11:27:00 AM	0:33:00	57.6	80.7	30.7	70.7	68.2	63	59.3	57.3	44.9	37	31.8	31.4	31
2	6/20/2023	12:00:02 PM	0:59:58	44.8	65.4	30.4	57.5	54.5	48.9	46.2	45.1	39.8	35.9	31.7	31.1	30.5
3	6/20/2023	1:00:02 PM	0:59:58	48	70.7	31.3	60	57.8	53.8	50.5	48.7	42.1	38.5	34	32.9	31.7
4	6/20/2023	2:00:02 PM	0:59:58	52.6	70.7	33.1	65.8	63.3	58.9	56.3	54.9	47.1	41.8	35.4	34.5	33.7
5	6/20/2023	3:00:02 PM	0:59:58	45.5	63.9	31.3	57	54.8	52.1	50.1	49.2	43	38.4	33.2	32.6	31.7
6	6/20/2023	4:00:02 PM	0:59:58	44.6	60.7	30.8	56.4	54.6	51.1	48.8	47.6	41.7	37.8	33.3	32.2	31.2
7	6/20/2023	5:00:02 PM	0:59:58	42.4	62.8	30.7	54.6	51.1	47.2	44.8	43.7	38.2	34.6	31.8	31.4	30.9
8	6/20/2023	6:00:02 PM	0:59:58	35.4	54.1	30.1	44.3	42.4	39.3	37.8	37.3	35.2	33.5	31.1	30.7	30.3
9	6/20/2023	7:00:02 PM	0:59:58	35.2	52.6	30	44.6	43.1	40.7	38.7	37.6	33.6	31.7	30.4	30.2	30.1
10	6/20/2023	8:00:02 PM	0:59:58	33.2	44.4	30	41.3	40.4	38.1	36.5	35.7	32.8	31	30.4	30.4	30.2
11	6/20/2023	9:00:02 PM	0:59:58	30.8	35.2	30.3	31.5	31.4	31.2	31.2	31.2	31.1	30.8	30.4	30.4	30.3
12	6/20/2023	10:00:02 PM	0:59:58	33.3	47.9	30.8	43.9	42	34.6	33.2	32.9	31.7	31.3	31	31	30.9
13	6/20/2023	11:00:02 PM	0:59:58	33.9	48	32.2	38	36.9	36.2	35.6	35.3	33.9	33.3	32.6	32.5	32.4
14	6/21/2023	12:00:02 AM	0:59:58	36.1	42.4	33.6	40.8	39.9	38.5	37.6	37.4	36.5	35.7	34.5	34.3	33.9
15	6/21/2023	1:00:02 AM	0:59:58	35.5	41.1	33.6	38	37.7	37.1	36.8	36.6	35.9	35.4	34.2	34.1	33.9
16	6/21/2023	2:00:02 AM	0:59:58	36.5	43.2	34.2	39.5	39.1	38.3	37.9	37.8	37	36.1	35	34.8	34.5
17	6/21/2023	3:00:02 AM	0:59:58	36.7	47.7	34.4	40.2	39	38.3	38	37.8	37	36.3	35.3	35.1	34.8
18	6/21/2023	4:00:02 AM	0:59:58	35.7	47	34.2	38.6	37.6	36.7	36.4	36.3	35.9	35.5	35	34.8	34.5
19	6/21/2023	5:00:02 AM	0:59:58	44.9	64.2	34	51.1	50.6	49.8	49.3	49	47.2	40.1	35.2	34.9	34.4
20	6/21/2023	6:00:02 AM	0:59:58	36.3	50.2	33.3	44	41.9	39.1	37.9	37.4	35.8	35.2	34.3	34	33.6
21	6/21/2023	7:00:02 AM	0:59:58	35.7	52.9	30.9	42.6	41.5	39.6	38.7	38.2	36.1	34.3	32	31.6	31.2
22	6/21/2023	8:00:02 AM	0:59:58	36.6	56.7	29.7	49.4	46.6	40	38.1	37.4	33.8	31.5	30.3	30.2	30
23	6/21/2023	9:00:02 AM	0:59:58	34.7	50.4	29.7	44.1	42.8	40.7	39.3	38.2	32.5	30.9	30.2	30.1	30
24	6/21/2023	10:00:02 AM	0:59:58	38.1	57.9	30.2	51.7	46.9	41.7	38.8	37.8	34.1	32.3	31.1	30.9	30.6
25	6/21/2023	11:00:02 AM	0:59:58	42	61.7	30.6	54.5	52.4	47.9	45.5	44.1	37.3	34.4	31.9	31.6	31.1
26	6/21/2023	12:00:02 PM	0:59:58	41.8	66.1	30	53.8	51	46.1	43.4	41.9	36.3	33.2	31.1	30.8	30.5
27	6/21/2023	1:00:02 PM	0:59:58	44.7	65.8	30.3	56.7	54.6	51.1	48.2	46.5	39.2	34.9	31.5	31.2	30.6
28	6/21/2023	2:00:02 PM	0:59:58	46	63.6	30.8	58.6	56.6	51.9	49.1	47.7	42.9	38.7	33.3	32.5	31.2
29	6/21/2023	3:00:02 PM	0:59:58	45.7	69.8	30.6	58.2	55.6	51.2	47.8	46.2	40.6	37.5	33.2	32.2	31.2
30	6/21/2023	4:00:02 PM	0:59:58	48.1	71.2	31.8	60	57.4	53.2	50.7	49.3	42.8	37.6	33.2	32.7	32.1
31	6/21/2023	5:00:02 PM	0:59:58	45.2	65	30.7	58.6	55.8	50.9	48.5	47	40.3	36	32.7	32.2	31.5
32	6/21/2023	6:00:02 PM	0:59:58	36.5	61	30.2	44	41.9	40	39.3	39	36.7	33.6	31.2	30.9	30.4
33	6/21/2023	7:00:02 PM	0:59:58	38.8	58.1	30	52.7	47.6	40.9	39.4	38.8	36.1	33.8	31	30.6	30.1
34	6/21/2023	8:00:02 PM	0:59:58	36.9	53.8	30	48.7	47	41.7	39.5	38.5	34.9	32.3	30.5	30.5	30.2
35	6/21/2023	9:00:02 PM	0:59:58	31.2	40.3	30.4	34.8	32.9	31.5	31.4	31.3	31.2	31	30.7	30.6	30.5
36	6/21/2023	10:00:02 PM	0:59:58	32.9	50.6	30.4	44.1	41	32.4	31.6	31.5	31.3	31.1	30.8	30.7	30.6
37	6/21/2023	11:00:02 PM	0:59:58	33.5	49.2	31.1	43	37.6	35.4	34.3	33.8	32.7	32.2	31.5	31.4	31.3
38	6/22/2023	12:00:02 AM	0:59:58	32.8	41.3	31.5	36.8	36.1	34.7	34.1	33.9	32.8	32.4	31.9	31.8	31.7
39	6/22/2023	1:00:02 AM	0:59:58	33.7	40.2	32	37.6	36.7	35.8	35.4	35.1	34	33.1	32.5	32.4	32.2
40	6/22/2023	2:00:02 AM	0:59:58	34.9	43.6	32.3	41.2	40.2	38.5	37.4	37	34.7	33.7	32.8	32.7	32.5
41	6/22/2023	3:00:02 AM	0:59:58	36.1	44.7	33	41.6	40.3	38.7	38	37.5	36.3	35.6	33.9	33.6	33.3
42	6/22/2023	4:00:02 AM	0:59:58	38.3	50.3	35.3	45.9	44.9	40.8	40	39.6	38.1	37.2	36.2	36	35.7
43	6/22/2023	5:00:02 AM	0:59:58	45.7	55.4	35.5	52.7	52	50.6	49.7	49.3	47.4	43.8	36.9	36.5	36
44	6/22/2023	6:00:02 AM	0:59:58	39.8	61	35	47.8	46.1	43.1	41.8	41.1	38.9	37.7	36.3	36	35.6
45	6/22/2023	7:00:02 AM	0:59:58	37.9	57.6	32.9	43.3	41.8	40.2	39.5	39.1	37.9	37	34.3	33.8	33.2
46	6/22/2023	8:00:02 AM	0:59:58	34.2	53.8	29.8	42.2	40.7	38.5	36.9	36	33.6	32.1	30.6	30.4	30.1
47	6/22/2023	9:00:02 AM	0:59:58	36.1	65	29.6	43.2	41.7	38.8	36.6	35.7	32.5	30.9	30	29.9	29.7
48	6/22/2023	10:00:02 AM	0:59:58	36.2	54.3	29.9	47.1	44.4	40.7	39	38.2	34.9	32.8	30.3	30.1	30
49	6/22/2023	11:00:02 AM	0:59:58	39.8	57.8	30.1	50.3	48.7	45.7	44.2	43.3	38.6	34.7	31.8	31.3	30.6
50	6/22/2023	12:00:02 PM	0:59:58	44.9	61.1	30.6	57.2	55.5	51.6	49	47.8	41.3	37.7	33.3	32.5	31.7
51	6/22/2023	1:00:02 PM	0:59:58	43.3	62.4	31.2	56.4	53.8	48.3	45.7	44.4	38.7	36	33.4	33	31.9
52	6/22/2023	2:00:02 PM	0:59:58	44.5	66.4	31	56.2	54.2	50.1	47.8	46.6	41.7	37.4	34.3	33.7	31.6
53	6/22/2023	3:00:02 PM	0:59:58	47	66.1	31.7	60	57.4	52.5	49.8	48.5	43.1	39.8	34.9	33.2	32.2
54	6/22/2023	4:00:02 PM	0:59:58	47.4	66.1	30.4	60	58	54	51.2	49.4	42.4	37.7	32	31.5	30.8
55	6/22/2023	5:00:02 PM	0:59:58	43.7	61.1	31.2	56.4	54.2	49.7	46.7	45.2	40.2	37	32.9	32.2	31.5
56	6/22/2023	6:00:02 PM	0:59:58	37.6	47.1	31.5	43.4	42.4	41.3	40.7	40.3	38.8	36.5	33.4	32.6	31.7
57	6/22/2023	7:00:02 PM	0:59:58	36.8	54.7	29.8	48.4	46.6	42.3	39.2	38.2	34.6	32.2	30.3	30.1	29.9
58	6/22/2023	8:00:02 PM	0:59:58	34.5	46.9	29.8	42.6	41.6	39.9	38.6	37.9	34.6	31.7	30	30	29.9
59	6/22/2023	9:00:02 PM	0:59:58	30.1	31.1	29.8	30.4	30.3	30.2	30.2	30.2	30.1	30	29.9	29.9	29.9
60	6/22/2023	10:00:02 PM	0:59:58	31.8	44.9	29.9	40.6	39.5	36.5	32.2	31	30.3	30.2	30	30	29.9
61	6/22/2023	11:00:02 PM	0:59:58	31.8	45.5	30.1	41.3	37.2	31.9	31.7	31.5	31.1	30.8	30.4	30.3	30.2
62	6/23/2023	12:00:02 AM	0:59:58	33.6	52.4	30.4	46.3	40.7	31.8	31.3	31.2	31	30.9	30.7	30.6	30.5
63	6/23/2023	1:00:02 AM	0:59:58	31.2	36.5	30.6	33.8	32.8	32	31.6	31.5	31.2	31.1	30.8	30.8	30.7
64	6/23/2023	2:00:02 AM	0:59:58	31	34	30.6	31.4	31.4	31.3	31.2	31.2	31.1	30.9	30.7	30.7	30.6
65	6/23/2023	3:00:02 AM	0:59:58	31.2	36.1	30.6	31.8	31.8	31.6	31.6	31.6	31.4	31.1	30.8	30.7	30.7
66	6/23/2023	4:00:02 AM	0:59:58	32.1	38.9	31.3	34.8	34.1	33.3	32.8	32.6	32.1	31.9	31.6	31.5	31.4
67	6/23/2023	5:00:02 AM	0:59:58	43.7	57.8	32.2	51.5	50.5	48.6	47.7	47.2	45	41.1	34.3	33.4	32.7
68	6/23/2023	6:00:02 AM	0:59:58	34.8	50	31.4	44.9	40.7	37.2	36.2	35.8	34.2	32.9	31.9	31.8	31.6

69	6/23/2023	7:00:02 AM	0:59:58	36.6	47.5	30.5	45.2	44.4	42.8	41.6	40.9	35.5	32.7	31.6	31.2	30.8
70	6/23/2023	8:00:02 AM	0:59:58	37.8	57.1	30.1	50.1	47.9	42.8	40.2	39.1	34.7	32.3	30.7	30.5	30.3
71	6/23/2023	9:00:02 AM	0:59:58	37.9	54.7	30.5	47.9	46.1	43	41.5	40.6	36.5	34.5	32.6	32.2	31.3
72	6/23/2023	10:00:01 AM	0:56:00	56.4	87.3	30.2	66.2	57.8	49.4	44.5	43.4	37.9	35.2	33.3	32.7	31.9

Number	Start Date	Start Time	End Time	Duration	LAeq	LASmax	LASmin	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	6/20/2023	10:58:24 AM	11:00:00 AM	0:01:36	66.4	81.5	36.9	80.6	77.7	72.3	69	67.5	61.4	55.8	42.7	41.5	38.1
2	6/20/2023	11:00:02 AM	12:00:00 PM	0:59:58	56.1	82.5	45.2	68.8	65.1	57.4	48.8	47.9	46.6	46.1	45.7	45.6	45.4
3	6/20/2023	12:00:02 PM	1:00:00 PM	0:59:58	46.3	52.7	45.1	49.6	48.6	47.7	47.2	47	46.4	46.1	45.6	45.5	45.4
4	6/20/2023	1:00:02 PM	2:00:00 PM	0:59:58	47.6	57.5	45.9	53	51.3	49.8	49	48.7	47.6	46.9	46.3	46.2	46.1
5	6/20/2023	2:00:02 PM	3:00:00 PM	0:59:58	47.1	60.8	45.8	52.4	50.5	48.7	48.1	47.9	46.9	46.5	46.1	46.1	46
6	6/20/2023	3:00:02 PM	4:00:00 PM	0:59:58	46.9	57.5	45.6	53.3	51.2	48.6	47.6	47.3	46.6	46.3	46	45.9	45.8
7	6/20/2023	4:00:02 PM	5:00:00 PM	0:59:58	54.8	78.8	45.7	66.9	57.3	51.3	48.9	48.3	47	46.5	46	46	45.9
8	6/20/2023	5:00:02 PM	6:00:00 PM	0:59:58	46.3	51.2	45.6	47.6	47.3	46.8	46.6	46.5	46.3	46.2	46	45.9	45.8
9	6/20/2023	6:00:02 PM	7:00:00 PM	0:59:58	46.6	54.7	46	48	47.5	46.9	46.8	46.8	46.7	46.5	46.3	46.3	46.2
10	6/20/2023	7:00:02 PM	8:00:00 PM	0:59:58	47	50.6	46.4	48.5	48	47.4	47.2	47.1	47	46.9	46.7	46.7	46.6
11	6/20/2023	8:00:02 PM	9:00:00 PM	0:59:58	47.7	59.9	46.8	54.4	49.5	48	47.5	47.4	47.3	47.2	47.1	47	46.9
12	6/20/2023	9:00:02 PM	10:00:00 PM	0:59:58	47.4	48.7	47	47.6	47.6	47.5	47.5	47.5	47.4	47.4	47.2	47.2	47.2
13	6/20/2023	10:00:02 PM	11:00:00 PM	0:59:58	47.6	52.6	47.2	48.8	48.3	47.7	47.7	47.6	47.6	47.5	47.4	47.4	47.3
14	6/20/2023	11:00:02 PM	12:00:00 AM	0:59:58	47.7	48.4	47.3	47.8	47.8	47.8	47.8	47.7	47.7	47.6	47.5	47.5	47.5
15	6/21/2023	12:00:02 AM	1:00:00 AM	0:59:58	47.8	48.1	47.5	47.9	47.9	47.9	47.9	47.8	47.8	47.7	47.7	47.6	47.6
16	6/21/2023	1:00:02 AM	2:00:00 AM	0:59:58	47.9	48.2	47.5	48	48	48	48	48	47.9	47.9	47.8	47.7	47.7
17	6/21/2023	2:00:02 AM	3:00:00 AM	0:59:58	47.9	48.8	47.6	48.1	48.1	48.1	48	48	48	47.9	47.8	47.8	47.8
18	6/21/2023	3:00:02 AM	4:00:00 AM	0:59:58	48	48.3	47.7	48.2	48.1	48.1	48.1	48.1	48	48	47.9	47.9	47.8
19	6/21/2023	4:00:02 AM	5:00:00 AM	0:59:58	48.1	49.2	47.7	48.9	48.8	48.7	48.6	48.5	48.1	48.1	47.9	47.9	47.9
20	6/21/2023	5:00:02 AM	6:00:00 AM	0:59:58	50.8	67.5	47.9	62.6	57.3	51.8	50.8	50.3	49.2	48.7	48.1	48.1	48
21	6/21/2023	6:00:02 AM	7:00:00 AM	0:59:58	48.2	53.1	47.8	49.9	49.3	48.6	48.4	48.3	48.2	48.1	48	48	48
22	6/21/2023	7:00:02 AM	8:00:00 AM	0:59:58	48.5	56.6	47.9	52.1	51.1	49.7	49.1	48.8	48.4	48.2	48.1	48.1	48
23	6/21/2023	8:00:02 AM	9:00:00 AM	0:59:58	49.5	62.6	47.7	57.1	55.3	53	51.9	51.3	48.7	48.1	47.9	47.8	47.8
24	6/21/2023	9:00:02 AM	10:00:00 AM	0:59:58	48.1	69.9	46.7	51.6	50.5	49.2	48.7	48.5	47.9	47.7	47.1	47	46.8
25	6/21/2023	10:00:02 AM	11:00:00 AM	0:59:58	46.9	55.1	46.1	50.7	49.4	48	47.4	47.2	46.8	46.6	46.4	46.3	46.2
26	6/21/2023	11:00:02 AM	12:00:00 PM	0:59:58	47	63.7	45.2	53.4	50.2	47.9	47.2	47	46.4	46.2	45.7	45.6	45.4
27	6/21/2023	12:00:02 PM	1:00:00 PM	0:59:58	45.8	53.7	44.6	48.9	48	47.1	46.6	46.3	45.8	45.5	45.2	45.1	44.9
28	6/21/2023	1:00:02 PM	2:00:00 PM	0:59:58	46.1	59.4	45	49.6	49	47.8	47.3	47	46.2	45.6	45.3	45.2	45.1
29	6/21/2023	2:00:02 PM	3:00:00 PM	0:59:58	46.6	55	45.3	48.9	48.3	47.7	47.4	47.3	46.8	46.4	45.8	45.7	45.6
30	6/21/2023	3:00:02 PM	4:00:00 PM	0:59:58	47	64.2	45.5	51	49.2	48	47.6	47.4	46.8	46.4	45.9	45.8	45.7
31	6/21/2023	4:00:02 PM	5:00:00 PM	0:59:58	46.4	55.2	45.6	49.8	48.9	47.5	47.1	47	46.4	46.1	45.9	45.8	45.8
32	6/21/2023	5:00:02 PM	6:00:00 PM	0:59:58	46.3	51.9	45.7	48.8	47.7	47	46.7	46.6	46.3	46.2	46	46	45.9
33	6/21/2023	6:00:02 PM	7:00:00 PM	0:59:58	46.6	52.1	45.9	48	47.4	46.9	46.8	46.8	46.7	46.5	46.3	46.1	46
34	6/21/2023	7:00:02 PM	8:00:00 PM	0:59:58	47.2	58.2	46.4	52.7	49.2	47.4	47.1	47.1	47	46.9	46.7	46.7	46.6
35	6/21/2023	8:00:02 PM	9:00:00 PM	0:59:58	47.2	52.6	46.8	48.4	47.8	47.4	47.3	47.3	47.2	47.1	47	46.9	46.9
36	6/21/2023	9:00:02 PM	10:00:00 PM	0:59:58	47.3	48.1	47	47.5	47.4	47.4	47.4	47.3	47.3	47.2	47.2	47.1	47.1
37	6/21/2023	10:00:02 PM	11:00:00 PM	0:59:58	47.4	54.2	47	48.8	48.2	47.5	47.5	47.5	47.4	47.4	47.3	47.2	47.2
38	6/21/2023	11:00:02 PM	12:00:00 AM	0:59:58	47.5	50.7	47.2	48.4	47.7	47.6	47.6	47.6	47.6	47.5	47.4	47.4	47.3
39	6/22/2023	12:00:02 AM	1:00:00 AM	0:59:58	47.6	47.9	47.3	47.8	47.7	47.7	47.7	47.7	47.6	47.6	47.5	47.4	47.4
40	6/22/2023	1:00:02 AM	2:00:00 AM	0:59:58	47.7	48	47.4	47.8	47.8	47.8	47.8	47.8	47.7	47.7	47.6	47.5	47.5
41	6/22/2023	2:00:02 AM	3:00:00 AM	0:59:58	47.8	48.2	47.4	47.9	47.9	47.9	47.9	47.8	47.8	47.7	47.7	47.6	47.6
42	6/22/2023	3:00:02 AM	4:00:00 AM	0:59:58	47.9	48.2	47.6	48	48	48	48	47.9	47.9	47.8	47.8	47.7	47.7
43	6/22/2023	4:00:02 AM	5:00:00 AM	0:59:58	48	51.9	47.6	49	48.8	48.5	48.4	48.3	48	47.9	47.8	47.8	47.7
44	6/22/2023	5:00:02 AM	6:00:00 AM	0:59:58	48.9	53.6	47.8	52.1	51.8	51.1	50.5	50.1	49	48.4	48.1	48.1	48
45	6/22/2023	6:00:02 AM	7:00:00 AM	0:59:58	48.5	61.3	47.8	52.7	50.7	49.2	48.8	48.7	48.3	48.2	48	48	47.9
46	6/22/2023	7:00:02 AM	8:00:00 AM	0:59:58	48.4	57.5	47.8	51.4	49.7	49.1	48.8	48.7	48.4	48.2	48	48	47.9
47	6/22/2023	8:00:02 AM	9:00:00 AM	0:59:58	48.1	55.6	47.5	50	49.3	48.8	48.5	48.4	48.1	48	47.7	47.7	47.6
48	6/22/2023	9:00:02 AM	10:00:00 AM	0:59:58	47.7	56.7	46.8	51.4	49.9	48.4	48.1	48	47.7	47.5	47.2	47.1	46.9
49	6/22/2023	10:00:02 AM	11:00:00 AM	0:59:58	47.1	54.5	46.5	49	48.2	47.4	47.2	47.2	47.1	47	46.8	46.7	46.6
50	6/22/2023	11:00:02 AM	12:00:00 PM	0:59:58	47.1	60.6	46.1	51.2	49.6	47.9	47.4	47.3	47	46.7	46.4	46.3	46.2
51	6/22/2023	12:00:02 PM	1:00:00 PM	0:59:58	47	65.7	45.7	50.6	49.6	48.2	47.6	47.4	46.8	46.4	46.1	46	45.9
52	6/22/2023	1:00:02 PM	2:00:00 PM	0:59:58	46.5	54	45.5	49.2	48.7	47.9	47.5	47.3	46.6	46.2	45.9	45.8	45.7
53	6/22/2023	2:00:02 PM	3:00:00 PM	0:59:58	47	59.5	45.4	51.2	50.2	49.2	48.5	48.1	47	46.3	45.8	45.8	45.6
54	6/22/2023	3:00:02 PM	4:00:00 PM	0:59:58	47.5	55.2	46	51.5	50.4	49.8	49.1	48.8	47.7	46.9	46.3	46.3	46.1
55	6/22/2023	4:00:02 PM	5:00:00 PM	0:59:58	46.9	52.8	46	50.5	49.7	48.4	47.9	47.6	46.8	46.5	46.3	46.2	46.1
56	6/22/2023	5:00:02 PM	6:00:00 PM	0:59:58	47	55.8	46.2	51.9	49.5	47.7	47.2	47.1	46.8	46.6	46.4	46.4	46.3
57	6/22/2023	6:00:02 PM	7:00:00 PM	0:59:58	47.1	59.1	46.3	52.3	48.3	47.3	47.1	47.1	46.9	46.8	46.7	46.6	46.5
58	6/22/2023	7:00:02 PM	8:00:00 PM	0:59:58	47.3	55.7	46.6	51.7	50.7	48.5	47.8	47.5	47.1	47	46.8	46.8	46.7
59	6/22/2023	8:00:02 PM	9:00:00 PM	0:59:58	47.5	55.8	46.9	52.3	49.3	47.8	47.6	47.5	47.4	47.3	47.1	47.1	47
60	6/22/2023	9:00:02 PM	10:00:00 PM	0:59:58	47.4	47.7	47.1	47.6	47.6	47.5	47.5	47.5	47.4	47.4	47.3	47.3	47.2
61	6/22/2023	10:00:02 PM	11:00:00 PM	0:59:58	47.6	48.8	47.2	48.2	48.1	47.8	47.7	47.7	47.6	47.5	47.4	47.4	47.4
62	6/22/2023	11:00:02 PM	12:00:00 AM	0:59:58	47.7	49.8	47.3	48.3	48	47.8	47.8	47.8	47.7	47.7	47.6	47.5	47.5
63	6/23/2023	12:00:02 AM	1:00:00 AM	0:59:58	47.9	54.2	47.5	50.5	48.5	47.9	47.9	47.9	47.8	47.8	47.7	47.6	47.6
64	6/23/2023	1:00:02 AM	2:00:00 AM	0:59:58	47.8	48.1	47.5	48	48	47.9	47.9	47.9	47.9	47.8	47.7	47.7	47.6
65	6/23/2023	2:00:02 AM	3:00:00 AM	0:59:58	47.9	50	47.6	48	48	48	48	48	47.9	47.9	47.8	47.7	47.7
66	6/23/2023	3:00:02 AM	4:00:00 AM	0:59:58	47.9	48.2	47.7	48.1	48.1	48.1	48	48	48	47.9	47.8	47.8	47.8
67	6/23/2023	4:00:02 AM	5:00:00 AM	0:59:58	48.2	49.8	47.8	49.3	49.1	48.9	48.8	48.7	48.1	48	47.9	47.9	47.8
68	6/23/2023	5:00:02 AM	6:00:00 AM	0:59:58	49.4	55.2	47.9	52.9	52.5	51.6	51.1	50.8	49.7	48.9	48.3	48.2	48.1
69	6/23/2023	6:00:02 AM	7:00:00 AM	0:59:58	48.3	53	47.9	49.7	49.2	48.7	48.5	48.4	48.3	48.2	48.1	48.1	48
70	6/23/2023	7:00:02 AM	8:00:00 AM	0:59:58	48.4	54.2	47.8	51	50.2	49.2	48.8	48.7	48.4	48.2	48	48	48
71	6/23/2023	8:00:02 AM	9:00:00 AM	0:59:58	48.3	55.7	47.5	51.8	50.7	49.5	49	48.8	48.2	48	47.7	47.7	47.6

72	6/23/2023	9:00:02 AM	10:00:00 AM	0:59:58	47.7	50.8	46.9	49	48.8	48.5	48.3	48.2	47.8	47.6	47.3	47.2	47.1
73	6/23/2023	11:02:18 AM	11:14:42 AM	0:12:24	47.7	54.7	46.9	51.9	51.2	49.4	48.4	48.1	47.4	47.2	47.1	47	47
74	6/23/2023	11:14:42 AM	11:14:49 AM	0:00:07	50.2	56	43	55.9	55.8	55.2	55.1	54.9	53.3	48.3	44.8	43.9	43.1
75	6/23/2023	11:14:50 AM	11:14:53 AM	0:00:03	42.7	47.5	40.6	47.5	47.5	47.1	46.9	46.7	45.1	42.8	40.9	40.8	40.7

Rec 1 to 71 Slow Response dBA weighting 1.0 dB resolution stats

Date hh:mm:ss	LeqPeriod	Leq	Lmax	Lmin	L1%	L5%	L10%	L50%	L90%	L95%	L99%	L10%	L8%	L25%
6/20/2023 14:40	1.0 hour	63.2	91.5	35.3	76	61	49	38	35	35	35	49	51	42
6/20/2023 15:40	1.0 hour	55.1	83.9	35.3	60	44	42	37	35	35	35	42	43	38
6/20/2023 16:40	1.0 hour	38.9	56.6	35.3	48	42	40	35	35	35	35	40	41	38
6/20/2023 17:40	1.0 hour	44.4	76.7	35.3	50	40	38	35	35	35	35	38	38	36
6/20/2023 18:40	1.0 hour	38.5	58.3	35.3	47	41	39	35	35	35	35	39	40	36
6/20/2023 19:40	1.0 hour	43.2	68.1	35.3	55	45	41	35	35	35	35	41	42	37
6/20/2023 20:40	1.0 hour	38.7	48.2	35.3	42	40	40	38	35	35	35	40	40	40
6/20/2023 21:40	1.0 hour	38.5	54.5	35.3	41	40	40	37	35	35	35	40	40	40
6/20/2023 22:40	1.0 hour	38.3	48.1	35.3	42	40	40	38	35	35	35	40	40	39
6/20/2023 23:40	1.0 hour	37.7	51.2	35.3	44	39	38	35	35	35	35	38	39	38
6/21/2023 0:40	1.0 hour	36.6	39.4	35.3	38	38	38	35	35	35	35	38	38	37
6/21/2023 1:40	1.0 hour	36.6	44.8	35.3	40	38	38	35	35	35	35	38	38	36
6/21/2023 2:40	1.0 hour	36.4	39.4	35.3	38	38	37	35	35	35	35	37	38	35
6/21/2023 3:40	1.0 hour	54.3	85.6	35.3	56	42	40	35	35	35	35	40	40	37
6/21/2023 4:40	1.0 hour	57.1	86.9	35.3	64	47	45	39	35	35	35	45	45	42
6/21/2023 5:40	1.0 hour	63.2	88.9	35.3	75	63	52	45	38	38	35	52	54	46
6/21/2023 6:40	1.0 hour	57.4	86.1	35.3	67	55	48	40	38	37	36	48	51	42
6/21/2023 7:40	1.0 hour	52.7	79.3	35.3	66	55	50	40	36	35	35	50	51	45
6/21/2023 8:40	1.0 hour	59.9	85.1	35.3	70	60	54	40	35	35	35	54	56	43
6/21/2023 9:40	1.0 hour	54.5	85.7	35.3	59	49	47	38	35	35	35	47	47	41
6/21/2023 10:40	1.0 hour	58.9	87.3	35.3	68	52	46	39	36	35	35	46	48	42
6/21/2023 11:40	1.0 hour	57.1	88.1	35.3	58	48	46	40	35	35	35	46	47	43
6/21/2023 12:40	1.0 hour	55.7	84.5	35.3	62	47	44	38	35	35	35	44	45	40
6/21/2023 13:40	1.0 hour	52.8	80.7	35.3	63	50	46	39	35	35	35	46	47	42
6/21/2023 14:40	1.0 hour	57.5	85.6	35.3	64	51	46	39	37	35	35	46	47	42
6/21/2023 15:40	1.0 hour	50.4	73.4	35.3	63	53	49	38	35	35	35	49	50	41
6/21/2023 16:40	1.0 hour	40.5	55.3	35.3	50	46	43	36	35	35	35	43	44	38
6/21/2023 17:40	1.0 hour	53.7	69.9	35.3	64	59	57	44	35	35	35	57	58	53
6/21/2023 18:40	1.0 hour	56.4	67.7	43.8	61	59	58	55	51	49	46	58	59	57
6/21/2023 19:40	1.0 hour	52.6	64.5	35.3	59	57	55	52	35	35	35	55	56	54
6/21/2023 20:40	1.0 hour	41.4	47.5	35.3	44	43	43	41	35	35	35	43	43	43
6/21/2023 21:40	1.0 hour	43.2	47.9	35.3	45	44	44	43	40	38	35	44	44	43
6/21/2023 22:40	1.0 hour	41.8	46	35.3	44	44	43	42	35	35	35	43	43	43
6/21/2023 23:40	1.0 hour	39.5	44.4	35.3	43	42	42	38	35	35	35	42	42	41
6/22/2023 0:40	1.0 hour	38	42.1	35.3	41	40	40	35	35	35	35	40	40	39
6/22/2023 1:40	1.0 hour	37.8	41.9	35.3	40	40	40	37	35	35	35	40	40	39
6/22/2023 2:40	1.0 hour	36.9	42.2	35.3	40	39	38	35	35	35	35	38	38	38
6/22/2023 3:40	1.0 hour	53.6	84.1	35.3	55	46	44	39	35	35	35	44	45	42
6/22/2023 4:40	1.0 hour	60.3	89	35.3	67	49	46	42	38	37	35	46	47	44
6/22/2023 5:40	1.0 hour	62.3	88.1	35.3	72	59	50	45	38	38	37	50	53	46
6/22/2023 6:40	1.0 hour	59.8	85.6	35.3	71	58	51	41	36	35	35	51	54	44
6/22/2023 7:40	1.0 hour	53.7	72.3	35.3	66	58	55	46	38	37	36	55	55	52
6/22/2023 8:40	1.0 hour	60.4	87.2	35.3	69	57	50	40	35	35	35	50	52	43
6/22/2023 9:40	1.0 hour	59.6	88.4	35.3	66	56	51	38	35	35	35	51	53	42
6/22/2023 10:40	1.0 hour	59.8	88.4	35.4	68	59	55	47	43	41	38	55	56	49
6/22/2023 11:40	1.0 hour	58.9	87.8	39.7	64	60	57	48	43	42	41	57	58	51
6/22/2023 12:40	1.0 hour	57.2	88.6	35.3	60	52	48	38	36	35	35	48	50	41
6/22/2023 13:40	1.0 hour	53.6	80.6	35.3	62	57	54	45	38	37	35	54	55	48
6/22/2023 14:40	1.0 hour	56.7	84.2	39.9	61	55	52	47	44	43	42	52	53	49
6/22/2023 15:40	1.0 hour	52.2	70.1	38	62	57	54	48	45	44	41	54	55	51
6/22/2023 16:40	1.0 hour	48.1	66.2	35.3	62	53	48	38	35	35	35	48	49	44
6/22/2023 17:40	1.0 hour	38.4	53	35.3	46	41	39	36	35	35	35	39	40	38
6/22/2023 18:40	1.0 hour	51	74.9	35.3	64	46	41	35	35	35	35	41	43	37
6/22/2023 19:40	1.0 hour	36.6	47.9	35.3	42	38	38	35	35	35	35	38	38	35
6/22/2023 20:40	1.0 hour	42.8	48.4	35.3	45	45	44	42	38	37	35	44	45	44
6/22/2023 21:40	1.0 hour	44.4	47	35.3	46	45	45	44	41	36	35	45	45	45
6/22/2023 22:40	1.0 hour	42.8	55.5	35.3	45	45	44	42	37	35	35	44	44	44
6/22/2023 23:40	1.0 hour	41.5	45	35.3	44	43	43	41	35	35	35	43	43	42
6/23/2023 0:40	1.0 hour	40.4	53.6	35.3	46	42	42	40	35	35	35	42	42	41
6/23/2023 1:40	1.0 hour	38.3	53.5	35.3	44	41	40	37	35	35	35	40	40	38
6/23/2023 2:40	1.0 hour	36.9	41.5	35.3	40	39	38	35	35	35	35	38	39	38
6/23/2023 3:40	1.0 hour	53.6	84.9	35.3	56	44	43	35	35	35	35	43	44	38
6/23/2023 4:40	1.0 hour	55.6	86.3	35.3	57	46	45	39	35	35	35	45	45	43
6/23/2023 5:40	1.0 hour	62.9	88.7	37.5	72	61	55	45	39	38	38	55	56	48
6/23/2023 6:40	1.0 hour	58.4	84.4	35.3	69	58	51	41	35	35	35	51	54	44
6/23/2023 7:40	1.0 hour	49.1	70.4	35.3	63	52	48	38	35	35	35	48	49	43
6/23/2023 8:40	1.0 hour	51.7	75.6	35.3	62	56	53	38	35	35	35	53	54	47
6/23/2023 9:40	1.0 hour	55.3	84.3	35.3	62	52	50	42	36	35	35	50	51	46
6/23/2023 10:40	1.0 hour	57.5	87.2	35.3	62	56	55	46	38	38	35	55	56	52
6/23/2023 11:40	1.0 hour	50.2	76.2	38.1	63	54	50	42	40	39	38	50	51	46
6/23/2023 12:40	9.6 min	71.8	89	39.7	84	79	73	49	44	43	41	73	76	59

Rec 1 to 69	Slow Response		dBA weighting		1.0 dB resolution stats									
Date hh:mm:ss	LeqPeriod	Leq	Lmax	Lmin	L1%	L5%	L10%	L50%	L90%	L95%	L99%	L10%	L8%	L25%
6/20/2023 15:09	1.0 hour	64.9	90.2	35.8	78	68	61	39	35	35	35	61	63	50
6/20/2023 16:09	1.0 hour	54.5	84.3	35.8	64	56	54	38	35	35	35	54	54	44
6/20/2023 17:09	1.0 hour	55.5	80.9	35.8	69	56	48	38	35	35	35	48	50	40
6/20/2023 18:09	1.0 hour	52.7	83.9	35.8	53	42	39	35	35	35	35	39	40	37
6/20/2023 19:09	1.0 hour	48	71.6	35.8	62	48	42	35	35	35	35	42	44	38
6/20/2023 20:09	1.0 hour	47.2	77.4	35.8	50	39	38	35	35	35	35	38	38	38
6/20/2023 21:09	1.0 hour	45.6	73.7	36.7	49	40	38	38	38	38	37	38	39	38
6/20/2023 22:09	1.0 hour	44.5	74.8	38.6	44	40	40	38	38	38	38	40	40	39
6/20/2023 23:09	1.0 hour	42.8	70.8	38.6	44	41	40	38	38	38	38	40	40	40
6/21/2023 0:09	1.0 hour	40	50.5	38.7	43	42	41	39	38	38	38	41	41	40
6/21/2023 1:09	1.0 hour	39.5	46.5	38.5	42	41	40	38	38	38	38	40	40	40
6/21/2023 2:09	1.0 hour	39.4	45.1	38.5	43	41	40	38	38	38	38	40	40	39
6/21/2023 3:09	1.0 hour	45.2	74.6	38.7	43	41	40	38	38	38	38	40	40	39
6/21/2023 4:09	1.0 hour	39.8	46	38.6	43	41	40	38	38	38	38	40	41	40
6/21/2023 5:09	1.0 hour	41.6	55.7	38.6	47	44	43	40	38	38	38	43	43	42
6/21/2023 6:09	1.0 hour	47.7	77.1	38	49	45	43	38	38	38	38	43	43	40
6/21/2023 7:09	1.0 hour	49.6	76.4	35.8	61	47	42	38	35	35	35	42	44	39
6/21/2023 8:09	1.0 hour	49.4	76.6	35.8	58	45	42	36	35	35	35	42	43	39
6/21/2023 9:09	1.0 hour	53.1	82.5	35.8	63	47	43	36	35	35	35	43	44	39
6/21/2023 10:09	1.0 hour	49.2	76.9	35.8	54	45	43	38	35	35	35	43	43	39
6/21/2023 11:09	1.0 hour	48.4	72.3	35.8	57	47	46	42	35	35	35	46	46	44
6/21/2023 12:09	1.0 hour	54.4	81.1	35.8	68	49	45	38	35	35	35	45	46	41
6/21/2023 13:09	1.0 hour	59.6	90.5	35.8	69	50	47	38	35	35	35	47	48	42
6/21/2023 14:09	1.0 hour	50.8	76	35.8	63	48	45	40	36	35	35	45	46	42
6/21/2023 15:09	1.0 hour	63.6	95.1	35.8	73	58	51	40	38	37	35	51	53	44
6/21/2023 16:09	1.0 hour	54.2	80.8	35.8	67	49	43	39	38	37	35	43	44	40
6/21/2023 17:09	1.0 hour	51.2	77.5	35.8	63	49	44	38	35	35	35	44	45	40
6/21/2023 18:09	1.0 hour	48.4	73.8	35.8	59	47	43	38	35	35	35	43	44	39
6/21/2023 19:09	1.0 hour	45.9	70.9	35.8	55	49	45	38	35	35	35	45	47	41
6/21/2023 20:09	1.0 hour	47.5	75.4	35.8	54	46	43	38	35	35	35	43	44	39
6/21/2023 21:09	1.0 hour	51.6	80.8	35.8	58	47	43	38	38	37	35	43	44	38
6/21/2023 22:09	1.0 hour	46.1	74.9	35.8	47	40	39	38	38	38	37	39	40	38
6/21/2023 23:09	1.0 hour	39.2	53.7	37.8	43	40	40	38	38	38	38	40	40	38
6/22/2023 0:09	1.0 hour	38.7	44.9	38.5	40	39	38	38	38	38	38	38	38	38
6/22/2023 1:09	1.0 hour	38.7	43	36.8	40	39	38	38	38	38	38	38	39	38
6/22/2023 2:09	1.0 hour	39.2	50	38.5	44	40	40	38	38	38	38	40	40	38
6/22/2023 3:09	1.0 hour	39.8	51.7	38.6	44	42	41	38	38	38	38	41	41	40
6/22/2023 4:09	1.0 hour	45.7	75.6	38.5	46	42	41	38	38	38	38	41	41	40
6/22/2023 5:09	1.0 hour	45.4	64.9	38.7	56	50	47	41	39	38	38	47	48	43
6/22/2023 6:09	1.0 hour	46.5	73.4	35.8	50	44	43	39	38	37	35	43	43	40
6/22/2023 7:09	1.0 hour	47.3	72.8	35.8	56	46	44	39	37	36	35	44	45	41
6/22/2023 8:09	1.0 hour	48.9	75.3	35.8	58	46	43	36	35	35	35	43	44	39
6/22/2023 9:09	1.0 hour	52.7	78.2	35.8	62	55	53	38	35	35	35	53	54	42
6/22/2023 10:09	1.0 hour	53.8	80.1	35.8	65	56	52	37	35	35	35	52	53	40
6/22/2023 11:09	1.0 hour	56.7	88.6	35.8	61	54	52	39	35	35	35	52	52	42
6/22/2023 12:09	1.0 hour	49.6	73.4	35.8	62	47	44	40	36	35	35	44	45	42
6/22/2023 13:09	1.0 hour	53.7	80.2	35.8	66	55	52	42	38	35	35	52	53	46
6/22/2023 14:09	1.0 hour	59.3	77.4	35.8	71	66	65	44	38	38	35	65	65	52
6/22/2023 15:09	1.0 hour	52.4	76	35.8	64	54	51	44	38	37	35	51	52	48
6/22/2023 16:09	1.0 hour	51.7	79	35.8	62	50	49	42	36	35	35	49	49	47
6/22/2023 17:09	1.0 hour	54.9	79.2	35.8	68	52	48	40	35	35	35	48	49	45
6/22/2023 18:09	1.0 hour	53.5	82.6	35.8	62	48	43	35	35	35	35	43	45	38
6/22/2023 19:09	1.0 hour	57.9	88.5	35.8	65	49	43	35	35	35	35	43	45	39
6/22/2023 20:09	1.0 hour	46.3	74.8	35.8	52	42	38	35	35	35	35	38	39	36
6/22/2023 21:09	1.0 hour	51.8	77.7	35.8	63	43	38	35	35	35	35	38	40	35
6/22/2023 22:09	1.0 hour	43.6	74.4	35.8	41	38	37	35	35	35	35	37	38	35
6/22/2023 23:09	1.0 hour	36.4	45.2	35.8	39	38	36	35	35	35	35	36	36	35
6/23/2023 0:09	1.0 hour	37.3	54.2	35.8	44	38	35	35	35	35	35	35	36	35
6/23/2023 1:09	1.0 hour	44.8	72.6	35.8	45	35	35	35	35	35	35	35	35	35
6/23/2023 2:09	1.0 hour	35.8	48	35.8	36	35	35	35	35	35	35	35	35	35
6/23/2023 3:09	1.0 hour	44.2	75.1	35.8	41	38	38	35	35	35	35	38	38	35
6/23/2023 4:09	1.0 hour	38.4	44.2	35.8	41	40	39	38	36	35	35	39	39	38
6/23/2023 5:09	1.0 hour	50.5	77.1	35.8	62	49	47	41	38	38	38	47	48	45
6/23/2023 6:09	1.0 hour	44.6	71.9	35.8	49	45	44	39	38	38	37	44	44	41
6/23/2023 7:09	1.0 hour	48.4	74	35.8	59	46	43	38	36	35	35	43	44	40
6/23/2023 8:09	1.0 hour	50.9	79.1	35.8	62	47	43	38	35	35	35	43	44	40
6/23/2023 9:09	1.0 hour	60	81.2	35.8	76	56	51	40	37	35	35	51	52	43
6/23/2023 10:09	1.0 hour	53.2	76.9	35.8	66	55	52	41	37	36	35	52	53	49
6/23/2023 11:09	1.0 hour	53.9	82.8	35.8	60	55	53	44	38	36	35	53	54	50

Number	Start Date	Start Time	End Time	Duration	Sensitivity	LAeq	LASmax	LASmin	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	6/20/2023	3:40:20 PM	4:00:00 PM	0:19:40	16.82mV/Pa	71.7	89.6	41.5	80.1	79.3	77.8	76.6	76	72.7	66.4	53.5	49.2	46.3
2	6/20/2023	4:00:02 PM	5:00:00 PM	0:59:58	16.82mV/Pa	71.2	87.1	42.9	79.8	78.8	77.1	76.1	75.6	72.5	65.5	49.8	46.8	43.6
3	6/20/2023	5:00:02 PM	6:00:00 PM	0:59:58	16.82mV/Pa	71.3	94.9	42.8	79.7	78.7	77	75.9	75.4	71.8	64.3	49.7	47.2	43.9
4	6/20/2023	6:00:02 PM	7:00:00 PM	0:59:58	16.82mV/Pa	69.4	83.7	43.7	78.6	77.7	75.9	74.7	74.1	70.1	62.5	48	45.9	44.3
5	6/20/2023	7:00:02 PM	8:00:00 PM	0:59:58	16.82mV/Pa	68.2	84.9	41	78.6	77.4	75.2	73.6	72.9	67.1	58.9	44.4	41.8	41.1
6	6/20/2023	8:00:02 PM	9:00:00 PM	0:59:58	16.82mV/Pa	66.7	81.1	41	76.8	75.8	74.1	72.8	71.8	65.6	57.7	41.6	41.4	41.2
7	6/20/2023	9:00:02 PM	10:00:00 PM	0:59:58	16.82mV/Pa	65.7	81.4	41.2	76.6	75.5	73.3	71.5	70.4	63.6	54.8	41.4	41.3	41.2
8	6/20/2023	10:00:02 PM	11:00:00 PM	0:59:58	16.82mV/Pa	61.9	78.1	41.3	74.5	72.9	69.5	66.4	64.6	56.4	47	41.4	41.4	41.3
9	6/20/2023	11:00:02 PM	12:00:00 AM	0:59:58	16.82mV/Pa	61.7	81	40.3	75	73	68.5	64.9	62.8	52.9	42.1	41.4	41.4	41.3
10	6/21/2023	12:00:02 AM	1:00:00 AM	0:59:58	16.82mV/Pa	59.6	80.9	39.9	73.7	70.9	64.3	60.7	58.8	47.5	40.4	39.9	39.9	39.8
11	6/21/2023	1:00:02 AM	2:00:00 AM	0:59:58	16.82mV/Pa	59.7	82.7	39.9	74	71.3	64.4	60	57.6	44.8	40.2	39.9	39.9	39.8
12	6/21/2023	2:00:02 AM	3:00:00 AM	0:59:58	16.82mV/Pa	58.7	78.8	39.9	73.1	70	64.1	60.4	57.8	43.2	40	39.9	39.9	39.8
13	6/21/2023	3:00:02 AM	4:00:00 AM	0:59:58	16.82mV/Pa	60	80.2	39.9	74.2	71.5	65.3	61.2	59	44	42.5	39.9	39.9	39.9
14	6/21/2023	4:00:02 AM	5:00:00 AM	0:59:58	16.82mV/Pa	65.9	84.4	40	78	76.4	73.4	70.9	69.2	62.1	53.1	40.2	40	40
15	6/21/2023	5:00:02 AM	6:00:00 AM	0:59:58	16.82mV/Pa	67.9	87.1	40.4	79.1	77.5	75.1	73.1	71.9	65	58.7	45.5	41.3	40.5
16	6/21/2023	6:00:02 AM	7:00:00 AM	0:59:58	16.82mV/Pa	70.6	88.8	43.6	80.7	79	77.2	76	75.3	69.7	63.6	53.5	49.2	44.4
17	6/21/2023	7:00:02 AM	8:00:00 AM	0:59:58	16.82mV/Pa	72.1	85.6	43.6	81.4	79.9	78.2	77.2	76.6	72.9	66.8	55.8	52.7	46.8
18	6/21/2023	8:00:02 AM	9:00:00 AM	0:59:58	16.82mV/Pa	70.3	83.2	43.1	79.7	79	77.2	76.2	75.5	70.7	62.1	47.2	45	43.6
19	6/21/2023	9:00:02 AM	10:00:00 AM	0:59:58	16.82mV/Pa	70.9	83.5	43.5	80	79	77.5	76.4	75.8	72.1	63.1	48.4	46	43.9
20	6/21/2023	10:00:02 AM	11:00:00 AM	0:59:58	16.82mV/Pa	71.5	89.4	44.5	79.9	78.9	77.5	76.6	76.1	73	66.2	52.3	49.7	46
21	6/21/2023	11:00:02 AM	12:00:00 PM	0:59:58	16.82mV/Pa	71.2	84.6	45.2	79.8	78.7	77.4	76.4	75.8	72.8	65	54.2	51.6	48.1
22	6/21/2023	12:00:02 PM	1:00:00 PM	0:59:58	16.82mV/Pa	71.3	82.3	43.5	79.4	78.7	77.3	76.4	75.9	72.9	66.4	51.7	49.4	46.8
23	6/21/2023	1:00:02 PM	2:00:00 PM	0:59:58	16.82mV/Pa	71.1	84.6	45.3	79.8	78.9	77.3	76.3	75.8	72.5	64.7	54.2	52.7	48.1
24	6/21/2023	2:00:02 PM	3:00:00 PM	0:59:58	16.82mV/Pa	70.7	83.1	42.3	79.7	78.8	77.3	76.2	75.7	71.7	62.3	49.3	46.5	43.2
25	6/21/2023	3:00:02 PM	4:00:00 PM	0:59:58	16.82mV/Pa	71.6	85.2	42.8	80.1	79.1	77.5	76.6	76	73.2	66.6	50.7	48.4	44.8
26	6/21/2023	4:00:02 PM	5:00:00 PM	0:59:58	16.82mV/Pa	71.3	84.5	43.2	79.5	78.6	77.1	76.1	75.6	72.8	66.8	51.8	48.9	45.1
27	6/21/2023	5:00:02 PM	6:00:00 PM	0:59:58	16.82mV/Pa	70.7	86.4	43	79.4	78.3	76.8	75.8	75.3	72	64.2	49.6	46.9	44.3
28	6/21/2023	6:00:02 PM	7:00:00 PM	0:59:58	16.82mV/Pa	69.2	81.3	41.1	78	77	75.4	74.5	74.1	70.4	62.9	48.8	45.7	41.5
29	6/21/2023	7:00:02 PM	8:00:00 PM	0:59:58	16.82mV/Pa	68	82.3	41	78	76.9	74.8	73.5	72.8	67.6	60.8	44.8	42.2	41.4
30	6/21/2023	8:00:02 PM	9:00:00 PM	0:59:58	16.82mV/Pa	67.8	84.2	41	78.1	76.8	74.7	73.3	72.4	66.7	59.7	43.6	41.7	41
31	6/21/2023	9:00:02 PM	10:00:00 PM	0:59:58	16.82mV/Pa	65.8	82.3	41	76.5	75.3	73.3	71.9	70.7	63.9	56.4	41.6	41.1	41
32	6/21/2023	10:00:02 PM	11:00:00 PM	0:59:58	16.82mV/Pa	63.8	79.8	41	75.7	74.3	71.8	69.3	67.7	60	49.2	41.1	41	41
33	6/21/2023	11:00:02 PM	12:00:00 AM	0:59:58	16.82mV/Pa	61	80.2	41	74.5	72.7	67.7	64.2	62.7	51.9	41.8	41	41	41
34	6/22/2023	12:00:02 AM	1:00:00 AM	0:59:58	16.82mV/Pa	60	79.9	39.9	73.5	71.4	66.6	63.1	61.2	49.3	42.5	39.9	39.9	39.8
35	6/22/2023	1:00:02 AM	2:00:00 AM	0:59:58	16.82mV/Pa	57.7	79.9	39.9	72.1	68.9	61.5	58	55	43.5	40.7	39.9	39.9	39.9
36	6/22/2023	2:00:02 AM	3:00:00 AM	0:59:58	16.82mV/Pa	60.1	81.1	39.9	74.3	71.6	65.6	61.5	59.1	45.2	40.4	40	39.9	39.9
37	6/22/2023	3:00:02 AM	4:00:00 AM	0:59:58	16.82mV/Pa	58.9	79.2	40.4	73.6	70.3	63.4	59.3	56.9	44.7	44.1	40.5	40.4	40.4
38	6/22/2023	4:00:02 AM	5:00:00 AM	0:59:58	16.82mV/Pa	65.4	84.2	43.8	77.8	76.2	72.9	70	68.1	61.2	52.6	44.1	44	43.9
39	6/22/2023	5:00:02 AM	6:00:00 AM	0:59:58	16.82mV/Pa	68.1	86.6	44.2	79.2	77.9	75.4	73.5	72.2	64.5	57.3	45.2	44.7	44.4
40	6/22/2023	6:00:02 AM	7:00:00 AM	0:59:58	16.82mV/Pa	70.6	86.7	44.5	80.1	78.9	77.2	76	75.3	70.2	64	55.4	52.3	46
41	6/22/2023	7:00:02 AM	8:00:00 AM	0:59:58	16.82mV/Pa	71.2	88.5	44.5	80.3	79.2	77.6	76.5	75.9	71.5	65.1	50.7	47.7	45.1
42	6/22/2023	8:00:02 AM	9:00:00 AM	0:59:58	16.82mV/Pa	71.1	83.9	42.9	79.6	78.7	77.3	76.4	75.9	72.5	65.4	51.2	47.2	44.2
43	6/22/2023	9:00:02 AM	10:00:00 AM	0:59:58	16.82mV/Pa	70.5	82	42.8	79	78.1	76.7	75.8	75.3	71.9	64.2	52	50	46.2
44	6/22/2023	10:00:02 AM	11:00:00 AM	0:59:58	16.82mV/Pa	71.2	86	41.9	79.7	78.6	77.2	76.3	75.8	72.6	65.3	50.1	46.9	43.6
45	6/22/2023	11:00:02 AM	12:00:00 PM	0:59:58	16.82mV/Pa	72.6	87.8	42.1	80.3	79.3	78.2	77.4	77	74.5	68.6	51.3	48.5	43.1
46	6/22/2023	12:00:02 PM	1:00:00 PM	0:59:58	16.82mV/Pa	72.5	84.6	43.2	80.9	79.9	78.4	77.5	77	73.9	68	51.8	49.9	46.9
47	6/22/2023	1:00:02 PM	2:00:00 PM	0:59:58	16.82mV/Pa	71.9	85.8	41.9	80.1	79.3	77.9	77	76.5	73.5	66.4	52.7	49.7	45.5
48	6/22/2023	2:00:02 PM	3:00:00 PM	0:59:58	16.82mV/Pa	71.2	82.1	43.4	79.6	78.9	77.5	76.5	75.9	72.7	65.1	49	46.8	44.4
49	6/22/2023	3:00:02 PM	4:00:00 PM	0:59:58	16.82mV/Pa	72.1	84.5	42.3	80.2	79.2	77.9	77.1	76.6	73.6	67.8	52	47.8	43.7
50	6/22/2023	4:00:02 PM	5:00:00 PM	0:59:58	16.82mV/Pa	71.6	83	43.5	79.7	78.8	77.5	76.6	76.1	73.2	67.1	52.4	49.3	46.7
51	6/22/2023	5:00:02 PM	6:00:00 PM	0:59:58	16.82mV/Pa	71.5	83.6	41.9	79.9	78.7	77.4	76.4	76	73	66.4	50.8	48.3	43.2
52	6/22/2023	6:00:02 PM	7:00:00 PM	0:59:58	16.82mV/Pa	70.3	83.8	41.1	79	78.2	76.6	75.7	75.1	71.6	63.5	48.5	45.3	41.6
53	6/22/2023	7:00:02 PM	8:00:00 PM	0:59:58	16.82mV/Pa	69.3	85.2	41.1	79	77.9	76.1	74.8	74.1	69	61.4	42.6	41.7	41.3
54	6/22/2023	8:00:02 PM	9:00:00 PM	0:59:58	16.82mV/Pa	68.2	83	41.5	78.5	77.3	75.1	73.8	73.1	67.5	59.9	44.7	44.1	42.2
55	6/22/2023	9:00:02 PM	10:00:00 PM	0:59:58	16.82mV/Pa	67.1	84.7	41.2	77.5	76.3	74.4	72.9	72	65.3	57.8	41.8	41.5	41.2
56	6/22/2023	10:00:02 PM	11:00:00 PM	0:59:58	16.82mV/Pa	63.9	81.1	41.3	76.4	74.8	71.8	68.9	67.3	59.1	45.5	41.4	41.4	41.3
57	6/22/2023	11:00:02 PM	12:00:00 AM	0:59:58	16.82mV/Pa	63.3	80.8	40	75.7	74.2	70.9	67.9	66.7	57.9	45.8	40.2	40.1	40
58	6/23/2023	12:00:02 AM	1:00:00 AM	0:59:58	16.82mV/Pa	60.2	82.5	40	74.3	71.4	65.1	61.8	59.9	46.9	40.2	40	39.9	39.9
59	6/23/2023	1:00:02 AM	2:00:00 AM	0:59:58	16.82mV/Pa	57.9	81.1	39.9	72.8	68	61.6	56.4	52.8	40.5	40.1	39.9	39.9	39.9
60	6/23/2023	2:00:02 AM	3:00:00 AM	0:59:58	16.82mV/Pa	60	81.5	39.9	74.7	71.6	64.4	59.8	57.3	42.5	40.1	39.9	39.9	39.9
61	6/23/2023	3:00:02 AM	4:00:00 AM	0:59:58	16.82mV/Pa	62.5	82.7	40	76.3	74.2	68.6	65.3	63.7	51.4	41	40.1	40	39.9
62	6/23/2023	4:00:02 AM	5:00:00 AM	0:59:58	16.82mV/Pa	65.6	84.8	40.1	78.3	76.5	73.3	70.5	68.4	60.4	50.9	40.2	40.1	40
63	6/23/2023	5:00:02 AM	6:00:00 AM	0:59:58	16.82mV/Pa	67.9	86.5	42.5	79.5	77.9	75.3	73.4	72.1	64.2	55.8	44.5	43.7	42.9
64	6/23/2023	6:00:02 AM	7:00:00 AM	0:59:58	16.82mV/Pa	70.7	86.8	43.6	80.3	79.2	77.5	76.3	75.7	70	63.3	49.7	45.4	44.6
65	6/23/2023	7:00:02 AM	8:00:00 AM	0:59:58	16.82mV/Pa	72.1	87.3	45.4	81	79.9	78.5	77.5	76.9	72.8	65.6	55.3	52.8	49.4
66	6/23/2023	8:00:02 AM	9:00:00 AM	0:59:58	16.82mV/Pa	71.7	84.5	44.1	80.8	79.8	78.1	77.2	76.7	72.7	64.6	52.2	49.2	45.5
67	6/23/2023	9:00:02 AM	10:00:00 AM	0:59:58	16.82mV/Pa	72.9	94.3	44.2	81.3	80.2	78.6	77.7	77.2	74.2	65.5	49.2	46.4	44.5
68	6/23/2023	10:00:02 AM	11:00:00 AM	0:59:58	16.82mV/Pa	72.7	84	43.1	80.7	79.8	78.4	77.6	77.1	74.6	68	51.9	49.2	45
69	6/23/2023	11:00:02 AM	12:00:00 PM	0:59:58	16.82mV/Pa	72.8	86.8	44.6	80.4	79.5	78.5	77.7	77.2	74.7	68.8	52.7	50	46
70	6/23/2023	12:00:02 PM	1:00:00 PM	0:59:58	16.82mV/Pa	72.9	86.3	42.1	81	79.9	78.6	77.7	77.2	74.6	68.6	50.4	47.1	44
71	6/23/2023	1:00:01 PM	1:18:13 PM	0:18:12	16.82mV/Pa	73.2	84	44.5	80.9	80.1	78.7	77.8	77.3	75	70	53.2	49.9	45.9
72	6/23/2023	1:18:17 PM	1:18:20 PM	0:00:03	16.82mV/Pa	62.1	63.8	58.6	63.8	63.7	63.5	63.4	63.3	62.9	61.9	59.8	58.8	58.6

Number	Start Date	Start Time	End Time	Duration	LAeq	LASmax	LASmin	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
1	6/20/2023	3:28:54 PM	4:00:00 PM	0:31:06	75.6	90.5	43.5	83.7	82.8	81.5	80.6	80.1	77.2	70	53.8	50.1	45.7
2	6/20/2023	4:00:02 PM	5:00:00 PM	0:59:58	75.1	87.8	36.3	83.9	83.1	81.8	80.8	80.2	76.1	66.9	48.7	45.3	40.5
3	6/20/2023	5:00:02 PM	6:00:00 PM	0:59:58	75.6	102.2	36.2	83.9	83	81.5	80.5	79.9	75.3	64.6	44.7	42.4	38.1
4	6/20/2023	6:00:02 PM	7:00:00 PM	0:59:58	73.7	92.5	32.9	83.5	82.6	81	79.9	79.1	72.4	60.3	42.8	40.2	35.1
5	6/20/2023	7:00:02 PM	8:00:00 PM	0:59:58	72	87.6	32.1	83.3	82	80	78.4	77.3	67.2	54	39.2	37.8	34.1
6	6/20/2023	8:00:02 PM	9:00:00 PM	0:59:58	70.7	88.4	31.6	82.8	81.4	78.9	76.8	75	62.2	51.9	36.8	35	32.8
7	6/20/2023	9:00:02 PM	10:00:00 PM	0:59:58	69.8	89.7	30.7	82.3	81	78.1	75.2	73.1	59.9	48.9	32.3	31.4	30.9
8	6/20/2023	10:00:02 PM	11:00:00 PM	0:59:58	65.7	86.8	30.2	79.9	77.9	72.2	67.1	63.8	51.1	40	30.7	30.5	30.4
9	6/20/2023	11:00:02 PM	12:00:00 AM	0:59:58	66.4	89.2	30.1	80.9	77.9	69.4	62.1	58.3	47.6	36.8	30.3	30.2	30.2
10	6/21/2023	12:00:02 AM	1:00:00 AM	0:59:58	63.8	89.6	30.4	78.8	73.9	62	55.9	52.9	42.1	34.4	30.6	30.6	30.5
11	6/21/2023	1:00:02 AM	2:00:00 AM	0:59:58	63.5	86.5	30.2	78.5	73.3	60.4	54.3	51.8	40	31.8	30.5	30.4	30.3
12	6/21/2023	2:00:02 AM	3:00:00 AM	0:59:58	61.4	84.8	30.1	76.7	71.7	59.5	54.2	52	38	31.5	30.3	30.3	30.2
13	6/21/2023	3:00:02 AM	4:00:00 AM	0:59:58	63.2	84.7	30.2	78.2	74.3	63.7	56.5	53.5	38	31.1	30.6	30.5	30.3
14	6/21/2023	4:00:02 AM	5:00:00 AM	0:59:58	69.6	88.7	30.7	82.7	81	77	73.3	71	58.2	48.4	32.5	31.4	31
15	6/21/2023	5:00:02 AM	6:00:00 AM	0:59:58	70.9	88.8	32.9	83.2	81.7	78.9	76.4	74.7	63	52	38.9	37.1	34.7
16	6/21/2023	6:00:02 AM	7:00:00 AM	0:59:58	73.7	92.5	37.1	84.4	83.1	81.1	79.8	79	70.9	62.4	48.9	42.7	37.7
17	6/21/2023	7:00:02 AM	8:00:00 AM	0:59:58	75.2	92.6	40.1	85.1	83.8	82	80.9	80.3	75	63.8	53	50.7	47.8
18	6/21/2023	8:00:02 AM	9:00:00 AM	0:59:58	74	91.3	32.2	84.3	83.1	81.2	79.9	79.2	72.8	59	40.9	38.2	33.9
19	6/21/2023	9:00:02 AM	10:00:00 AM	0:59:58	74.1	91.7	32.1	83.8	82.7	81	80	79.3	73.9	61.9	41.7	37.2	34.2
20	6/21/2023	10:00:02 AM	11:00:00 AM	0:59:58	74.6	87.2	37.9	83.8	82.8	81.1	80.1	79.5	75.6	67.4	47.3	44.7	40.4
21	6/21/2023	11:00:02 AM	12:00:00 PM	0:59:58	74.9	88.9	42.2	83.7	82.7	81.2	80.1	79.5	76.1	68.3	55.9	51.7	47.9
22	6/21/2023	12:00:02 PM	1:00:00 PM	0:59:58	74.9	89.3	44.6	83.4	82.5	81.1	80.2	79.6	76.3	68.3	54.3	50.9	47
23	6/21/2023	1:00:02 PM	2:00:00 PM	0:59:58	74.9	90.3	45.4	83.6	82.8	81.3	80.3	79.8	75.9	67.9	59.8	54.4	48.1
24	6/21/2023	2:00:02 PM	3:00:00 PM	0:59:58	74.2	91.5	34	83.5	82.4	80.7	79.6	79.1	75	66.1	46.9	42.5	36.9
25	6/21/2023	3:00:02 PM	4:00:00 PM	0:59:58	75.2	90.6	39.7	83.5	82.8	81.5	80.7	80.2	76.7	67.8	47.2	44.8	42.2
26	6/21/2023	4:00:02 PM	5:00:00 PM	0:59:58	75.4	89	36.7	83.9	83.1	81.8	80.9	80.3	76.8	68	50	46	40.8
27	6/21/2023	5:00:02 PM	6:00:00 PM	0:59:58	74.5	92.9	37.5	83.5	82.6	81.2	80.3	79.8	75.3	64.2	43.4	40.9	38.8
28	6/21/2023	6:00:02 PM	7:00:00 PM	0:59:58	73.8	87.4	33.9	83.3	82.5	81	79.8	79.2	73.9	62.8	43.3	40.7	36.4
29	6/21/2023	7:00:02 PM	8:00:00 PM	0:59:58	72.1	90.6	34.4	82.9	81.9	80	78.4	77.4	68.5	56.3	41.6	39	35.9
30	6/21/2023	8:00:02 PM	9:00:00 PM	0:59:58	71.5	87.3	31	83.2	81.9	79.5	77.6	76.4	66.1	54.3	40	36.7	31.5
31	6/21/2023	9:00:02 PM	10:00:00 PM	0:59:58	70	86.1	30.5	82.3	81	78.4	75.8	73.9	61	50.2	36.7	33.2	30.9
32	6/21/2023	10:00:02 PM	11:00:00 PM	0:59:58	68.4	91.9	30.3	81.5	79.9	75.7	71	68.2	54	43.3	31.5	30.6	30.4
33	6/21/2023	11:00:02 PM	12:00:00 AM	0:59:58	65.1	86.1	30.1	80.1	77.1	68.5	61.2	57.8	47.6	35.9	30.5	30.4	30.3
34	6/22/2023	12:00:02 AM	1:00:00 AM	0:59:58	64.2	88.1	30	78.9	75.3	65.3	57.8	55	44.4	34.4	30.3	30.2	30.1
35	6/22/2023	1:00:02 AM	2:00:00 AM	0:59:58	62.6	87.7	30	77.3	71.6	56.8	50.8	49.1	36.5	31.3	30.2	30.1	30.1
36	6/22/2023	2:00:02 AM	3:00:00 AM	0:59:58	64	87.6	30.1	79	74.5	62.2	55.5	53	40.8	31.9	30.3	30.3	30.1
37	6/22/2023	3:00:02 AM	4:00:00 AM	0:59:58	63.1	87.7	30.3	78.4	73.4	62.2	53.9	51.1	40.1	32.8	30.6	30.5	30.4
38	6/22/2023	4:00:02 AM	5:00:00 AM	0:59:58	69.3	89.7	31.4	82.8	80.6	76.5	72.4	70	56.8	47.2	34.5	33.2	32
39	6/22/2023	5:00:02 AM	6:00:00 AM	0:59:58	71.5	89.8	32.8	83.5	82.1	79.4	77	75.3	64	53.2	37.6	34.9	33.7
40	6/22/2023	6:00:02 AM	7:00:00 AM	0:59:58	73.5	89.6	35.2	83.8	82.6	80.8	79.6	78.8	71.8	61	45.6	39.7	36.3
41	6/22/2023	7:00:02 AM	8:00:00 AM	0:59:58	74.3	91.1	36.7	84.6	83.3	81.3	80.2	79.5	72.8	60.5	49.4	46.6	41.7
42	6/22/2023	8:00:02 AM	9:00:00 AM	0:59:58	74.8	91.8	38.7	84.6	83.4	81.6	80.5	79.9	74.9	63.2	47	44	40.6
43	6/22/2023	9:00:02 AM	10:00:00 AM	0:59:58	74	88.9	39.3	83.4	82.4	80.8	79.7	79	74.4	66.2	49	45.7	42
44	6/22/2023	10:00:02 AM	11:00:00 AM	0:59:58	74.8	87.8	37.4	83.8	82.9	81.4	80.4	79.8	75.8	66.4	49.5	46.5	41.9
45	6/22/2023	11:00:02 AM	12:00:00 PM	0:59:58	75.8	88.7	38.8	84.3	83.3	82	81.1	80.5	77.4	69.7	49.9	46.9	42.6
46	6/22/2023	12:00:02 PM	1:00:00 PM	0:59:58	75.7	88	41.6	84	83.2	81.7	81	80.5	77.4	69.9	52	48.9	44.5
47	6/22/2023	1:00:02 PM	2:00:00 PM	0:59:58	75.5	89.4	39	83.8	83	81.7	80.7	80.2	77.2	69.1	53.6	48.1	42.4
48	6/22/2023	2:00:02 PM	3:00:00 PM	0:59:58	74.8	86.8	37.3	83.4	82.6	81.3	80.4	79.8	76.1	66.6	45.1	42.7	39.7
49	6/22/2023	3:00:02 PM	4:00:00 PM	0:59:58	75.8	91.4	40	83.9	83.1	81.8	81	80.5	77.5	69.7	51.2	47.4	42.2
50	6/22/2023	4:00:02 PM	5:00:00 PM	0:59:58	75.5	88.2	39.9	83.9	83.2	82	81	80.5	77.1	68.2	49.3	46	42.2
51	6/22/2023	5:00:02 PM	6:00:00 PM	0:59:58	75.6	91.2	39.6	84.5	83.5	82	81.2	80.6	76.7	66.9	46.3	43.2	41
52	6/22/2023	6:00:02 PM	7:00:00 PM	0:59:58	74.3	87.9	35	83.9	83	81.5	80.4	79.7	74.1	61.9	43.2	40.8	37.2
53	6/22/2023	7:00:02 PM	8:00:00 PM	0:59:58	73.3	89	31.9	84.4	83.2	81.2	79.7	78.6	69.6	55.4	39.2	36.4	33.8
54	6/22/2023	8:00:02 PM	9:00:00 PM	0:59:58	72.5	90.5	33.1	83.5	82.4	80.3	78.7	77.6	67.8	54.6	39.7	37.3	34.5
55	6/22/2023	9:00:02 PM	10:00:00 PM	0:59:58	71	89.1	31.9	82.8	81.7	79.3	77.1	75.4	62.4	51.2	36.7	34.4	32.8
56	6/22/2023	10:00:02 PM	11:00:00 PM	0:59:58	68.2	86.5	30.1	82.3	80.3	75.5	70	66.5	51	39.7	31	30.5	30.2
57	6/22/2023	11:00:02 PM	12:00:00 AM	0:59:58	67.2	87.9	30.1	81.4	79.2	73.5	67.7	64.2	50.5	40.9	30.9	30.7	30.3
58	6/23/2023	12:00:02 AM	1:00:00 AM	0:59:58	64.7	88.6	30.2	79.7	75.5	63.7	55.7	52.5	41.6	32.3	30.4	30.3	30.3
59	6/23/2023	1:00:02 AM	2:00:00 AM	0:59:58	62.2	87.2	30.2	76.3	69.5	55.2	49.2	46.7	35.6	31.2	30.5	30.4	30.3
60	6/23/2023	2:00:02 AM	3:00:00 AM	0:59:58	63.8	87	30.4	78.6	73.8	62.2	54.5	50.5	36.3	31.4	30.7	30.6	30.5
61	6/23/2023	3:00:02 AM	4:00:00 AM	0:59:58	66.7	90.3	30.7	81.3	78	68.7	61.5	57.8	47.3	34.9	31.3	31.1	30.9
62	6/23/2023	4:00:02 AM	5:00:00 AM	0:59:58	69.1	90	31	82.7	80.9	76.4	71.7	68.8	53.9	44.4	32.2	31.6	31.3
63	6/23/2023	5:00:02 AM	6:00:00 AM	0:59:58	71	90.9	32.7	83.4	82	79.1	76.2	74.2	61	50	36.7	35	33.6
64	6/23/2023	6:00:02 AM	7:00:00 AM	0:59:58	74.1	88.7	33.8	84.7	83.7	81.9	80.5	79.6	71.4	58.9	45.5	40.3	35.6
65	6/23/2023	7:00:02 AM	8:00:00 AM	0:59:58	75.4	94.9	39.8	85.2	84.2	82.4	81.2	80.6	74.6	63.3	50.6	48.6	45.2
66	6/23/2023	8:00:02 AM	9:00:00 AM	0:59:58	75	92	35.7	84.8	83.6	81.8	80.7	80	75	63.5	46.2	43.5	39.7
67	6/23/2023	9:00:02 AM	10:00:00 AM	0:59:58	76	98.2	35.6	84.9	83.9	82.3	81.2	80.6	76.6	65.7	43.7	41.6	38.2
68	6/23/2023	10:00:02 AM	11:00:00 AM	0:59:58	75.8	88.1	39.1	84.3	83.5	82.2	81.2	80.7	77.6	68.5	45.9	43.2	41.3
69	6/23/2023	11:00:02 AM	12:00:00 PM	0:59:58	76.5	90.3	40.4	84.8	83.9	82.5	81.7	81.1	78.2	70.3	49.7	46.4	42.4
70	6/23/2023	12:00:02 PM	1:00:00 PM	0:59:58	76.5	93.6	38.6	84.5	83.6	82.5	81.7	81.3	78.3	70.2	47.8	44.3	41.3
71	6/23/2023	1:00:00 PM	1:10:42 PM	0:10:42	75.4	87.5	43.3	83.7	82.5	81.2	80.5	80.1	77.2	70.2	52.1	49	43.9

Appendix E-2
Short-Term Measurement Data

Summary

File Name on Meter	831_Data.079.s
File Name on PC	831_0003785-20230620 131014-831_Data.079.ldbin
Serial Number	0003785
Model	Model 831
Firmware Version	2.403
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2023-06-20 13:10:14
Stop	2023-06-20 13:20:40
Duration	00:10:00.5
Run Time	00:10:00.5
Pause	00:00:00.0
Pre-Calibration	2023-06-20 13:03:42
Post-Calibration	2023-06-20 13:22:41
Calibration Deviation	0.03 dB

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRM831
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	A Weighting
OBA Max Spectrum	Bin Max
Gain	20.0 dB
Overload	124.5 dB

	A	C	Z
Under Range Peak	**57.0**	54.0	59.0 dB
Under Range Limit	**24.8**	25.4	33.0 dB
Noise Floor	15.6	16.3	21.4 dB

	First	Second	Third
Instrument Identification			

Results

LAeq	60.3 dB	
LAE	88.1 dB	
EA	71.494 µPa²h	
LApeak (max)	2023-06-20 13:12:09	88.2 dB
LASmax	2023-06-20 13:14:59	61.6 dB
LASmin	2023-06-20 13:15:38	59.5 dB
SEA	-99.9 dB	

	Exceedance Counts	Duration
LAS > 65.0 dB	0	0.0 s
LAS > 85.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	Ldn	LDay 07:00-22:00	LNight 22:00-07:00	Lden	LDay 07:00-19:00	LEvening 19:00-22:00
	60.3	60.3	-99.9	60.3	60.3	-99.9

LCeq	66.5 dB
LAeq	60.3 dB
LCeq - LAeq	6.2 dB
LAIeq	61.0 dB
LAeq	60.3 dB
LAIeq - LAeq	0.7 dB

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	60.3		66.5		71.0	

$L_{S(max)}$	61.6	2023/06/20 13:14:59	68.4	2023/06/20 13:11:08	80.9	2023/06/20 13:11:09
$L_{F(max)}$	66.1	2023/06/20 13:14:59	70.7	2023/06/20 13:11:08	85.4	2023/06/20 13:11:09
$L_{I(max)}$	70.3	2023/06/20 13:14:59	72.9	2023/06/20 13:20:28	87.7	2023/06/20 13:11:09
$L_{S(min)}$	59.5	2023/06/20 13:15:38	64.8	2023/06/20 13:18:43	66.9	2023/06/20 13:18:43
$L_{F(min)}$	58.7	2023/06/20 13:10:45	63.6	2023/06/20 13:17:40	65.2	2023/06/20 13:18:43
$L_{I(min)}$	59.1	2023/06/20 13:10:45	64.5	2023/06/20 13:17:41	67.5	2023/06/20 13:18:43
$L_{Peak(max)}$	88.2	2023/06/20 13:12:09	88.5	2023/06/20 13:14:59	90.4	2023/06/20 13:11:09

Overload Count	0
Overload Duration	0.0 s
OBA Overload Count	0
OBA Overload Duration	0.0 s

Statistics	
LA 1.37	60.9 dB
LA 10.00	60.6 dB
LA 33.00	60.4 dB
LA 50.00	60.2 dB
LA 90.00	59.9 dB
LA 99.00	59.7 dB

Calibration History

Preamp	**Date**	**dB re. 1V/Pa**
PRM831	2023-06-20 13:22:16	-27.06
PRM831	2023-06-20 13:03:42	-27.09
PRM831	2023-06-20 12:51:56	-27.14
PRM831	2023-06-20 12:39:52	-27.13
PRM831	2023-06-20 12:11:10	-27.11
PRM831	2023-06-13 14:56:33	-27.17
PRM831	2023-06-13 14:34:03	-27.14
PRM831	2023-06-13 14:26:45	-27.14
PRM831	2023-06-13 14:10:34	-27.15
PRM831	2023-06-13 13:54:59	-27.22
PRM831	2023-06-05 22:05:22	-27.12

Summary

File Name on Meter	831_Data.081.s
File Name on PC	831_0003785-20230623 115000-831_Data.081.ldbin
Serial Number	0003785
Model	Model 831
Firmware Version	2.403
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2023-06-23 11:50:00
Stop	2023-06-23 12:05:00
Duration	00:15:00.0
Run Time	00:15:00.0
Pause	00:00:00.0
Pre-Calibration	2023-06-23 11:48:00
Post-Calibration	2023-06-23 12:06:03
Calibration Deviation	-0.01 dB

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRM831
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Frequency Weighting	A Weighting
OBA Max Spectrum	Bin Max
Gain	20.0 dB
Overload	124.5 dB

	A	C	Z
Under Range Peak	**57.0**	54.0	59.0 dB
Under Range Limit	**24.8**	25.4	33.0 dB
Noise Floor	15.6	16.3	21.4 dB

	First	Second	Third
Instrument Identification			

Results

LAeq	52.0 dB	
LAE	81.5 dB	
EA	15.849 µPa²h	
LApeak (max)	2023-06-23 11:52:46	85.0 dB
LASmax	2023-06-23 11:52:47	74.2 dB
LASmin	2023-06-23 11:55:18	36.2 dB
SEA	-99.9 dB	

	Exceedance Counts	Duration
LAS > 65.0 dB	1	7.3 s
LAS > 85.0 dB	0	0.0 s
LApeak > 135.0 dB	0	0.0 s
LApeak > 137.0 dB	0	0.0 s
LApeak > 140.0 dB	0	0.0 s

Community Noise	Ldn	LDay 07:00-22:00	LNight 22:00-07:00	Lden	LDay 07:00-19:00	LEvening 19:00-22:00
	52.0	52.0	-99.9	52.0	52.0	-99.9

LCeq	66.0 dB
LAeq	52.0 dB
LCeq - LAeq	14.0 dB
LAIeq	53.4 dB
LAeq	52.0 dB
LAIeq - LAeq	1.4 dB

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	52.0		66.0		67.4	

$L_{S(max)}$	74.2	2023/06/23 11:52:47	88.5	2023/06/23 11:52:47	88.7	2023/06/23 11:52:47
$L_{F(max)}$	76.7	2023/06/23 11:52:46	90.9	2023/06/23 11:52:46	91.0	2023/06/23 11:52:46
$L_{I(max)}$	77.4	2023/06/23 11:52:46	91.7	2023/06/23 11:52:46	91.8	2023/06/23 11:52:46
$L_{S(min)}$	36.2	2023/06/23 11:55:18	47.2	2023/06/23 11:55:17	55.9	2023/06/23 11:52:11
$L_{F(min)}$	35.8	2023/06/23 11:55:17	45.5	2023/06/23 11:55:03	52.3	2023/06/23 11:52:08
$L_{I(min)}$	36.3	2023/06/23 11:55:06	48.5	2023/06/23 11:55:17	57.3	2023/06/23 11:52:00
$L_{Peak(max)}$	85.0	2023/06/23 11:52:46	96.2	2023/06/23 11:52:47	96.1	2023/06/23 11:52:46

Overload Count	0
Overload Duration	0.0 s
OBA Overload Count	0
OBA Overload Duration	0.0 s

Statistics

LA 1.37	60.2 dB
LA 10.00	46.8 dB
LA 33.00	42.6 dB
LA 50.00	41.1 dB
LA 90.00	38.3 dB
LA 99.00	36.6 dB

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	2023-06-23 12:05:43	-27.04
PRM831	2023-06-23 11:48:00	-27.02
PRM831	2023-06-23 10:39:29	-27.08
PRM831	2023-06-23 10:13:15	-26.98
PRM831	2023-06-20 13:22:16	-27.06
PRM831	2023-06-20 13:03:42	-27.09
PRM831	2023-06-20 12:51:56	-27.14
PRM831	2023-06-20 12:39:52	-27.13
PRM831	2023-06-20 12:11:10	-27.11
PRM831	2023-06-13 14:56:33	-27.17
PRM831	2023-06-13 14:34:03	-27.14

Tiger Creek Spillway

Short Term Noise Measurement - Time History, ST-1

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin
1	Run	2023-06-20	13:10:14			
2		2023-06-20	13:10:14	60.9	60.7	60.4
3		2023-06-20	13:10:15	60.3	60.7	60.4
4		2023-06-20	13:10:16	59.9	60.5	60.0
5		2023-06-20	13:10:17	60.1	60.1	59.9
6		2023-06-20	13:10:18	60.7	60.5	60.1
7		2023-06-20	13:10:19	60.2	60.5	60.3
8		2023-06-20	13:10:20	59.9	60.4	60.0
9		2023-06-20	13:10:21	60.8	60.6	60.1
10		2023-06-20	13:10:22	60.5	60.6	60.5
11		2023-06-20	13:10:23	60.1	60.5	60.2
12		2023-06-20	13:10:24	60.4	60.4	60.3
13		2023-06-20	13:10:25	60.5	60.5	60.3
14		2023-06-20	13:10:26	60.0	60.6	60.2
15		2023-06-20	13:10:27	60.3	60.4	60.0
16		2023-06-20	13:10:28	60.9	60.7	60.4
17		2023-06-20	13:10:29	60.8	60.8	60.6
18		2023-06-20	13:10:30	60.4	60.7	60.4
19		2023-06-20	13:10:31	60.5	60.6	60.5
20		2023-06-20	13:10:32	60.4	60.5	60.4
21		2023-06-20	13:10:33	59.9	60.5	60.1
22		2023-06-20	13:10:34	60.3	60.2	60.1
23		2023-06-20	13:10:35	60.1	60.3	60.1
24		2023-06-20	13:10:36	60.0	60.2	60.0
25		2023-06-20	13:10:37	60.0	60.1	60.0
26		2023-06-20	13:10:38	59.7	60.0	59.8
27		2023-06-20	13:10:39	60.0	60.1	59.9
28		2023-06-20	13:10:40	60.0	60.0	59.9
29		2023-06-20	13:10:41	60.2	60.2	60.0
30		2023-06-20	13:10:42	60.2	60.2	60.1
31		2023-06-20	13:10:43	60.3	60.3	60.1
32		2023-06-20	13:10:44	59.4	60.2	59.7
33		2023-06-20	13:10:45	59.9	59.8	59.7
34		2023-06-20	13:10:46	59.7	59.9	59.7
35		2023-06-20	13:10:47	60.3	60.2	59.7
36		2023-06-20	13:10:48	59.7	60.2	59.9
37		2023-06-20	13:10:49	60.0	60.0	59.9
38		2023-06-20	13:10:50	60.3	60.2	59.9
39		2023-06-20	13:10:51	59.9	60.2	60.0
40		2023-06-20	13:10:52	59.7	60.0	59.8
41		2023-06-20	13:10:53	60.2	60.1	59.8
42		2023-06-20	13:10:54	60.1	60.2	60.0
43		2023-06-20	13:10:55	60.0	60.1	59.8
44		2023-06-20	13:10:56	60.4	60.3	60.1
45		2023-06-20	13:10:57	60.6	60.5	60.3
46		2023-06-20	13:10:58	60.2	60.5	60.3
47		2023-06-20	13:10:59	59.7	60.3	59.9
48		2023-06-20	13:11:00	60.1	60.1	59.9
49		2023-06-20	13:11:01	60.0	60.1	60.0
50		2023-06-20	13:11:02	59.9	60.0	59.8
51		2023-06-20	13:11:03	60.1	60.1	59.9

52	2023-06-20	13:11:04	60.2	60.3	60.1
53	2023-06-20	13:11:05	60.3	60.3	60.1
54	2023-06-20	13:11:06	60.4	60.4	60.1
55	2023-06-20	13:11:07	60.6	60.6	60.3
56	2023-06-20	13:11:08	60.1	60.6	60.2
57	2023-06-20	13:11:09	60.1	60.2	60.1
58	2023-06-20	13:11:10	60.5	60.4	60.1
59	2023-06-20	13:11:11	60.0	60.4	60.1
60	2023-06-20	13:11:12	60.0	60.2	60.0
61	2023-06-20	13:11:13	60.3	60.3	60.0
62	2023-06-20	13:11:14	60.3	60.3	60.1
63	2023-06-20	13:11:15	60.0	60.4	60.0
64	2023-06-20	13:11:16	60.3	60.3	60.1
65	2023-06-20	13:11:17	60.6	60.5	60.2
66	2023-06-20	13:11:18	60.9	60.7	60.5
67	2023-06-20	13:11:19	60.4	60.8	60.5
68	2023-06-20	13:11:20	60.0	60.5	60.2
69	2023-06-20	13:11:21	60.3	60.3	60.1
70	2023-06-20	13:11:22	60.4	60.4	60.3
71	2023-06-20	13:11:23	60.7	60.6	60.4
72	2023-06-20	13:11:24	60.4	60.7	60.4
73	2023-06-20	13:11:25	60.3	60.5	60.2
74	2023-06-20	13:11:26	59.7	60.4	59.9
75	2023-06-20	13:11:27	59.7	60.0	59.7
76	2023-06-20	13:11:28	60.1	60.1	59.7
77	2023-06-20	13:11:29	61.4	61.3	60.0
78	2023-06-20	13:11:30	60.6	60.7	60.5
79	2023-06-20	13:11:31	60.2	60.7	60.3
80	2023-06-20	13:11:32	60.3	60.6	60.3
81	2023-06-20	13:11:33	60.5	60.5	60.4
82	2023-06-20	13:11:34	60.4	60.5	60.3
83	2023-06-20	13:11:35	60.1	60.4	60.2
84	2023-06-20	13:11:36	59.9	60.3	60.0
85	2023-06-20	13:11:37	60.5	60.4	60.0
86	2023-06-20	13:11:38	61.4	61.3	60.2
87	2023-06-20	13:11:39	60.3	61.3	60.7
88	2023-06-20	13:11:40	60.1	60.7	60.3
89	2023-06-20	13:11:41	60.2	60.4	60.1
90	2023-06-20	13:11:42	59.7	60.3	59.9
91	2023-06-20	13:11:43	60.5	60.3	60.0
92	2023-06-20	13:11:44	60.2	60.3	60.2
93	2023-06-20	13:11:45	60.3	60.5	60.3
94	2023-06-20	13:11:46	60.2	60.3	60.1
95	2023-06-20	13:11:47	60.1	60.4	60.1
96	2023-06-20	13:11:48	60.7	60.5	60.1
97	2023-06-20	13:11:49	60.5	60.6	60.4
98	2023-06-20	13:11:50	60.8	60.7	60.4
99	2023-06-20	13:11:51	61.3	61.4	60.6
100	2023-06-20	13:11:52	60.3	61.0	60.5
101	2023-06-20	13:11:53	60.7	60.7	60.5
102	2023-06-20	13:11:54	60.1	60.6	60.2
103	2023-06-20	13:11:55	60.0	60.3	60.1

104		2023-06-20	13:11:56	60.0	60.1	60.0
105		2023-06-20	13:11:57	60.3	60.2	60.0
106		2023-06-20	13:11:58	61.4	61.4	60.1
107		2023-06-20	13:11:59	60.2	61.0	60.4
108		2023-06-20	13:12:00	60.0	60.5	60.2
109		2023-06-20	13:12:01	60.3	60.3	60.1
110		2023-06-20	13:12:02	60.2	60.2	60.1
111		2023-06-20	13:12:03	60.1	60.3	60.1
112		2023-06-20	13:12:04	60.1	60.3	60.1
113		2023-06-20	13:12:05	60.4	60.4	60.2
114		2023-06-20	13:12:06	59.7	60.3	59.9
115		2023-06-20	13:12:07	59.7	60.1	59.8
116		2023-06-20	13:12:08	60.1	60.1	59.8
117		2023-06-20	13:12:09	60.6	60.8	60.0
118		2023-06-20	13:12:10	60.3	60.3	60.1
119		2023-06-20	13:12:11	60.4	60.4	60.3
120		2023-06-20	13:12:12	60.0	60.4	60.1
121		2023-06-20	13:12:13	60.1	60.2	60.0
122		2023-06-20	13:12:14	59.6	60.1	59.8
123		2023-06-20	13:12:15	59.5	59.7	59.6
124		2023-06-20	13:12:16	60.2	60.1	59.6
125		2023-06-20	13:12:17	60.8	60.6	60.1
126		2023-06-20	13:12:18	60.2	60.5	60.2
127		2023-06-20	13:12:19	60.6	60.5	60.4
128	Stop	2023-06-20	13:12:20	** Run Stopped to prevent approaching vehicle from contaminating data		
129	Run	2023-06-20	13:12:45			
130		2023-06-20	13:12:45	60.9	61.0	60.6
131		2023-06-20	13:12:46	61.0	61.0	60.9
132		2023-06-20	13:12:47	60.6	60.9	60.7
133		2023-06-20	13:12:48	60.7	60.8	60.6
134		2023-06-20	13:12:49	60.8	60.9	60.7
135		2023-06-20	13:12:50	60.5	60.7	60.5
136		2023-06-20	13:12:51	60.5	60.7	60.5
137		2023-06-20	13:12:52	60.3	60.5	60.3
138		2023-06-20	13:12:53	60.6	60.6	60.3
139		2023-06-20	13:12:54	60.6	60.7	60.5
140		2023-06-20	13:12:55	60.4	60.5	60.2
141		2023-06-20	13:12:56	60.3	60.6	60.3
142		2023-06-20	13:12:57	60.5	60.5	60.3
143		2023-06-20	13:12:58	60.4	60.5	60.3
144		2023-06-20	13:12:59	60.7	60.7	60.4
145		2023-06-20	13:13:00	59.8	60.5	60.1
146		2023-06-20	13:13:01	60.7	60.5	60.1
147		2023-06-20	13:13:02	60.5	60.6	60.4
148		2023-06-20	13:13:03	60.5	60.5	60.4
149		2023-06-20	13:13:04	60.0	60.4	60.2
150		2023-06-20	13:13:05	60.2	60.2	60.2
151		2023-06-20	13:13:06	59.8	60.2	60.0
152		2023-06-20	13:13:07	60.2	60.2	60.0
153		2023-06-20	13:13:08	60.3	60.3	60.1
154		2023-06-20	13:13:09	60.4	60.4	60.1
155		2023-06-20	13:13:10	60.5	60.6	60.2

156	2023-06-20	13:13:11	60.7	60.7	60.5
157	2023-06-20	13:13:12	60.7	60.8	60.6
158	2023-06-20	13:13:13	59.8	60.6	60.1
159	2023-06-20	13:13:14	59.9	60.2	59.9
160	2023-06-20	13:13:15	59.9	60.1	59.9
161	2023-06-20	13:13:16	60.7	60.5	60.0
162	2023-06-20	13:13:17	60.8	60.7	60.4
163	2023-06-20	13:13:18	60.7	60.8	60.5
164	2023-06-20	13:13:19	60.1	60.8	60.4
165	2023-06-20	13:13:20	60.4	60.4	60.1
166	2023-06-20	13:13:21	60.8	60.7	60.4
167	2023-06-20	13:13:22	60.5	60.6	60.4
168	2023-06-20	13:13:23	60.1	60.6	60.2
169	2023-06-20	13:13:24	59.9	60.3	59.9
170	2023-06-20	13:13:25	59.7	60.2	59.9
171	2023-06-20	13:13:26	60.1	60.1	59.8
172	2023-06-20	13:13:27	59.9	60.1	59.8
173	2023-06-20	13:13:28	60.3	60.1	59.9
174	2023-06-20	13:13:29	59.9	60.2	59.9
175	2023-06-20	13:13:30	60.2	60.2	60.0
176	2023-06-20	13:13:31	60.5	60.4	60.2
177	2023-06-20	13:13:32	60.3	60.4	60.2
178	2023-06-20	13:13:33	60.0	60.3	60.1
179	2023-06-20	13:13:34	59.8	60.1	59.8
180	2023-06-20	13:13:35	60.5	60.4	60.0
181	2023-06-20	13:13:36	60.0	60.2	60.0
182	2023-06-20	13:13:37	60.2	60.2	59.9
183	2023-06-20	13:13:38	60.3	60.3	60.2
184	2023-06-20	13:13:39	60.1	60.3	60.1
185	2023-06-20	13:13:40	59.9	60.2	60.0
186	2023-06-20	13:13:41	59.6	60.0	59.7
187	2023-06-20	13:13:42	59.7	59.8	59.6
188	2023-06-20	13:13:43	60.0	59.9	59.7
189	2023-06-20	13:13:44	60.0	60.0	59.7
190	2023-06-20	13:13:45	60.4	60.3	60.0
191	2023-06-20	13:13:46	60.8	60.7	60.2
192	2023-06-20	13:13:47	60.6	60.7	60.6
193	2023-06-20	13:13:48	60.6	60.7	60.6
194	2023-06-20	13:13:49	60.1	60.6	60.3
195	2023-06-20	13:13:50	59.7	60.3	59.9
196	2023-06-20	13:13:51	59.9	59.9	59.8
197	2023-06-20	13:13:52	60.1	60.1	59.9
198	2023-06-20	13:13:53	60.1	60.1	60.0
199	2023-06-20	13:13:54	60.4	60.4	60.1
200	2023-06-20	13:13:55	60.9	60.7	60.4
201	2023-06-20	13:13:56	61.1	61.0	60.7
202	2023-06-20	13:13:57	60.4	60.9	60.6
203	2023-06-20	13:13:58	60.3	60.6	60.4
204	2023-06-20	13:13:59	60.6	60.6	60.4
205	2023-06-20	13:14:00	59.7	60.6	60.0
206	2023-06-20	13:14:01	60.2	60.2	60.0
207	2023-06-20	13:14:02	60.1	60.3	60.1

208	2023-06-20	13:14:03	60.1	60.2	60.0
209	2023-06-20	13:14:04	60.3	60.3	60.1
210	2023-06-20	13:14:05	60.5	60.4	60.1
211	2023-06-20	13:14:06	60.0	60.4	60.1
212	2023-06-20	13:14:07	60.0	60.1	60.0
213	2023-06-20	13:14:08	60.0	60.1	59.9
214	2023-06-20	13:14:09	60.2	60.2	60.0
215	2023-06-20	13:14:10	60.1	60.2	60.1
216	2023-06-20	13:14:11	59.8	60.2	59.9
217	2023-06-20	13:14:12	60.6	60.4	59.9
218	2023-06-20	13:14:13	60.7	60.7	60.4
219	2023-06-20	13:14:14	60.1	60.5	60.3
220	2023-06-20	13:14:15	60.4	60.4	60.2
221	2023-06-20	13:14:16	60.0	60.4	60.0
222	2023-06-20	13:14:17	60.2	60.3	60.1
223	2023-06-20	13:14:18	59.9	60.2	60.0
224	2023-06-20	13:14:19	59.9	60.1	59.9
225	2023-06-20	13:14:20	60.5	60.4	59.9
226	2023-06-20	13:14:21	60.1	60.4	60.1
227	2023-06-20	13:14:22	59.9	60.1	60.0
228	2023-06-20	13:14:23	60.5	60.3	60.0
229	2023-06-20	13:14:24	59.9	60.3	60.0
230	2023-06-20	13:14:25	60.0	60.1	59.9
231	2023-06-20	13:14:26	59.6	60.0	59.8
232	2023-06-20	13:14:27	59.5	59.8	59.6
233	2023-06-20	13:14:28	60.1	60.0	59.6
234	2023-06-20	13:14:29	60.4	60.5	60.0
235	2023-06-20	13:14:30	59.6	60.2	59.8
236	2023-06-20	13:14:31	59.9	59.9	59.7
237	2023-06-20	13:14:32	60.2	60.1	59.8
238	2023-06-20	13:14:33	60.3	60.2	60.1
239	2023-06-20	13:14:34	60.4	60.3	60.2
240	2023-06-20	13:14:35	60.0	60.3	60.1
241	2023-06-20	13:14:36	59.9	60.1	59.9
242	2023-06-20	13:14:37	60.0	60.1	60.0
243	2023-06-20	13:14:38	60.1	60.1	60.0
244	2023-06-20	13:14:39	60.1	60.2	59.9
245	2023-06-20	13:14:40	60.3	60.3	60.1
246	2023-06-20	13:14:41	60.2	60.3	60.2
247	2023-06-20	13:14:42	60.2	60.3	60.1
248	2023-06-20	13:14:43	60.5	60.4	60.3
249	2023-06-20	13:14:44	60.4	60.5	60.4
250	2023-06-20	13:14:45	60.1	60.4	60.2
251	2023-06-20	13:14:46	60.5	60.6	60.2
252	2023-06-20	13:14:47	59.8	60.3	59.9
253	2023-06-20	13:14:48	60.3	60.3	59.9
254	2023-06-20	13:14:49	60.0	60.3	60.0
255	2023-06-20	13:14:50	60.1	60.2	60.0
256	2023-06-20	13:14:51	60.1	60.2	60.0
257	2023-06-20	13:14:52	60.5	60.4	60.2
258	2023-06-20	13:14:53	60.7	60.7	60.2
259	2023-06-20	13:14:54	59.9	60.7	60.2

260	2023-06-20	13:14:55	60.5	60.4	60.2
261	2023-06-20	13:14:56	60.3	60.4	60.2
262	2023-06-20	13:14:57	60.1	60.4	60.1
263	2023-06-20	13:14:58	59.8	60.2	59.9
264	2023-06-20	13:14:59	61.8	61.6	59.9
265	2023-06-20	13:15:00	60.5	61.3	60.8
266	2023-06-20	13:15:01	59.6	60.8	60.1
267	2023-06-20	13:15:02	60.2	60.2	60.1
268	2023-06-20	13:15:03	59.8	60.1	59.9
269	2023-06-20	13:15:04	60.9	60.6	59.9
270	2023-06-20	13:15:05	60.6	60.7	60.5
271	2023-06-20	13:15:06	60.1	60.6	60.3
272	2023-06-20	13:15:07	60.4	60.4	60.3
273	2023-06-20	13:15:08	59.9	60.5	60.0
274	2023-06-20	13:15:09	60.5	60.4	60.0
275	2023-06-20	13:15:10	60.4	60.5	60.2
276	2023-06-20	13:15:11	60.0	60.4	60.1
277	2023-06-20	13:15:12	60.0	60.1	60.0
278	2023-06-20	13:15:13	59.7	60.0	59.8
279	2023-06-20	13:15:14	59.8	59.9	59.6
280	2023-06-20	13:15:15	60.1	60.0	59.8
281	2023-06-20	13:15:16	60.2	60.1	60.0
282	2023-06-20	13:15:17	60.3	60.2	60.1
283	2023-06-20	13:15:18	60.5	60.4	60.2
284	2023-06-20	13:15:19	60.5	60.5	60.4
285	2023-06-20	13:15:20	59.7	60.4	60.0
286	2023-06-20	13:15:21	59.7	60.0	59.8
287	2023-06-20	13:15:22	60.1	60.0	59.8
288	2023-06-20	13:15:23	59.8	60.0	59.7
289	2023-06-20	13:15:24	60.0	60.1	59.8
290	2023-06-20	13:15:25	59.9	60.0	59.8
291	2023-06-20	13:15:26	60.2	60.2	60.0
292	2023-06-20	13:15:27	60.2	60.2	60.1
293	2023-06-20	13:15:28	59.8	60.1	59.9
294	2023-06-20	13:15:29	60.2	60.1	59.8
295	2023-06-20	13:15:30	59.9	60.1	59.9
296	2023-06-20	13:15:31	59.9	60.0	59.9
297	2023-06-20	13:15:32	59.9	60.0	59.9
298	2023-06-20	13:15:33	59.8	59.9	59.8
299	2023-06-20	13:15:34	59.9	59.9	59.7
300	2023-06-20	13:15:35	60.0	60.0	59.9
301	2023-06-20	13:15:36	59.5	59.9	59.6
302	2023-06-20	13:15:37	59.5	59.6	59.5
303	2023-06-20	13:15:38	60.3	60.1	59.6
304	2023-06-20	13:15:39	59.9	60.1	59.9
305	2023-06-20	13:15:40	60.1	60.1	60.0
306	2023-06-20	13:15:41	59.6	60.2	59.8
307	2023-06-20	13:15:42	59.9	59.9	59.7
308	2023-06-20	13:15:43	59.7	59.9	59.7
309	2023-06-20	13:15:44	59.8	59.8	59.7
310	2023-06-20	13:15:45	59.9	59.9	59.8
311	2023-06-20	13:15:46	60.2	60.0	59.8

312	2023-06-20	13:15:47	59.6	60.0	59.7
313	2023-06-20	13:15:48	60.4	60.2	59.8
314	2023-06-20	13:15:49	60.0	60.3	60.1
315	2023-06-20	13:15:50	60.3	60.3	60.1
316	2023-06-20	13:15:51	60.0	60.3	60.0
317	2023-06-20	13:15:52	60.0	60.1	59.9
318	2023-06-20	13:15:53	59.5	60.1	59.7
319	2023-06-20	13:15:54	59.9	59.9	59.7
320	2023-06-20	13:15:55	59.8	59.9	59.7
321	2023-06-20	13:15:56	60.1	60.1	59.9
322	2023-06-20	13:15:57	60.0	60.1	59.9
323	2023-06-20	13:15:58	60.1	60.1	59.9
324	2023-06-20	13:15:59	60.1	60.3	60.0
325	2023-06-20	13:16:00	60.1	60.1	59.9
326	2023-06-20	13:16:01	59.6	60.3	59.8
327	2023-06-20	13:16:02	60.3	60.2	59.7
328	2023-06-20	13:16:03	60.2	60.3	60.2
329	2023-06-20	13:16:04	60.6	60.5	60.2
330	2023-06-20	13:16:05	61.1	60.9	60.4
331	2023-06-20	13:16:06	60.2	60.8	60.4
332	2023-06-20	13:16:07	60.1	60.4	60.2
333	2023-06-20	13:16:08	60.2	60.3	60.2
334	2023-06-20	13:16:09	60.2	60.2	60.0
335	2023-06-20	13:16:10	60.8	60.6	60.2
336	2023-06-20	13:16:11	59.8	60.6	60.1
337	2023-06-20	13:16:12	60.1	60.2	59.9
338	2023-06-20	13:16:13	60.3	60.3	60.2
339	2023-06-20	13:16:14	60.6	60.5	60.2
340	2023-06-20	13:16:15	60.4	60.6	60.4
341	2023-06-20	13:16:16	60.2	60.4	60.2
342	2023-06-20	13:16:17	60.2	60.3	60.1
343	2023-06-20	13:16:18	60.4	60.5	60.3
344	2023-06-20	13:16:19	60.8	60.7	60.3
345	2023-06-20	13:16:20	60.5	60.7	60.5
346	2023-06-20	13:16:21	60.5	60.6	60.5
347	2023-06-20	13:16:22	60.6	60.6	60.5
348	2023-06-20	13:16:23	60.5	60.6	60.5
349	2023-06-20	13:16:24	60.5	60.7	60.4
350	2023-06-20	13:16:25	60.1	60.5	60.2
351	2023-06-20	13:16:26	60.8	60.6	60.1
352	2023-06-20	13:16:27	60.5	60.6	60.4
353	2023-06-20	13:16:28	61.1	60.9	60.5
354	2023-06-20	13:16:29	60.3	60.9	60.5
355	2023-06-20	13:16:30	60.2	60.6	60.3
356	2023-06-20	13:16:31	60.6	60.6	60.3
357	2023-06-20	13:16:32	60.3	60.6	60.4
358	2023-06-20	13:16:33	60.2	60.4	60.2
359	2023-06-20	13:16:34	60.4	60.4	60.2
360	2023-06-20	13:16:35	61.4	61.3	60.3
361	2023-06-20	13:16:36	60.3	61.0	60.6
362	2023-06-20	13:16:37	60.7	60.7	60.5
363	2023-06-20	13:16:38	60.7	60.8	60.6

364	2023-06-20	13:16:39	61.0	61.0	60.5
365	2023-06-20	13:16:40	60.4	60.9	60.6
366	2023-06-20	13:16:41	60.2	60.6	60.3
367	2023-06-20	13:16:42	60.5	60.5	60.2
368	2023-06-20	13:16:43	59.7	60.4	60.0
369	2023-06-20	13:16:44	60.1	60.2	60.0
370	2023-06-20	13:16:45	60.0	60.3	60.0
371	2023-06-20	13:16:46	59.9	60.0	59.9
372	2023-06-20	13:16:47	60.7	60.5	60.0
373	2023-06-20	13:16:48	60.5	60.6	60.4
374	2023-06-20	13:16:49	60.4	60.5	60.4
375	2023-06-20	13:16:50	60.5	60.5	60.4
376	2023-06-20	13:16:51	60.5	60.6	60.4
377	2023-06-20	13:16:52	60.4	60.6	60.4
378	2023-06-20	13:16:53	60.6	60.5	60.4
379	2023-06-20	13:16:54	60.3	60.5	60.3
380	2023-06-20	13:16:55	60.4	60.4	60.3
381	2023-06-20	13:16:56	60.0	60.5	60.1
382	2023-06-20	13:16:57	60.5	60.4	60.1
383	2023-06-20	13:16:58	60.1	60.4	60.2
384	2023-06-20	13:16:59	60.3	60.3	60.1
385	2023-06-20	13:17:00	60.7	60.6	60.4
386	2023-06-20	13:17:01	60.5	60.6	60.4
387	2023-06-20	13:17:02	60.2	60.6	60.3
388	2023-06-20	13:17:03	60.0	60.3	60.1
389	2023-06-20	13:17:04	59.5	60.2	59.7
390	2023-06-20	13:17:05	59.8	59.9	59.7
391	2023-06-20	13:17:06	59.7	59.8	59.7
392	2023-06-20	13:17:07	60.0	59.9	59.7
393	2023-06-20	13:17:08	60.5	60.3	59.9
394	2023-06-20	13:17:09	60.3	60.3	60.3
395	2023-06-20	13:17:10	60.5	60.6	60.3
396	2023-06-20	13:17:11	59.6	60.4	59.9
397	2023-06-20	13:17:12	60.0	60.1	59.8
398	2023-06-20	13:17:13	60.3	60.2	59.9
399	2023-06-20	13:17:14	60.6	60.5	60.1
400	2023-06-20	13:17:15	59.8	60.5	60.1
401	2023-06-20	13:17:16	60.4	60.3	60.1
402	2023-06-20	13:17:17	60.1	60.4	60.2
403	2023-06-20	13:17:18	60.5	60.4	60.1
404	2023-06-20	13:17:19	60.3	60.4	60.2
405	2023-06-20	13:17:20	60.5	60.5	60.3
406	2023-06-20	13:17:21	60.3	60.5	60.3
407	2023-06-20	13:17:22	60.3	60.5	60.3
408	2023-06-20	13:17:23	60.4	60.5	60.2
409	2023-06-20	13:17:24	60.2	60.4	60.2
410	2023-06-20	13:17:25	60.4	60.5	60.3
411	2023-06-20	13:17:26	59.9	60.4	60.1
412	2023-06-20	13:17:27	60.0	60.2	60.0
413	2023-06-20	13:17:28	60.0	60.1	59.9
414	2023-06-20	13:17:29	59.9	60.1	59.8
415	2023-06-20	13:17:30	59.8	59.9	59.8

416	2023-06-20	13:17:31	60.5	60.3	59.8
417	2023-06-20	13:17:32	60.0	60.3	60.1
418	2023-06-20	13:17:33	60.3	60.3	60.1
419	2023-06-20	13:17:34	60.2	60.5	60.1
420	2023-06-20	13:17:35	60.1	60.3	60.1
421	2023-06-20	13:17:36	60.3	60.2	60.0
422	2023-06-20	13:17:37	60.2	60.3	60.1
423	2023-06-20	13:17:38	60.1	60.2	60.0
424	2023-06-20	13:17:39	60.3	60.3	60.1
425	2023-06-20	13:17:40	59.5	60.2	59.8
426	2023-06-20	13:17:41	60.0	60.0	59.8
427	2023-06-20	13:17:42	60.1	60.1	60.0
428	2023-06-20	13:17:43	59.7	60.0	59.8
429	2023-06-20	13:17:44	60.1	60.0	59.8
430	2023-06-20	13:17:45	60.3	60.3	60.0
431	2023-06-20	13:17:46	60.3	60.3	60.1
432	2023-06-20	13:17:47	59.7	60.2	59.9
433	2023-06-20	13:17:48	60.2	60.1	59.9
434	2023-06-20	13:17:49	59.9	60.1	59.9
435	2023-06-20	13:17:50	60.0	60.0	59.9
436	2023-06-20	13:17:51	59.8	60.0	59.8
437	2023-06-20	13:17:52	60.6	60.4	59.9
438	2023-06-20	13:17:53	60.1	60.4	60.2
439	2023-06-20	13:17:54	60.4	60.3	60.1
440	2023-06-20	13:17:55	60.5	60.5	60.3
441	2023-06-20	13:17:56	60.0	60.4	60.2
442	2023-06-20	13:17:57	59.9	60.1	60.0
443	2023-06-20	13:17:58	60.5	60.3	60.0
444	2023-06-20	13:17:59	60.5	60.4	60.3
445	2023-06-20	13:18:00	60.2	60.5	60.3
446	2023-06-20	13:18:01	60.7	60.6	60.3
447	2023-06-20	13:18:02	60.6	60.6	60.5
448	2023-06-20	13:18:03	60.5	60.6	60.5
449	2023-06-20	13:18:04	60.2	60.5	60.3
450	2023-06-20	13:18:05	60.0	60.3	60.1
451	2023-06-20	13:18:06	60.1	60.3	60.0
452	2023-06-20	13:18:07	60.4	60.3	60.0
453	2023-06-20	13:18:08	59.9	60.3	60.0
454	2023-06-20	13:18:09	59.8	60.0	59.8
455	2023-06-20	13:18:10	60.5	60.3	59.9
456	2023-06-20	13:18:11	60.6	60.5	60.3
457	2023-06-20	13:18:12	60.2	60.5	60.3
458	2023-06-20	13:18:13	60.3	60.4	60.3
459	2023-06-20	13:18:14	60.0	60.3	60.1
460	2023-06-20	13:18:15	60.1	60.2	60.1
461	2023-06-20	13:18:16	60.5	60.4	60.1
462	2023-06-20	13:18:17	60.4	60.5	60.3
463	2023-06-20	13:18:18	59.8	60.3	60.0
464	2023-06-20	13:18:19	60.2	60.3	60.1
465	2023-06-20	13:18:20	60.3	60.2	60.0
466	2023-06-20	13:18:21	60.3	60.3	60.2
467	2023-06-20	13:18:22	60.5	60.4	60.2

468	2023-06-20	13:18:23	60.2	60.5	60.3
469	2023-06-20	13:18:24	60.2	60.5	60.1
470	2023-06-20	13:18:25	60.2	60.2	59.9
471	2023-06-20	13:18:26	60.5	60.5	60.2
472	2023-06-20	13:18:27	60.3	60.6	60.4
473	2023-06-20	13:18:28	60.4	60.4	60.3
474	2023-06-20	13:18:29	60.3	60.5	60.2
475	2023-06-20	13:18:30	60.1	60.2	60.1
476	2023-06-20	13:18:31	60.2	60.3	60.1
477	2023-06-20	13:18:32	60.3	60.2	60.1
478	2023-06-20	13:18:33	60.2	60.3	60.1
479	2023-06-20	13:18:34	60.4	60.4	60.2
480	2023-06-20	13:18:35	60.2	60.4	60.2
481	2023-06-20	13:18:36	60.7	60.5	60.2
482	2023-06-20	13:18:37	60.2	60.7	60.3
483	2023-06-20	13:18:38	60.0	60.3	60.1
484	2023-06-20	13:18:39	59.8	60.2	59.9
485	2023-06-20	13:18:40	59.9	60.0	59.8
486	2023-06-20	13:18:41	59.6	60.0	59.7
487	2023-06-20	13:18:42	59.4	59.7	59.5
488	2023-06-20	13:18:43	59.8	59.7	59.5
489	2023-06-20	13:18:44	60.3	60.2	59.7
490	2023-06-20	13:18:45	60.3	60.3	60.2
491	2023-06-20	13:18:46	60.2	60.3	60.2
492	2023-06-20	13:18:47	60.3	60.4	60.1
493	2023-06-20	13:18:48	60.1	60.2	60.1
494	2023-06-20	13:18:49	60.3	60.3	60.1
495	2023-06-20	13:18:50	60.6	60.5	60.3
496	2023-06-20	13:18:51	60.3	60.5	60.3
497	2023-06-20	13:18:52	60.0	60.4	60.1
498	2023-06-20	13:18:53	60.1	60.2	60.1
499	2023-06-20	13:18:54	60.4	60.3	60.0
500	2023-06-20	13:18:55	60.2	60.4	60.2
501	2023-06-20	13:18:56	60.4	60.4	60.2
502	2023-06-20	13:18:57	60.4	60.4	60.3
503	2023-06-20	13:18:58	60.7	60.7	60.3
504	2023-06-20	13:18:59	60.2	60.6	60.3
505	2023-06-20	13:19:00	60.5	60.5	60.3
506	2023-06-20	13:19:01	60.4	60.5	60.4
507	2023-06-20	13:19:02	60.0	60.4	60.1
508	2023-06-20	13:19:03	60.3	60.4	60.2
509	2023-06-20	13:19:04	60.6	60.5	60.3
510	2023-06-20	13:19:05	59.7	60.4	60.0
511	2023-06-20	13:19:06	60.4	60.4	60.0
512	2023-06-20	13:19:07	60.4	60.4	60.1
513	2023-06-20	13:19:08	60.3	60.4	60.3
514	2023-06-20	13:19:09	60.4	60.5	60.2
515	2023-06-20	13:19:10	61.1	60.9	60.5
516	2023-06-20	13:19:11	60.2	61.0	60.3
517	2023-06-20	13:19:12	60.7	60.6	60.4
518	2023-06-20	13:19:13	60.4	60.6	60.4
519	2023-06-20	13:19:14	60.2	60.5	60.2

520	2023-06-20	13:19:15	61.0	60.8	60.3
521	2023-06-20	13:19:16	60.2	60.8	60.4
522	2023-06-20	13:19:17	59.9	60.4	60.0
523	2023-06-20	13:19:18	60.0	60.1	59.8
524	2023-06-20	13:19:19	60.1	60.2	60.0
525	2023-06-20	13:19:20	60.2	60.2	60.0
526	2023-06-20	13:19:21	60.2	60.2	60.1
527	2023-06-20	13:19:22	61.2	60.9	60.2
528	2023-06-20	13:19:23	60.1	60.9	60.3
529	2023-06-20	13:19:24	60.0	60.3	60.1
530	2023-06-20	13:19:25	60.6	60.4	60.2
531	2023-06-20	13:19:26	59.8	60.4	60.0
532	2023-06-20	13:19:27	60.3	60.2	60.0
533	2023-06-20	13:19:28	60.4	60.3	60.2
534	2023-06-20	13:19:29	60.6	60.5	60.3
535	2023-06-20	13:19:30	60.2	60.6	60.3
536	2023-06-20	13:19:31	60.2	60.3	60.1
537	2023-06-20	13:19:32	60.5	60.5	60.2
538	2023-06-20	13:19:33	60.1	60.3	60.2
539	2023-06-20	13:19:34	59.9	60.3	60.0
540	2023-06-20	13:19:35	60.4	60.3	60.0
541	2023-06-20	13:19:36	60.7	60.6	60.3
542	2023-06-20	13:19:37	60.2	60.6	60.3
543	2023-06-20	13:19:38	60.5	60.5	60.2
544	2023-06-20	13:19:39	60.7	60.8	60.5
545	2023-06-20	13:19:40	60.4	60.6	60.4
546	2023-06-20	13:19:41	60.6	60.6	60.4
547	2023-06-20	13:19:42	60.4	60.6	60.4
548	2023-06-20	13:19:43	60.0	60.5	60.1
549	2023-06-20	13:19:44	60.2	60.3	60.1
550	2023-06-20	13:19:45	60.4	60.4	60.2
551	2023-06-20	13:19:46	60.6	60.5	60.2
552	2023-06-20	13:19:47	60.7	60.7	60.5
553	2023-06-20	13:19:48	60.2	60.6	60.4
554	2023-06-20	13:19:49	60.0	60.4	60.2
555	2023-06-20	13:19:50	60.6	60.5	60.1
556	2023-06-20	13:19:51	60.3	60.6	60.3
557	2023-06-20	13:19:52	60.5	60.5	60.2
558	2023-06-20	13:19:53	60.5	60.6	60.4
559	2023-06-20	13:19:54	60.6	60.6	60.4
560	2023-06-20	13:19:55	60.4	60.6	60.4
561	2023-06-20	13:19:56	60.3	60.4	60.3
562	2023-06-20	13:19:57	60.5	60.5	60.4
563	2023-06-20	13:19:58	60.8	60.7	60.4
564	2023-06-20	13:19:59	60.4	60.8	60.4
565	2023-06-20	13:20:00	59.9	60.6	60.2
566	2023-06-20	13:20:01	60.9	60.7	60.1
567	2023-06-20	13:20:02	60.4	60.8	60.5
568	2023-06-20	13:20:03	61.0	60.8	60.5
569	2023-06-20	13:20:04	60.6	60.8	60.6
570	2023-06-20	13:20:05	60.1	60.6	60.2
571	2023-06-20	13:20:06	60.2	60.4	60.2

572		2023-06-20	13:20:07	59.8	60.2	59.9
573		2023-06-20	13:20:08	60.2	60.2	59.9
574		2023-06-20	13:20:09	60.2	60.4	60.1
575		2023-06-20	13:20:10	60.6	60.5	60.1
576		2023-06-20	13:20:11	60.6	60.6	60.4
577		2023-06-20	13:20:12	60.1	60.6	60.3
578		2023-06-20	13:20:13	60.4	60.4	60.2
579		2023-06-20	13:20:14	60.1	60.4	60.2
580		2023-06-20	13:20:15	60.5	60.4	60.2
581		2023-06-20	13:20:16	60.5	60.5	60.4
582		2023-06-20	13:20:17	60.4	60.5	60.4
583		2023-06-20	13:20:18	60.2	60.4	60.2
584		2023-06-20	13:20:19	60.5	60.4	60.2
585		2023-06-20	13:20:20	60.6	60.6	60.4
586		2023-06-20	13:20:21	60.6	60.6	60.5
587		2023-06-20	13:20:22	60.3	60.7	60.4
588		2023-06-20	13:20:23	60.4	60.5	60.4
589		2023-06-20	13:20:24	60.3	60.5	60.3
590		2023-06-20	13:20:25	60.7	60.6	60.3
591		2023-06-20	13:20:26	60.1	60.4	60.2
592		2023-06-20	13:20:27	60.6	60.6	60.2
593		2023-06-20	13:20:28	60.4	60.5	60.3
594		2023-06-20	13:20:29	60.3	60.6	60.3
595		2023-06-20	13:20:30	60.0	60.5	60.1
596		2023-06-20	13:20:31	60.0	60.1	59.9
597		2023-06-20	13:20:32	60.3	60.3	60.1
598		2023-06-20	13:20:33	60.0	60.1	60.0
599		2023-06-20	13:20:34	60.2	60.2	60.0
600		2023-06-20	13:20:35	60.4	60.3	60.1
601		2023-06-20	13:20:36	60.6	60.5	60.3
602		2023-06-20	13:20:37	60.5	60.6	60.4
603		2023-06-20	13:20:38	60.2	60.5	60.3
604		2023-06-20	13:20:39	60.4	60.4	60.3
605		2023-06-20	13:20:40	60.2	60.4	60.3
606	Stop	2023-06-20	13:20:41			
607	Calibration Change	2023-06-20	13:22:41			

Tiger Creek Spillway — Short Term Noise Measurement - Time History, ST-2

Record #	Record Type	Date	Time	LAeq	LASmax	LASmin
1	Run	2023-06-23	11:50:00			
2		2023-06-23	11:50:00	40.5	40.6	40.3
3		2023-06-23	11:50:01	42.7	42.3	40.4
4		2023-06-23	11:50:02	43.2	43.3	42.1
5		2023-06-23	11:50:03	40.0	42.9	41.3
6		2023-06-23	11:50:04	40.2	41.3	40.5
7		2023-06-23	11:50:05	40.8	40.9	40.7
8		2023-06-23	11:50:06	41.2	41.2	40.5
9		2023-06-23	11:50:07	40.4	41.3	40.7
10		2023-06-23	11:50:08	42.6	42.2	40.6
11		2023-06-23	11:50:09	43.9	43.4	42.2
12		2023-06-23	11:50:10	42.0	43.2	42.5
13		2023-06-23	11:50:11	41.7	42.6	42.0
14		2023-06-23	11:50:12	41.8	42.0	41.9
15		2023-06-23	11:50:13	41.6	41.9	41.7
16		2023-06-23	11:50:14	41.3	41.7	41.4
17		2023-06-23	11:50:15	41.3	41.4	41.3
18		2023-06-23	11:50:16	42.1	41.9	41.3
19		2023-06-23	11:50:17	43.9	43.3	41.9
20		2023-06-23	11:50:18	44.7	44.4	43.3
21		2023-06-23	11:50:19	43.7	44.4	43.9
22		2023-06-23	11:50:20	44.7	44.7	43.9
23		2023-06-23	11:50:21	42.6	44.2	43.3
24		2023-06-23	11:50:22	42.8	43.3	43.0
25		2023-06-23	11:50:23	43.4	43.3	43.0
26		2023-06-23	11:50:24	43.1	43.3	43.1
27		2023-06-23	11:50:25	45.0	44.6	43.1
28		2023-06-23	11:50:26	47.7	47.0	44.6
29		2023-06-23	11:50:27	48.3	48.0	47.0
30		2023-06-23	11:50:28	47.5	47.7	47.5
31		2023-06-23	11:50:29	48.5	48.3	47.7
32		2023-06-23	11:50:30	49.7	49.2	48.3
33		2023-06-23	11:50:31	49.9	49.7	49.2
34		2023-06-23	11:50:32	50.3	50.1	49.7
35		2023-06-23	11:50:33	49.9	50.4	49.8
36		2023-06-23	11:50:34	48.9	49.8	49.2
37		2023-06-23	11:50:35	52.1	51.5	49.4
38		2023-06-23	11:50:36	56.2	55.2	51.5
39		2023-06-23	11:50:37	58.8	57.8	55.2
40		2023-06-23	11:50:38	59.5	59.0	57.9
41		2023-06-23	11:50:39	60.0	59.7	59.0
42		2023-06-23	11:50:40	59.1	59.9	59.2
43		2023-06-23	11:50:41	57.3	59.1	58.1
44		2023-06-23	11:50:42	56.1	58.1	56.9
45		2023-06-23	11:50:43	52.8	56.9	54.7
46		2023-06-23	11:50:44	50.0	54.7	52.3
47		2023-06-23	11:50:45	47.4	52.3	49.9
48		2023-06-23	11:50:46	46.0	49.8	47.9
49		2023-06-23	11:50:47	45.1	47.9	46.4
50		2023-06-23	11:50:48	47.0	47.1	46.1
51		2023-06-23	11:50:49	46.8	46.9	46.6

52	2023-06-23	11:50:50	49.1	48.6	47.0
53	2023-06-23	11:50:51	45.9	48.6	46.9
54	2023-06-23	11:50:52	44.2	46.9	45.4
55	2023-06-23	11:50:53	44.2	45.4	44.7
56	2023-06-23	11:50:54	44.1	44.8	44.2
57	2023-06-23	11:50:55	44.4	44.5	44.0
58	2023-06-23	11:50:56	43.3	44.4	43.6
59	2023-06-23	11:50:57	44.8	44.7	43.7
60	2023-06-23	11:50:58	47.6	46.7	44.8
61	2023-06-23	11:50:59	44.6	46.5	45.4
62	2023-06-23	11:51:00	43.3	45.5	44.2
63	2023-06-23	11:51:01	42.1	44.4	43.1
64	2023-06-23	11:51:02	42.4	43.1	42.7
65	2023-06-23	11:51:03	43.7	43.5	42.7
66	2023-06-23	11:51:04	43.3	43.8	43.2
67	2023-06-23	11:51:05	43.6	43.5	42.9
68	2023-06-23	11:51:06	44.1	44.4	43.6
69	2023-06-23	11:51:07	40.9	43.5	42.1
70	2023-06-23	11:51:08	41.6	42.1	41.8
71	2023-06-23	11:51:09	42.3	42.2	41.6
72	2023-06-23	11:51:10	46.2	45.3	42.2
73	2023-06-23	11:51:11	47.1	46.5	45.3
74	2023-06-23	11:51:12	41.7	46.4	43.9
75	2023-06-23	11:51:13	44.3	44.3	43.6
76	2023-06-23	11:51:14	42.4	44.4	43.1
77	2023-06-23	11:51:15	42.3	43.1	42.6
78	2023-06-23	11:51:16	43.1	43.2	42.2
79	2023-06-23	11:51:17	42.9	43.7	42.8
80	2023-06-23	11:51:18	40.5	42.8	41.5
81	2023-06-23	11:51:19	44.4	43.8	41.5
82	2023-06-23	11:51:20	41.4	43.8	42.3
83	2023-06-23	11:51:21	40.1	42.3	41.1
84	2023-06-23	11:51:22	43.0	42.6	40.9
85	2023-06-23	11:51:23	41.6	42.5	41.9
86	2023-06-23	11:51:24	42.9	42.6	41.9
87	2023-06-23	11:51:25	42.4	42.5	42.5
88	2023-06-23	11:51:26	44.6	44.2	42.4
89	2023-06-23	11:51:27	46.0	45.5	44.2
90	2023-06-23	11:51:28	47.8	47.2	45.5
91	2023-06-23	11:51:29	52.8	51.8	47.2
92	2023-06-23	11:51:30	57.6	56.5	51.9
93	2023-06-23	11:51:31	58.4	57.7	56.5
94	2023-06-23	11:51:32	57.6	57.7	57.6
95	2023-06-23	11:51:33	54.0	57.6	55.5
96	2023-06-23	11:51:34	49.5	55.5	52.8
97	2023-06-23	11:51:35	49.8	52.8	51.1
98	2023-06-23	11:51:36	49.3	51.1	50.1
99	2023-06-23	11:51:37	48.7	50.1	49.2
100	2023-06-23	11:51:38	47.2	49.2	47.9
101	2023-06-23	11:51:39	43.2	47.9	45.5
102	2023-06-23	11:51:40	41.8	45.5	43.5
103	2023-06-23	11:51:41	41.5	43.5	42.4

104	2023-06-23	11:51:42	41.8	42.4	42.0
105	2023-06-23	11:51:43	41.1	42.1	41.5
106	2023-06-23	11:51:44	41.1	41.5	41.2
107	2023-06-23	11:51:45	40.8	41.3	40.8
108	2023-06-23	11:51:46	40.8	41.0	40.6
109	2023-06-23	11:51:47	41.0	41.1	40.6
110	2023-06-23	11:51:48	40.9	41.1	40.7
111	2023-06-23	11:51:49	40.6	41.1	40.8
112	2023-06-23	11:51:50	40.5	40.8	40.6
113	2023-06-23	11:51:51	39.8	40.6	40.0
114	2023-06-23	11:51:52	39.5	40.0	39.7
115	2023-06-23	11:51:53	40.2	40.3	39.4
116	2023-06-23	11:51:54	41.0	40.8	40.3
117	2023-06-23	11:51:55	39.1	40.7	39.7
118	2023-06-23	11:51:56	38.5	39.7	38.9
119	2023-06-23	11:51:57	38.7	38.9	38.6
120	2023-06-23	11:51:58	39.1	39.1	38.8
121	2023-06-23	11:51:59	38.3	38.9	38.6
122	2023-06-23	11:52:00	37.9	38.6	38.1
123	2023-06-23	11:52:01	38.8	38.6	38.1
124	2023-06-23	11:52:02	38.9	38.8	38.6
125	2023-06-23	11:52:03	39.0	39.0	38.7
126	2023-06-23	11:52:04	39.7	39.5	39.0
127	2023-06-23	11:52:05	40.2	40.0	39.5
128	2023-06-23	11:52:06	39.5	40.0	39.7
129	2023-06-23	11:52:07	39.4	39.7	39.4
130	2023-06-23	11:52:08	39.1	39.4	39.2
131	2023-06-23	11:52:09	38.9	39.3	39.0
132	2023-06-23	11:52:10	38.7	39.0	38.8
133	2023-06-23	11:52:11	38.8	38.9	38.7
134	2023-06-23	11:52:12	38.5	38.8	38.6
135	2023-06-23	11:52:13	38.3	38.6	38.4
136	2023-06-23	11:52:14	38.0	38.5	38.1
137	2023-06-23	11:52:15	38.0	38.2	38.0
138	2023-06-23	11:52:16	37.7	38.0	37.8
139	2023-06-23	11:52:17	37.8	37.9	37.8
140	2023-06-23	11:52:18	38.5	38.3	37.8
141	2023-06-23	11:52:19	38.2	38.4	38.2
142	2023-06-23	11:52:20	39.1	38.9	38.2
143	2023-06-23	11:52:21	38.8	38.9	38.8
144	2023-06-23	11:52:22	39.6	39.4	38.9
145	2023-06-23	11:52:23	39.1	39.4	39.2
146	2023-06-23	11:52:24	39.2	39.2	39.1
147	2023-06-23	11:52:25	39.7	39.6	39.2
148	2023-06-23	11:52:26	38.8	39.4	39.0
149	2023-06-23	11:52:27	38.9	39.1	38.9
150	2023-06-23	11:52:28	39.3	39.3	38.8
151	2023-06-23	11:52:29	41.6	40.9	39.3
152	2023-06-23	11:52:30	43.1	42.5	41.0
153	2023-06-23	11:52:31	43.1	43.0	42.5
154	2023-06-23	11:52:32	45.4	44.9	42.9
155	2023-06-23	11:52:33	46.3	45.9	44.9

156	2023-06-23	11:52:34	47.8	47.3	45.9
157	2023-06-23	11:52:35	47.8	47.9	46.8
158	2023-06-23	11:52:36	53.0	51.9	48.0
159	2023-06-23	11:52:37	55.4	54.5	51.9
160	2023-06-23	11:52:38	57.0	56.2	54.6
161	2023-06-23	11:52:39	57.3	57.0	56.2
162	2023-06-23	11:52:40	56.6	57.0	56.7
163	2023-06-23	11:52:41	57.8	57.5	56.7
164	2023-06-23	11:52:42	59.6	59.1	57.6
165	2023-06-23	11:52:43	62.2	61.6	59.2
166	2023-06-23	11:52:44	64.1	63.7	61.5
167	2023-06-23	11:52:45	72.7	71.5	63.7
168	2023-06-23	11:52:46	75.3	74.2	71.6
169	2023-06-23	11:52:47	73.3	74.1	73.4
170	2023-06-23	11:52:48	73.1	73.7	73.3
171	2023-06-23	11:52:49	68.5	73.2	70.8
172	2023-06-23	11:52:50	63.8	70.8	67.7
173	2023-06-23	11:52:51	58.9	67.7	64.3
174	2023-06-23	11:52:52	55.5	64.3	60.9
175	2023-06-23	11:52:53	51.6	60.8	57.3
176	2023-06-23	11:52:54	47.4	57.3	53.8
177	2023-06-23	11:52:55	48.1	53.7	51.2
178	2023-06-23	11:52:56	51.2	51.4	50.5
179	2023-06-23	11:52:57	54.3	53.6	51.5
180	2023-06-23	11:52:58	51.7	53.4	52.3
181	2023-06-23	11:52:59	47.9	52.2	50.1
182	2023-06-23	11:53:00	48.0	50.1	48.9
183	2023-06-23	11:53:01	48.2	48.9	48.5
184	2023-06-23	11:53:02	50.6	50.0	48.6
185	2023-06-23	11:53:03	48.4	50.0	49.0
186	2023-06-23	11:53:04	45.4	49.0	47.1
187	2023-06-23	11:53:05	45.2	47.1	46.0
188	2023-06-23	11:53:06	45.9	46.1	45.9
189	2023-06-23	11:53:07	44.0	46.0	44.7
190	2023-06-23	11:53:08	42.0	44.7	43.2
191	2023-06-23	11:53:09	42.4	43.2	42.4
192	2023-06-23	11:53:10	46.0	45.2	43.0
193	2023-06-23	11:53:11	47.9	47.1	45.2
194	2023-06-23	11:53:12	49.3	48.7	47.1
195	2023-06-23	11:53:13	48.4	48.7	48.4
196	2023-06-23	11:53:14	50.6	50.1	48.6
197	2023-06-23	11:53:15	50.0	50.4	49.9
198	2023-06-23	11:53:16	46.2	49.8	47.8
199	2023-06-23	11:53:17	43.9	47.8	45.9
200	2023-06-23	11:53:18	47.3	47.0	46.2
201	2023-06-23	11:53:19	41.8	46.7	44.2
202	2023-06-23	11:53:20	39.7	44.2	42.0
203	2023-06-23	11:53:21	38.7	41.9	40.2
204	2023-06-23	11:53:22	38.5	40.2	39.2
205	2023-06-23	11:53:23	39.5	39.5	39.3
206	2023-06-23	11:53:24	39.8	39.7	39.5
207	2023-06-23	11:53:25	40.3	40.3	39.6

208	2023-06-23	11:53:26	44.2	43.0	40.3
209	2023-06-23	11:53:27	42.7	43.0	42.6
210	2023-06-23	11:53:28	42.9	43.1	42.8
211	2023-06-23	11:53:29	39.9	42.7	41.1
212	2023-06-23	11:53:30	38.6	41.1	39.7
213	2023-06-23	11:53:31	38.2	39.7	38.8
214	2023-06-23	11:53:32	38.8	39.0	38.8
215	2023-06-23	11:53:33	40.0	39.8	38.7
216	2023-06-23	11:53:34	39.3	39.8	39.4
217	2023-06-23	11:53:35	38.8	39.4	39.0
218	2023-06-23	11:53:36	38.5	39.0	38.7
219	2023-06-23	11:53:37	38.6	38.8	38.5
220	2023-06-23	11:53:38	38.7	38.7	38.6
221	2023-06-23	11:53:39	38.4	38.6	38.5
222	2023-06-23	11:53:40	39.2	39.0	38.5
223	2023-06-23	11:53:41	39.3	39.3	39.0
224	2023-06-23	11:53:42	39.2	39.3	39.2
225	2023-06-23	11:53:43	39.3	39.3	39.1
226	2023-06-23	11:53:44	40.0	39.8	39.2
227	2023-06-23	11:53:45	40.1	40.0	39.8
228	2023-06-23	11:53:46	39.7	40.0	39.8
229	2023-06-23	11:53:47	39.9	39.9	39.6
230	2023-06-23	11:53:48	40.0	40.0	39.9
231	2023-06-23	11:53:49	39.8	40.0	39.8
232	2023-06-23	11:53:50	39.2	39.9	39.5
233	2023-06-23	11:53:51	38.3	39.5	38.8
234	2023-06-23	11:53:52	39.1	39.1	38.7
235	2023-06-23	11:53:53	39.0	39.1	39.0
236	2023-06-23	11:53:54	38.9	39.0	38.9
237	2023-06-23	11:53:55	39.6	39.4	39.0
238	2023-06-23	11:53:56	40.1	39.9	39.4
239	2023-06-23	11:53:57	39.6	39.8	39.6
240	2023-06-23	11:53:58	39.4	39.6	39.5
241	2023-06-23	11:53:59	39.3	39.5	39.3
242	2023-06-23	11:54:00	41.0	40.7	39.2
243	2023-06-23	11:54:01	40.6	41.0	40.5
244	2023-06-23	11:54:02	39.0	40.5	39.5
245	2023-06-23	11:54:03	39.0	39.5	39.2
246	2023-06-23	11:54:04	39.2	39.3	39.2
247	2023-06-23	11:54:05	38.8	39.2	38.9
248	2023-06-23	11:54:06	38.9	39.0	38.8
249	2023-06-23	11:54:07	38.7	38.9	38.7
250	2023-06-23	11:54:08	38.9	39.0	38.7
251	2023-06-23	11:54:09	38.7	38.9	38.6
252	2023-06-23	11:54:10	38.2	38.6	38.3
253	2023-06-23	11:54:11	38.4	38.5	38.3
254	2023-06-23	11:54:12	37.9	38.3	38.1
255	2023-06-23	11:54:13	38.2	38.2	38.1
256	2023-06-23	11:54:14	40.0	39.6	38.1
257	2023-06-23	11:54:15	38.8	39.6	39.0
258	2023-06-23	11:54:16	37.9	39.0	38.3
259	2023-06-23	11:54:17	39.9	39.3	38.4

260	2023-06-23	11:54:18	39.1	39.3	39.1
261	2023-06-23	11:54:19	39.3	39.4	39.1
262	2023-06-23	11:54:20	38.5	39.3	38.8
263	2023-06-23	11:54:21	38.5	38.8	38.6
264	2023-06-23	11:54:22	38.2	38.6	38.3
265	2023-06-23	11:54:23	38.6	38.5	38.3
266	2023-06-23	11:54:24	38.1	38.5	38.3
267	2023-06-23	11:54:25	39.1	38.9	38.2
268	2023-06-23	11:54:26	38.8	39.0	38.8
269	2023-06-23	11:54:27	38.8	38.9	38.7
270	2023-06-23	11:54:28	38.6	38.8	38.7
271	2023-06-23	11:54:29	39.3	39.3	38.6
272	2023-06-23	11:54:30	39.0	39.3	38.6
273	2023-06-23	11:54:31	39.5	39.5	39.1
274	2023-06-23	11:54:32	39.6	40.1	39.4
275	2023-06-23	11:54:33	40.3	40.4	39.0
276	2023-06-23	11:54:34	38.3	40.3	39.0
277	2023-06-23	11:54:35	37.8	39.0	38.3
278	2023-06-23	11:54:36	37.8	38.3	37.9
279	2023-06-23	11:54:37	39.8	39.5	38.0
280	2023-06-23	11:54:38	39.5	39.9	39.1
281	2023-06-23	11:54:39	38.4	39.6	38.6
282	2023-06-23	11:54:40	37.7	38.5	38.0
283	2023-06-23	11:54:41	37.2	38.0	37.6
284	2023-06-23	11:54:42	37.6	37.6	37.5
285	2023-06-23	11:54:43	37.4	37.5	37.4
286	2023-06-23	11:54:44	37.5	37.6	37.4
287	2023-06-23	11:54:45	37.3	37.5	37.3
288	2023-06-23	11:54:46	37.7	37.6	37.4
289	2023-06-23	11:54:47	37.3	37.6	37.4
290	2023-06-23	11:54:48	37.4	37.5	37.4
291	2023-06-23	11:54:49	36.9	37.4	37.0
292	2023-06-23	11:54:50	36.9	37.1	36.8
293	2023-06-23	11:54:51	36.9	37.0	36.9
294	2023-06-23	11:54:52	36.6	37.0	36.7
295	2023-06-23	11:54:53	37.3	37.1	36.7
296	2023-06-23	11:54:54	36.8	37.1	36.9
297	2023-06-23	11:54:55	36.8	36.9	36.8
298	2023-06-23	11:54:56	36.8	36.8	36.7
299	2023-06-23	11:54:57	36.8	36.8	36.7
300	2023-06-23	11:54:58	37.4	37.2	36.8
301	2023-06-23	11:54:59	37.5	37.4	37.2
302	2023-06-23	11:55:00	36.9	37.4	37.0
303	2023-06-23	11:55:01	36.6	37.0	36.8
304	2023-06-23	11:55:02	36.6	36.8	36.6
305	2023-06-23	11:55:03	36.6	36.7	36.6
306	2023-06-23	11:55:04	37.3	37.1	36.6
307	2023-06-23	11:55:05	36.8	37.1	36.9
308	2023-06-23	11:55:06	36.4	36.9	36.6
309	2023-06-23	11:55:07	36.6	36.7	36.5
310	2023-06-23	11:55:08	36.6	36.7	36.6
311	2023-06-23	11:55:09	36.9	36.8	36.6

312	2023-06-23	11:55:10	36.5	36.8	36.5
313	2023-06-23	11:55:11	36.4	36.6	36.4
314	2023-06-23	11:55:12	36.5	36.5	36.4
315	2023-06-23	11:55:13	36.7	36.7	36.4
316	2023-06-23	11:55:14	36.6	36.8	36.6
317	2023-06-23	11:55:15	36.2	36.6	36.3
318	2023-06-23	11:55:16	36.2	36.4	36.2
319	2023-06-23	11:55:17	36.7	36.6	36.2
320	2023-06-23	11:55:18	37.0	36.9	36.6
321	2023-06-23	11:55:19	37.2	37.2	36.7
322	2023-06-23	11:55:20	38.6	38.5	37.2
323	2023-06-23	11:55:21	38.3	38.4	37.6
324	2023-06-23	11:55:22	38.4	38.4	38.3
325	2023-06-23	11:55:23	38.2	38.4	38.3
326	2023-06-23	11:55:24	38.3	38.3	38.3
327	2023-06-23	11:55:25	38.9	38.7	38.3
328	2023-06-23	11:55:26	39.4	39.2	38.7
329	2023-06-23	11:55:27	39.8	39.5	39.1
330	2023-06-23	11:55:28	39.0	39.6	39.2
331	2023-06-23	11:55:29	39.5	39.4	39.1
332	2023-06-23	11:55:30	39.6	39.5	39.4
333	2023-06-23	11:55:31	39.3	39.6	39.3
334	2023-06-23	11:55:32	39.4	39.5	39.3
335	2023-06-23	11:55:33	39.2	39.4	39.2
336	2023-06-23	11:55:34	39.3	39.4	39.1
337	2023-06-23	11:55:35	39.7	39.7	39.4
338	2023-06-23	11:55:36	39.6	39.6	39.3
339	2023-06-23	11:55:37	39.4	39.7	39.4
340	2023-06-23	11:55:38	39.4	39.5	39.3
341	2023-06-23	11:55:39	40.4	40.1	39.4
342	2023-06-23	11:55:40	40.7	40.5	40.1
343	2023-06-23	11:55:41	40.6	40.6	40.4
344	2023-06-23	11:55:42	39.9	40.5	40.1
345	2023-06-23	11:55:43	39.6	40.2	39.8
346	2023-06-23	11:55:44	39.6	39.8	39.6
347	2023-06-23	11:55:45	39.6	39.7	39.6
348	2023-06-23	11:55:46	39.9	39.8	39.7
349	2023-06-23	11:55:47	39.7	39.8	39.7
350	2023-06-23	11:55:48	40.0	40.0	39.7
351	2023-06-23	11:55:49	40.0	40.0	39.7
352	2023-06-23	11:55:50	40.3	40.3	39.9
353	2023-06-23	11:55:51	40.5	40.4	40.2
354	2023-06-23	11:55:52	40.6	40.6	40.4
355	2023-06-23	11:55:53	40.6	40.6	40.5
356	2023-06-23	11:55:54	40.4	40.6	40.4
357	2023-06-23	11:55:55	40.3	40.5	40.3
358	2023-06-23	11:55:56	40.2	40.4	40.2
359	2023-06-23	11:55:57	40.1	40.3	40.2
360	2023-06-23	11:55:58	39.6	40.2	39.9
361	2023-06-23	11:55:59	40.1	40.0	39.8
362	2023-06-23	11:56:00	40.3	40.2	40.0
363	2023-06-23	11:56:01	40.8	40.5	40.2

364	2023-06-23	11:56:02	41.3	41.1	40.5
365	2023-06-23	11:56:03	41.1	41.1	41.1
366	2023-06-23	11:56:04	41.1	41.1	41.0
367	2023-06-23	11:56:05	41.0	41.2	41.0
368	2023-06-23	11:56:06	40.6	41.0	40.8
369	2023-06-23	11:56:07	40.7	40.8	40.7
370	2023-06-23	11:56:08	40.4	40.8	40.5
371	2023-06-23	11:56:09	40.2	40.5	40.3
372	2023-06-23	11:56:10	40.3	40.4	40.3
373	2023-06-23	11:56:11	39.6	40.3	39.9
374	2023-06-23	11:56:12	39.8	40.0	39.8
375	2023-06-23	11:56:13	39.7	39.8	39.7
376	2023-06-23	11:56:14	39.3	39.8	39.5
377	2023-06-23	11:56:15	39.6	39.6	39.4
378	2023-06-23	11:56:16	39.4	39.7	39.4
379	2023-06-23	11:56:17	39.2	39.5	39.2
380	2023-06-23	11:56:18	39.4	39.4	39.2
381	2023-06-23	11:56:19	39.1	39.4	39.1
382	2023-06-23	11:56:20	38.6	39.2	38.8
383	2023-06-23	11:56:21	38.9	38.9	38.8
384	2023-06-23	11:56:22	38.8	38.9	38.8
385	2023-06-23	11:56:23	38.7	38.9	38.7
386	2023-06-23	11:56:24	38.7	38.8	38.7
387	2023-06-23	11:56:25	38.8	38.9	38.8
388	2023-06-23	11:56:26	39.0	39.0	38.8
389	2023-06-23	11:56:27	38.7	39.0	38.8
390	2023-06-23	11:56:28	38.9	39.0	38.8
391	2023-06-23	11:56:29	38.8	38.9	38.7
392	2023-06-23	11:56:30	38.8	38.9	38.7
393	2023-06-23	11:56:31	38.5	38.8	38.6
394	2023-06-23	11:56:32	38.2	38.6	38.3
395	2023-06-23	11:56:33	38.3	38.4	38.3
396	2023-06-23	11:56:34	37.9	38.3	38.0
397	2023-06-23	11:56:35	37.9	38.0	37.9
398	2023-06-23	11:56:36	37.9	38.0	37.9
399	2023-06-23	11:56:37	37.7	37.9	37.7
400	2023-06-23	11:56:38	37.5	37.8	37.6
401	2023-06-23	11:56:39	37.8	37.8	37.6
402	2023-06-23	11:56:40	38.3	38.1	37.7
403	2023-06-23	11:56:41	38.4	38.3	38.1
404	2023-06-23	11:56:42	38.8	38.6	38.3
405	2023-06-23	11:56:43	38.3	38.7	38.4
406	2023-06-23	11:56:44	38.0	38.3	38.1
407	2023-06-23	11:56:45	38.5	38.4	38.1
408	2023-06-23	11:56:46	38.9	38.7	38.3
409	2023-06-23	11:56:47	38.2	38.7	38.4
410	2023-06-23	11:56:48	38.3	38.5	38.3
411	2023-06-23	11:56:49	38.0	38.4	38.1
412	2023-06-23	11:56:50	37.9	38.2	38.0
413	2023-06-23	11:56:51	38.2	38.1	38.0
414	2023-06-23	11:56:52	38.2	38.2	38.0
415	2023-06-23	11:56:53	38.9	38.6	38.1

416	2023-06-23	11:56:54	38.6	38.8	38.6
417	2023-06-23	11:56:55	39.3	39.1	38.5
418	2023-06-23	11:56:56	38.9	39.0	38.8
419	2023-06-23	11:56:57	39.1	39.2	39.0
420	2023-06-23	11:56:58	38.4	39.0	38.6
421	2023-06-23	11:56:59	38.1	38.6	38.3
422	2023-06-23	11:57:00	38.0	38.3	38.1
423	2023-06-23	11:57:01	38.2	38.2	38.1
424	2023-06-23	11:57:02	38.1	38.2	38.0
425	2023-06-23	11:57:03	38.0	38.2	38.0
426	2023-06-23	11:57:04	37.7	38.0	37.8
427	2023-06-23	11:57:05	37.8	37.9	37.8
428	2023-06-23	11:57:06	37.9	37.9	37.8
429	2023-06-23	11:57:07	37.6	37.9	37.7
430	2023-06-23	11:57:08	37.9	37.8	37.6
431	2023-06-23	11:57:09	37.8	37.9	37.7
432	2023-06-23	11:57:10	38.0	38.0	37.8
433	2023-06-23	11:57:11	38.4	38.3	37.9
434	2023-06-23	11:57:12	38.5	38.4	38.1
435	2023-06-23	11:57:13	38.5	38.5	38.4
436	2023-06-23	11:57:14	38.4	38.5	38.3
437	2023-06-23	11:57:15	38.5	38.5	38.4
438	2023-06-23	11:57:16	38.3	38.6	38.3
439	2023-06-23	11:57:17	38.4	38.4	38.3
440	2023-06-23	11:57:18	38.4	38.4	38.3
441	2023-06-23	11:57:19	38.7	38.6	38.4
442	2023-06-23	11:57:20	39.6	39.3	38.6
443	2023-06-23	11:57:21	39.2	39.3	39.2
444	2023-06-23	11:57:22	39.2	39.3	39.2
445	2023-06-23	11:57:23	39.4	39.3	39.1
446	2023-06-23	11:57:24	39.3	39.3	39.3
447	2023-06-23	11:57:25	39.5	39.6	39.1
448	2023-06-23	11:57:26	41.7	41.1	39.6
449	2023-06-23	11:57:27	47.6	47.0	40.7
450	2023-06-23	11:57:28	44.2	46.9	45.3
451	2023-06-23	11:57:29	41.6	45.3	43.4
452	2023-06-23	11:57:30	40.6	43.4	41.9
453	2023-06-23	11:57:31	40.9	41.9	41.3
454	2023-06-23	11:57:32	41.2	41.5	40.9
455	2023-06-23	11:57:33	42.9	42.4	41.5
456	2023-06-23	11:57:34	40.9	42.5	41.4
457	2023-06-23	11:57:35	40.3	41.4	40.8
458	2023-06-23	11:57:36	39.6	40.7	40.1
459	2023-06-23	11:57:37	39.7	40.1	39.7
460	2023-06-23	11:57:38	40.3	40.2	39.8
461	2023-06-23	11:57:39	41.4	41.0	40.2
462	2023-06-23	11:57:40	42.3	42.1	41.0
463	2023-06-23	11:57:41	40.5	41.7	40.9
464	2023-06-23	11:57:42	39.6	40.9	40.2
465	2023-06-23	11:57:43	41.0	40.9	40.1
466	2023-06-23	11:57:44	46.0	45.3	40.8
467	2023-06-23	11:57:45	47.4	47.0	45.3

468	2023-06-23	11:57:46	45.1	46.4	45.5
469	2023-06-23	11:57:47	45.8	46.1	45.6
470	2023-06-23	11:57:48	47.5	47.2	45.6
471	2023-06-23	11:57:49	46.0	46.7	46.2
472	2023-06-23	11:57:50	45.0	46.3	45.4
473	2023-06-23	11:57:51	43.8	45.4	44.4
474	2023-06-23	11:57:52	49.3	48.5	44.4
475	2023-06-23	11:57:53	45.4	48.6	46.7
476	2023-06-23	11:57:54	43.3	46.6	45.0
477	2023-06-23	11:57:55	42.6	45.1	43.6
478	2023-06-23	11:57:56	42.3	43.6	42.9
479	2023-06-23	11:57:57	42.8	43.1	42.8
480	2023-06-23	11:57:58	44.8	44.4	42.7
481	2023-06-23	11:57:59	45.9	45.9	44.2
482	2023-06-23	11:58:00	43.0	45.2	44.0
483	2023-06-23	11:58:01	40.7	44.0	42.3
484	2023-06-23	11:58:02	41.7	42.3	41.9
485	2023-06-23	11:58:03	43.6	43.2	42.0
486	2023-06-23	11:58:04	44.8	44.4	43.2
487	2023-06-23	11:58:05	44.0	44.4	44.1
488	2023-06-23	11:58:06	44.7	44.5	44.1
489	2023-06-23	11:58:07	44.9	44.9	44.4
490	2023-06-23	11:58:08	47.6	46.9	44.9
491	2023-06-23	11:58:09	50.4	49.5	46.9
492	2023-06-23	11:58:10	53.4	52.5	49.5
493	2023-06-23	11:58:11	54.2	53.7	52.5
494	2023-06-23	11:58:12	55.1	54.8	53.7
495	2023-06-23	11:58:13	54.9	55.0	54.1
496	2023-06-23	11:58:14	59.1	58.2	55.0
497	2023-06-23	11:58:15	62.3	61.2	58.2
498	2023-06-23	11:58:16	62.0	61.8	61.2
499	2023-06-23	11:58:17	59.6	61.7	60.5
500	2023-06-23	11:58:18	57.2	60.4	58.5
501	2023-06-23	11:58:19	52.5	58.5	55.7
502	2023-06-23	11:58:20	50.2	55.7	53.1
503	2023-06-23	11:58:21	47.3	53.0	50.4
504	2023-06-23	11:58:22	46.0	50.3	48.1
505	2023-06-23	11:58:23	43.8	48.1	45.8
506	2023-06-23	11:58:24	41.9	45.8	43.7
507	2023-06-23	11:58:25	41.6	43.7	42.5
508	2023-06-23	11:58:26	42.3	42.5	42.4
509	2023-06-23	11:58:27	42.0	42.4	42.1
510	2023-06-23	11:58:28	42.5	42.5	42.2
511	2023-06-23	11:58:29	42.7	42.7	42.3
512	2023-06-23	11:58:30	41.7	42.5	42.0
513	2023-06-23	11:58:31	41.5	42.1	41.7
514	2023-06-23	11:58:32	41.7	41.8	41.6
515	2023-06-23	11:58:33	41.7	41.8	41.6
516	2023-06-23	11:58:34	41.5	41.7	41.5
517	2023-06-23	11:58:35	42.7	42.4	41.6
518	2023-06-23	11:58:36	43.8	43.5	42.3
519	2023-06-23	11:58:37	48.3	47.4	43.6

520	2023-06-23	11:58:38	44.0	47.0	45.4
521	2023-06-23	11:58:39	42.9	45.4	44.0
522	2023-06-23	11:58:40	45.7	45.4	43.8
523	2023-06-23	11:58:41	46.5	46.1	45.4
524	2023-06-23	11:58:42	44.4	46.1	45.0
525	2023-06-23	11:58:43	43.6	45.0	44.0
526	2023-06-23	11:58:44	39.8	44.0	41.9
527	2023-06-23	11:58:45	39.4	41.9	40.5
528	2023-06-23	11:58:46	38.3	40.5	39.3
529	2023-06-23	11:58:47	38.8	39.3	38.8
530	2023-06-23	11:58:48	38.9	39.2	38.9
531	2023-06-23	11:58:49	38.5	39.0	38.7
532	2023-06-23	11:58:50	39.7	39.4	38.7
533	2023-06-23	11:58:51	39.4	39.5	39.1
534	2023-06-23	11:58:52	38.9	39.4	39.0
535	2023-06-23	11:58:53	38.9	39.2	39.0
536	2023-06-23	11:58:54	38.1	39.0	38.4
537	2023-06-23	11:58:55	38.2	38.5	38.3
538	2023-06-23	11:58:56	38.4	38.4	38.2
539	2023-06-23	11:58:57	40.8	40.3	38.4
540	2023-06-23	11:58:58	43.4	42.4	40.4
541	2023-06-23	11:58:59	40.5	42.4	41.1
542	2023-06-23	11:59:00	38.6	41.1	39.7
543	2023-06-23	11:59:01	40.5	40.2	39.8
544	2023-06-23	11:59:02	39.6	40.4	39.8
545	2023-06-23	11:59:03	39.2	39.8	39.4
546	2023-06-23	11:59:04	39.2	39.4	39.2
547	2023-06-23	11:59:05	39.7	39.5	39.3
548	2023-06-23	11:59:06	39.1	39.8	39.2
549	2023-06-23	11:59:07	40.2	40.1	39.0
550	2023-06-23	11:59:08	40.1	40.2	39.8
551	2023-06-23	11:59:09	41.6	41.4	40.1
552	2023-06-23	11:59:10	40.2	41.4	40.6
553	2023-06-23	11:59:11	40.7	40.9	40.1
554	2023-06-23	11:59:12	41.9	41.8	40.8
555	2023-06-23	11:59:13	40.3	41.6	40.8
556	2023-06-23	11:59:14	39.6	40.8	40.0
557	2023-06-23	11:59:15	40.5	40.7	39.9
558	2023-06-23	11:59:16	40.9	41.2	40.2
559	2023-06-23	11:59:17	39.1	40.5	39.7
560	2023-06-23	11:59:18	39.3	39.7	39.4
561	2023-06-23	11:59:19	39.1	39.5	39.2
562	2023-06-23	11:59:20	39.4	39.5	39.2
563	2023-06-23	11:59:21	39.8	39.7	39.3
564	2023-06-23	11:59:22	41.0	40.6	39.6
565	2023-06-23	11:59:23	39.6	40.6	40.0
566	2023-06-23	11:59:24	39.6	40.0	39.7
567	2023-06-23	11:59:25	39.9	39.9	39.7
568	2023-06-23	11:59:26	40.8	40.8	39.8
569	2023-06-23	11:59:27	40.0	40.2	40.0
570	2023-06-23	11:59:28	41.1	40.8	40.1
571	2023-06-23	11:59:29	41.1	41.1	40.8

572	2023-06-23	11:59:30	39.6	40.8	40.1
573	2023-06-23	11:59:31	39.6	40.1	39.8
574	2023-06-23	11:59:32	38.8	39.8	39.2
575	2023-06-23	11:59:33	38.7	39.2	38.9
576	2023-06-23	11:59:34	38.6	38.9	38.7
577	2023-06-23	11:59:35	38.6	38.7	38.6
578	2023-06-23	11:59:36	38.4	38.6	38.5
579	2023-06-23	11:59:37	38.1	38.5	38.2
580	2023-06-23	11:59:38	37.8	38.2	37.9
581	2023-06-23	11:59:39	38.2	38.2	37.9
582	2023-06-23	11:59:40	38.2	38.2	38.1
583	2023-06-23	11:59:41	38.5	38.4	38.2
584	2023-06-23	11:59:42	38.9	38.8	38.4
585	2023-06-23	11:59:43	39.2	39.1	38.7
586	2023-06-23	11:59:44	39.9	39.7	39.0
587	2023-06-23	11:59:45	39.8	39.8	39.5
588	2023-06-23	11:59:46	38.9	39.8	39.2
589	2023-06-23	11:59:47	39.1	39.3	39.1
590	2023-06-23	11:59:48	39.4	39.5	39.1
591	2023-06-23	11:59:49	39.3	39.4	39.2
592	2023-06-23	11:59:50	40.2	40.0	39.3
593	2023-06-23	11:59:51	39.9	40.2	39.9
594	2023-06-23	11:59:52	42.9	42.7	39.9
595	2023-06-23	11:59:53	41.4	42.8	41.7
596	2023-06-23	11:59:54	42.1	42.2	41.7
597	2023-06-23	11:59:55	41.2	42.4	41.4
598	2023-06-23	11:59:56	44.7	45.0	41.2
599	2023-06-23	11:59:57	40.1	43.0	41.4
600	2023-06-23	11:59:58	39.4	41.4	40.2
601	2023-06-23	11:59:59	39.4	40.2	39.7
602	2023-06-23	12:00:00	39.8	39.8	39.7
603	2023-06-23	12:00:01	40.0	40.0	39.7
604	2023-06-23	12:00:02	40.4	40.2	39.9
605	2023-06-23	12:00:03	41.0	40.8	40.2
606	2023-06-23	12:00:04	41.1	41.0	40.7
607	2023-06-23	12:00:05	40.7	41.0	40.7
608	2023-06-23	12:00:06	40.9	40.9	40.8
609	2023-06-23	12:00:07	41.0	41.0	40.9
610	2023-06-23	12:00:08	41.2	41.1	40.9
611	2023-06-23	12:00:09	41.3	41.3	41.1
612	2023-06-23	12:00:10	41.6	41.5	41.2
613	2023-06-23	12:00:11	41.3	41.4	41.3
614	2023-06-23	12:00:12	41.4	41.5	41.3
615	2023-06-23	12:00:13	41.3	41.4	41.3
616	2023-06-23	12:00:14	41.4	41.4	41.3
617	2023-06-23	12:00:15	41.4	41.5	41.4
618	2023-06-23	12:00:16	41.8	41.7	41.4
619	2023-06-23	12:00:17	42.2	42.0	41.6
620	2023-06-23	12:00:18	42.4	42.4	42.0
621	2023-06-23	12:00:19	42.2	42.3	42.2
622	2023-06-23	12:00:20	41.8	42.2	42.0
623	2023-06-23	12:00:21	42.0	42.0	41.9

624	2023-06-23	12:00:22	42.4	42.3	42.0
625	2023-06-23	12:00:23	42.9	42.7	42.3
626	2023-06-23	12:00:24	43.0	43.0	42.6
627	2023-06-23	12:00:25	42.5	43.0	42.7
628	2023-06-23	12:00:26	42.5	42.7	42.6
629	2023-06-23	12:00:27	42.5	42.6	42.5
630	2023-06-23	12:00:28	42.0	42.5	42.2
631	2023-06-23	12:00:29	41.9	42.2	42.0
632	2023-06-23	12:00:30	42.1	42.1	42.0
633	2023-06-23	12:00:31	42.1	42.1	42.0
634	2023-06-23	12:00:32	42.1	42.2	42.1
635	2023-06-23	12:00:33	41.7	42.1	41.8
636	2023-06-23	12:00:34	41.7	41.8	41.7
637	2023-06-23	12:00:35	41.7	41.8	41.7
638	2023-06-23	12:00:36	42.0	41.9	41.7
639	2023-06-23	12:00:37	42.1	42.0	41.8
640	2023-06-23	12:00:38	42.1	42.1	42.0
641	2023-06-23	12:00:39	42.0	42.1	42.0
642	2023-06-23	12:00:40	41.9	42.1	41.9
643	2023-06-23	12:00:41	41.6	41.9	41.7
644	2023-06-23	12:00:42	41.6	41.8	41.6
645	2023-06-23	12:00:43	41.4	41.7	41.4
646	2023-06-23	12:00:44	41.2	41.5	41.3
647	2023-06-23	12:00:45	41.2	41.4	41.2
648	2023-06-23	12:00:46	41.1	41.3	41.1
649	2023-06-23	12:00:47	40.5	41.1	40.7
650	2023-06-23	12:00:48	40.3	40.7	40.4
651	2023-06-23	12:00:49	40.0	40.4	40.1
652	2023-06-23	12:00:50	40.5	40.4	40.2
653	2023-06-23	12:00:51	41.0	40.8	40.4
654	2023-06-23	12:00:52	41.0	41.1	40.8
655	2023-06-23	12:00:53	40.7	40.9	40.8
656	2023-06-23	12:00:54	40.3	40.8	40.5
657	2023-06-23	12:00:55	40.8	40.7	40.4
658	2023-06-23	12:00:56	41.3	41.1	40.7
659	2023-06-23	12:00:57	41.7	41.5	41.1
660	2023-06-23	12:00:58	41.7	41.7	41.4
661	2023-06-23	12:00:59	42.2	42.0	41.6
662	2023-06-23	12:01:00	42.5	42.3	42.0
663	2023-06-23	12:01:01	42.5	42.5	42.3
664	2023-06-23	12:01:02	42.7	42.6	42.5
665	2023-06-23	12:01:03	42.4	42.7	42.4
666	2023-06-23	12:01:04	42.6	42.6	42.4
667	2023-06-23	12:01:05	43.0	42.8	42.5
668	2023-06-23	12:01:06	42.8	42.9	42.8
669	2023-06-23	12:01:07	43.6	43.3	42.8
670	2023-06-23	12:01:08	43.8	43.7	43.3
671	2023-06-23	12:01:09	44.1	44.0	43.7
672	2023-06-23	12:01:10	44.8	44.5	44.0
673	2023-06-23	12:01:11	45.0	44.9	44.5
674	2023-06-23	12:01:12	45.2	45.1	44.8
675	2023-06-23	12:01:13	45.2	45.2	45.0

676	2023-06-23	12:01:14	46.0	45.8	45.2
677	2023-06-23	12:01:15	46.4	46.2	45.8
678	2023-06-23	12:01:16	46.4	46.4	46.2
679	2023-06-23	12:01:17	45.7	46.4	45.9
680	2023-06-23	12:01:18	44.9	45.9	45.2
681	2023-06-23	12:01:19	44.6	45.2	44.8
682	2023-06-23	12:01:20	44.5	44.9	44.6
683	2023-06-23	12:01:21	44.3	44.7	44.4
684	2023-06-23	12:01:22	44.3	44.5	44.4
685	2023-06-23	12:01:23	44.5	44.4	44.3
686	2023-06-23	12:01:24	44.5	44.6	44.4
687	2023-06-23	12:01:25	44.0	44.5	44.2
688	2023-06-23	12:01:26	43.8	44.2	43.9
689	2023-06-23	12:01:27	43.9	44.0	43.9
690	2023-06-23	12:01:28	43.9	44.0	43.9
691	2023-06-23	12:01:29	44.0	44.0	43.9
692	2023-06-23	12:01:30	43.8	44.0	43.9
693	2023-06-23	12:01:31	43.8	43.9	43.8
694	2023-06-23	12:01:32	43.6	43.8	43.6
695	2023-06-23	12:01:33	43.7	43.8	43.6
696	2023-06-23	12:01:34	43.6	43.8	43.6
697	2023-06-23	12:01:35	43.6	43.6	43.5
698	2023-06-23	12:01:36	43.2	43.6	43.3
699	2023-06-23	12:01:37	43.3	43.4	43.3
700	2023-06-23	12:01:38	43.6	43.5	43.3
701	2023-06-23	12:01:39	43.6	43.6	43.5
702	2023-06-23	12:01:40	43.4	43.6	43.4
703	2023-06-23	12:01:41	43.4	43.5	43.4
704	2023-06-23	12:01:42	43.3	43.4	43.3
705	2023-06-23	12:01:43	43.4	43.5	43.3
706	2023-06-23	12:01:44	43.3	43.4	43.3
707	2023-06-23	12:01:45	43.1	43.3	43.1
708	2023-06-23	12:01:46	42.4	43.1	42.7
709	2023-06-23	12:01:47	42.7	42.7	42.6
710	2023-06-23	12:01:48	42.6	42.7	42.6
711	2023-06-23	12:01:49	42.5	42.7	42.5
712	2023-06-23	12:01:50	42.7	42.8	42.4
713	2023-06-23	12:01:51	42.4	42.6	42.4
714	2023-06-23	12:01:52	41.7	42.4	42.0
715	2023-06-23	12:01:53	41.5	42.0	41.7
716	2023-06-23	12:01:54	41.8	41.8	41.7
717	2023-06-23	12:01:55	42.0	41.9	41.7
718	2023-06-23	12:01:56	42.4	42.3	41.9
719	2023-06-23	12:01:57	43.3	42.9	42.3
720	2023-06-23	12:01:58	43.1	43.1	42.9
721	2023-06-23	12:01:59	43.0	43.0	43.0
722	2023-06-23	12:02:00	43.0	43.1	42.9
723	2023-06-23	12:02:01	42.3	43.0	42.5
724	2023-06-23	12:02:02	42.1	42.6	42.2
725	2023-06-23	12:02:03	42.4	42.4	42.2
726	2023-06-23	12:02:04	41.9	42.4	42.1
727	2023-06-23	12:02:05	42.4	42.3	42.1

728	2023-06-23	12:02:06	43.2	42.9	42.3
729	2023-06-23	12:02:07	43.8	43.5	42.8
730	2023-06-23	12:02:08	44.1	43.9	43.5
731	2023-06-23	12:02:09	44.3	44.1	43.9
732	2023-06-23	12:02:10	43.8	44.1	43.9
733	2023-06-23	12:02:11	44.5	44.6	43.9
734	2023-06-23	12:02:12	43.7	44.3	43.9
735	2023-06-23	12:02:13	43.1	44.0	43.4
736	2023-06-23	12:02:14	44.1	44.0	43.2
737	2023-06-23	12:02:15	44.5	44.9	43.8
738	2023-06-23	12:02:16	42.6	44.4	43.1
739	2023-06-23	12:02:17	42.6	43.1	42.5
740	2023-06-23	12:02:18	43.5	43.5	42.7
741	2023-06-23	12:02:19	42.1	43.4	42.6
742	2023-06-23	12:02:20	41.6	42.6	42.1
743	2023-06-23	12:02:21	42.0	42.1	42.0
744	2023-06-23	12:02:22	42.2	42.2	41.9
745	2023-06-23	12:02:23	42.6	42.4	42.2
746	2023-06-23	12:02:24	42.5	42.5	42.4
747	2023-06-23	12:02:25	42.3	42.5	42.4
748	2023-06-23	12:02:26	42.4	42.4	42.3
749	2023-06-23	12:02:27	42.4	42.4	42.3
750	2023-06-23	12:02:28	42.4	42.4	42.3
751	2023-06-23	12:02:29	42.7	42.6	42.4
752	2023-06-23	12:02:30	42.4	42.6	42.4
753	2023-06-23	12:02:31	42.4	42.5	42.4
754	2023-06-23	12:02:32	42.3	42.4	42.3
755	2023-06-23	12:02:33	41.6	42.3	41.8
756	2023-06-23	12:02:34	41.2	41.9	41.4
757	2023-06-23	12:02:35	41.0	41.4	41.2
758	2023-06-23	12:02:36	41.0	41.2	41.0
759	2023-06-23	12:02:37	41.0	41.1	41.0
760	2023-06-23	12:02:38	41.4	41.3	41.0
761	2023-06-23	12:02:39	41.5	41.4	41.3
762	2023-06-23	12:02:40	41.3	41.4	41.3
763	2023-06-23	12:02:41	41.4	41.4	41.3
764	2023-06-23	12:02:42	41.2	41.4	41.2
765	2023-06-23	12:02:43	41.4	41.4	41.2
766	2023-06-23	12:02:44	41.5	41.5	41.3
767	2023-06-23	12:02:45	41.3	41.5	41.3
768	2023-06-23	12:02:46	41.5	41.5	41.4
769	2023-06-23	12:02:47	40.9	41.4	41.1
770	2023-06-23	12:02:48	40.9	41.2	40.9
771	2023-06-23	12:02:49	40.9	41.0	40.8
772	2023-06-23	12:02:50	41.4	41.3	41.0
773	2023-06-23	12:02:51	41.4	41.3	41.2
774	2023-06-23	12:02:52	41.3	41.4	41.3
775	2023-06-23	12:02:53	40.6	41.3	40.9
776	2023-06-23	12:02:54	40.6	40.9	40.7
777	2023-06-23	12:02:55	40.9	40.9	40.7
778	2023-06-23	12:02:56	40.7	40.8	40.7
779	2023-06-23	12:02:57	40.3	40.7	40.4

780	2023-06-23	12:02:58	40.4	40.5	40.4
781	2023-06-23	12:02:59	40.4	40.5	40.3
782	2023-06-23	12:03:00	39.8	40.3	40.0
783	2023-06-23	12:03:01	39.5	40.0	39.7
784	2023-06-23	12:03:02	39.5	39.7	39.4
785	2023-06-23	12:03:03	39.9	39.9	39.5
786	2023-06-23	12:03:04	39.7	39.9	39.7
787	2023-06-23	12:03:05	40.3	40.1	39.7
788	2023-06-23	12:03:06	41.3	40.9	40.1
789	2023-06-23	12:03:07	40.5	40.9	40.6
790	2023-06-23	12:03:08	39.9	40.6	40.2
791	2023-06-23	12:03:09	40.6	40.6	40.1
792	2023-06-23	12:03:10	40.3	40.5	40.3
793	2023-06-23	12:03:11	41.0	40.8	40.4
794	2023-06-23	12:03:12	42.8	42.3	40.8
795	2023-06-23	12:03:13	42.0	42.3	42.1
796	2023-06-23	12:03:14	43.2	43.0	42.1
797	2023-06-23	12:03:15	42.3	42.8	42.4
798	2023-06-23	12:03:16	46.3	45.2	42.4
799	2023-06-23	12:03:17	45.1	46.0	44.9
800	2023-06-23	12:03:18	44.3	44.8	44.5
801	2023-06-23	12:03:19	44.9	45.4	44.5
802	2023-06-23	12:03:20	42.2	44.5	43.2
803	2023-06-23	12:03:21	46.7	45.7	43.3
804	2023-06-23	12:03:22	50.5	49.6	45.7
805	2023-06-23	12:03:23	43.5	49.2	46.5
806	2023-06-23	12:03:24	43.3	46.5	44.9
807	2023-06-23	12:03:25	46.8	46.4	44.7
808	2023-06-23	12:03:26	45.3	46.5	45.6
809	2023-06-23	12:03:27	45.6	45.8	45.0
810	2023-06-23	12:03:28	45.5	45.9	45.4
811	2023-06-23	12:03:29	44.5	45.7	44.9
812	2023-06-23	12:03:30	44.1	44.9	44.2
813	2023-06-23	12:03:31	46.5	46.0	44.5
814	2023-06-23	12:03:32	44.8	46.0	45.3
815	2023-06-23	12:03:33	42.4	45.3	43.6
816	2023-06-23	12:03:34	41.4	43.6	42.3
817	2023-06-23	12:03:35	42.3	42.4	42.2
818	2023-06-23	12:03:36	44.5	44.2	42.2
819	2023-06-23	12:03:37	46.1	45.7	44.2
820	2023-06-23	12:03:38	43.5	45.7	44.3
821	2023-06-23	12:03:39	42.0	44.3	43.0
822	2023-06-23	12:03:40	43.0	43.1	42.9
823	2023-06-23	12:03:41	42.3	43.4	42.4
824	2023-06-23	12:03:42	41.9	42.4	42.1
825	2023-06-23	12:03:43	42.8	42.7	42.1
826	2023-06-23	12:03:44	44.1	43.7	42.7
827	2023-06-23	12:03:45	42.8	43.7	43.1
828	2023-06-23	12:03:46	42.4	43.1	42.6
829	2023-06-23	12:03:47	42.1	42.6	42.3
830	2023-06-23	12:03:48	43.1	42.9	42.2
831	2023-06-23	12:03:49	43.0	43.0	42.8

832	2023-06-23	12:03:50	43.1	43.1	43.0
833	2023-06-23	12:03:51	43.1	43.1	43.0
834	2023-06-23	12:03:52	43.5	43.3	43.1
835	2023-06-23	12:03:53	43.5	43.5	43.3
836	2023-06-23	12:03:54	43.1	43.5	43.2
837	2023-06-23	12:03:55	43.6	43.6	43.2
838	2023-06-23	12:03:56	43.0	43.4	43.1
839	2023-06-23	12:03:57	43.1	43.2	43.0
840	2023-06-23	12:03:58	43.6	43.5	43.2
841	2023-06-23	12:03:59	42.9	43.4	43.1
842	2023-06-23	12:04:00	42.6	43.1	42.7
843	2023-06-23	12:04:01	42.5	42.8	42.6
844	2023-06-23	12:04:02	42.9	42.9	42.5
845	2023-06-23	12:04:03	43.9	43.5	42.9
846	2023-06-23	12:04:04	42.9	43.4	43.1
847	2023-06-23	12:04:05	43.6	43.5	43.1
848	2023-06-23	12:04:06	44.6	44.4	43.4
849	2023-06-23	12:04:07	44.0	44.4	44.1
850	2023-06-23	12:04:08	43.7	44.1	43.8
851	2023-06-23	12:04:09	44.1	44.1	43.8
852	2023-06-23	12:04:10	42.5	44.0	43.0
853	2023-06-23	12:04:11	42.6	43.0	42.8
854	2023-06-23	12:04:12	42.3	42.8	42.4
855	2023-06-23	12:04:13	42.2	42.5	42.3
856	2023-06-23	12:04:14	41.5	42.3	41.8
857	2023-06-23	12:04:15	41.6	41.8	41.6
858	2023-06-23	12:04:16	41.2	41.6	41.3
859	2023-06-23	12:04:17	40.8	41.3	41.0
860	2023-06-23	12:04:18	40.3	41.0	40.5
861	2023-06-23	12:04:19	40.7	40.7	40.5
862	2023-06-23	12:04:20	40.2	40.7	40.4
863	2023-06-23	12:04:21	39.9	40.4	40.1
864	2023-06-23	12:04:22	40.5	40.4	40.0
865	2023-06-23	12:04:23	40.5	40.5	40.4
866	2023-06-23	12:04:24	40.1	40.4	40.2
867	2023-06-23	12:04:25	40.3	40.4	40.2
868	2023-06-23	12:04:26	40.2	40.3	40.1
869	2023-06-23	12:04:27	40.0	40.2	40.0
870	2023-06-23	12:04:28	40.5	40.5	40.1
871	2023-06-23	12:04:29	39.7	40.3	40.0
872	2023-06-23	12:04:30	39.8	40.0	39.8
873	2023-06-23	12:04:31	40.1	40.1	39.8
874	2023-06-23	12:04:32	40.2	40.2	40.0
875	2023-06-23	12:04:33	40.2	40.2	40.1
876	2023-06-23	12:04:34	40.2	40.2	40.1
877	2023-06-23	12:04:35	40.5	40.4	40.2
878	2023-06-23	12:04:36	40.6	40.5	40.4
879	2023-06-23	12:04:37	39.9	40.6	40.1
880	2023-06-23	12:04:38	39.6	40.2	39.8
881	2023-06-23	12:04:39	39.6	39.8	39.7
882	2023-06-23	12:04:40	39.7	39.7	39.6
883	2023-06-23	12:04:41	39.0	39.7	39.3

884		2023-06-23	12:04:42	38.7	39.3	38.9
885		2023-06-23	12:04:43	38.8	38.9	38.8
886		2023-06-23	12:04:44	38.5	38.8	38.6
887		2023-06-23	12:04:45	38.8	38.8	38.6
888		2023-06-23	12:04:46	38.7	38.8	38.7
889		2023-06-23	12:04:47	38.8	38.9	38.7
890		2023-06-23	12:04:48	38.5	38.7	38.5
891		2023-06-23	12:04:49	38.7	38.7	38.6
892		2023-06-23	12:04:50	39.1	39.0	38.7
893		2023-06-23	12:04:51	39.8	39.5	39.0
894		2023-06-23	12:04:52	39.9	39.8	39.5
895		2023-06-23	12:04:53	39.6	39.8	39.6
896		2023-06-23	12:04:54	39.7	39.7	39.6
897		2023-06-23	12:04:55	39.7	39.7	39.6
898		2023-06-23	12:04:56	40.3	40.1	39.7
899		2023-06-23	12:04:57	40.2	40.2	40.1
900		2023-06-23	12:04:58	40.0	40.2	40.0
901		2023-06-23	12:04:59	39.8	40.0	39.8
902	Stop	2023-06-23	12:05:00			
903	Calibration Change	2023-06-23	12:06:03			

Appendix E-3

Field Sheets

Meter Locations

Site #	Meter #	Start Time	Start Date	Stop Time	Stop Date	Start Cal	End Cal	Lock #	Location Description
LT-2	A	10:58	20230620	11:15	20230623	13.83 mV/Pa	13.82 mV/Pa		Just Before Bridge to regulator up a hill on Telephone Pole
LT-1	D	11:27		10:55	20230623	17.02 mV/Pa	16.82 mV/Pa		3rd Telephone post from Road (Telephone to Right of dirt Path.
LT-3	~~[illegible]~~ 2105	2:35		~~2:35~~ 1:19	20230623	14.34 mV/Pa	14.15 mV/Pa		LT-3 location off Salt Spring Telephone Pole
LT-4	4006	3:05		12:35	20230623	14.79 mV/Pa	14.9 mV/Pa		~~Carolyn & McKenzie near mailbox~~ ~~Telephone pole (audible buzz from~~
LT-5 Backup	J	3:30		1:10	20230623	16.44 mV/Pa	16.63 mV/Pa		LT4 on Telephone pole off of McKenzie north of McKenzie /Carolyn intersection
LT-5	I	3:41		1:18	2023 06 23	16.82 mV/Pa	16.82 mV/Pa		LT-5 Backup Telephone pole Just north of Cedar Mill off 88.

LT-5
on Telephone pole, off N side of 88
between home and Zips Pioneer Barbershop

LT-1: distant firearms @ pickup

LT-4: Tree work deeper in neighborhood.

LT-3: neighbor across street doing fire prevention stuff
burning tinder

NOISE MEASUREMENT SITE INFORMATION SHEET

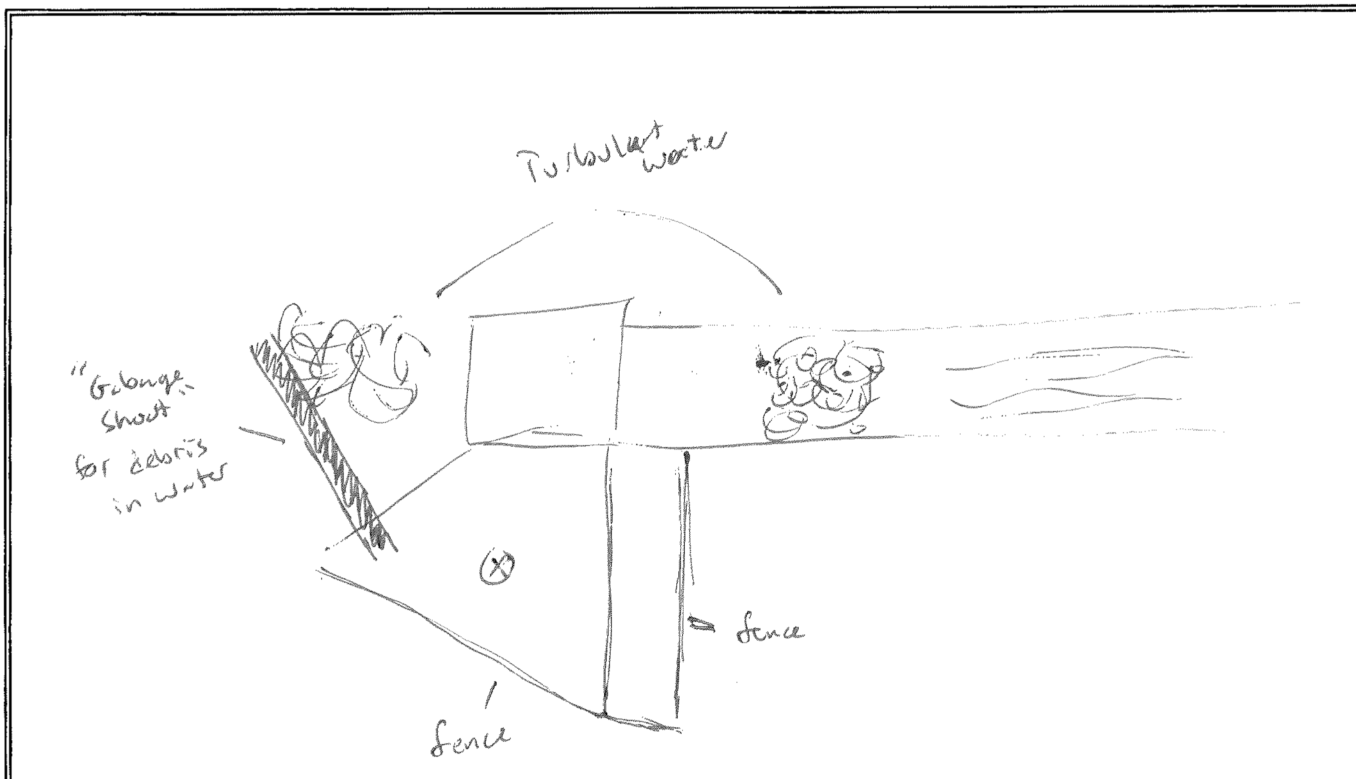
Jones & Stokes

PROJECT NAME: ______________________ PROJECT #: ______________________

SITE NUMBER: ST-1 DATE/TIME: 2023 06 23

LOCATION/ADDRESS: Regulator ENGINEERS: Schneider N.

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

65.1 2.1 Clear 56.9

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

831 Cal200 Pre: +0.07dB
Post:

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction) ______________________

POSTED SPEED: __________ COMMENTS: ______________________

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: Tiger Creek Spillway
SITE NUMBER: ST-1
LOCATION/ADDRESS: Tiger Creek Regulator / Spillway.
PROJECT #:
DATE/TIME: 20230623 10:17
ENGINEERS: Schumacher N.

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)	
1	10:17							
2	10:18							
3	19							
4	20							
5	21							
6	22							
7	23							
8	24							
9	25							
10	26						Squeaking / Louder bird? ; whistle sound?	
11	27						Squeaking again (is intermittent.)	
12	28							
13	29							
14	30						distant squeak / whistle pretty sure it's a bird	Leq 60.3
15	31							Lmax 61.6
16								Lmin 59.5
17								L10 60.6
18								L33 60.4
19								L50 60.2
20								L90 59.9

Overall Leq (Include "O" minutes, Exclude "X" minutes) = dBA

Subset Leq (Exclude "O" and "X" minutes) = dBA

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

NOISE MEASUREMENT SITE INFORMATION SHEET

Jones & Stokes

PROJECT NAME: Tiger Creek Spillway

PROJECT #:

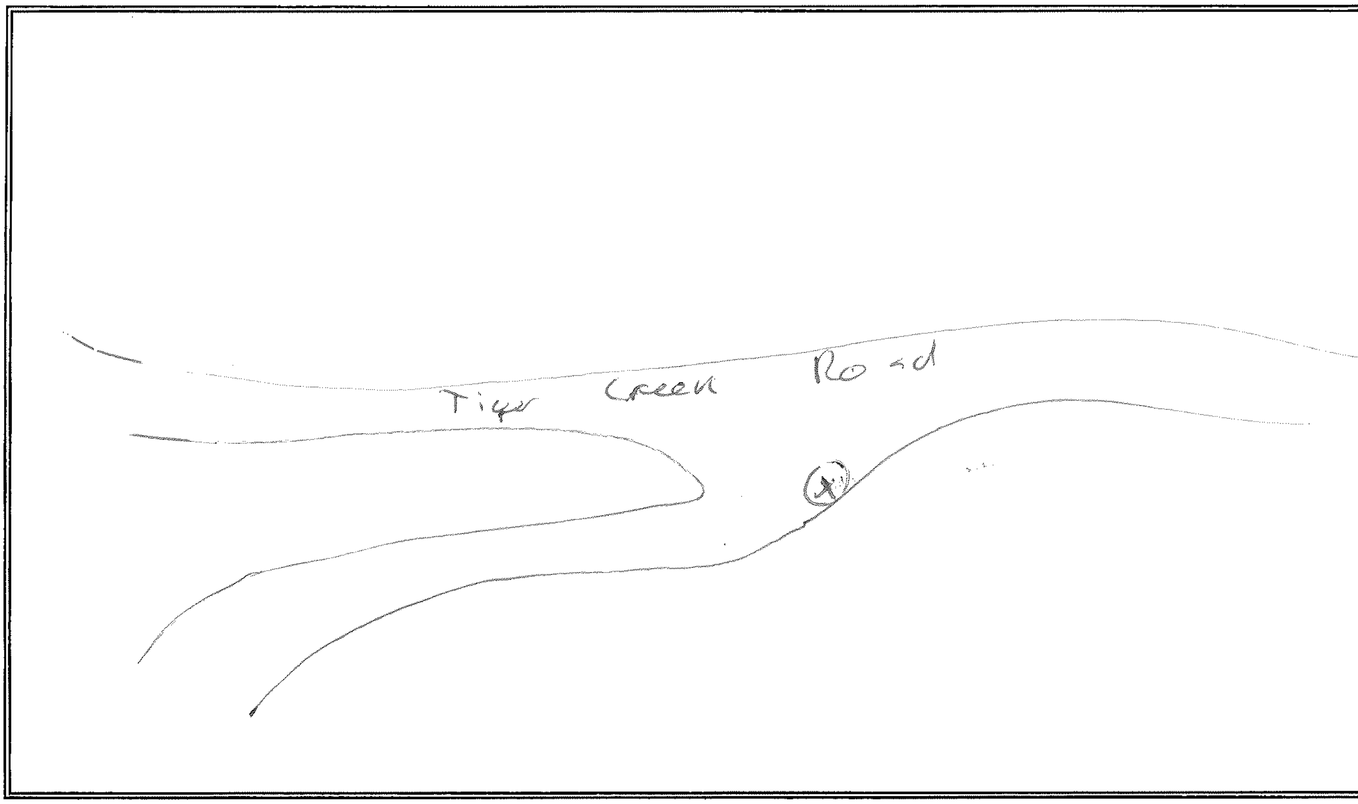
SITE NUMBER: ST-2

DATE/TIME: 2023 06 23

LOCATION/ADDRESS: Tiger Creek Road

ENGINEERS: Schumaker N

SITE SKETCH: Show microphone location, nearby residences/buildings, potential reflective surfaces, project roadways, local roadways, driveways, ground type, trees. Indicate reference distances between objects, arrows showing wind direction, North, and camera locations/directions. Describe the line-of-sight and topography/elevation changes relative to noise sources.



WEATHER DATA: (temperature, wind speed/direction, sky conditions, relative humidity)

70.2 1.9 clear 55.5

EQUIPMENT DATA: (sound level meter, microphone, preamp, calibrator, factory cal. date)

Duet, 081   0 831   Cal200   Pre: +0.06 dB   Post: +0.02 dB

ESTIMATED CONSTRUCTION DATE OF RESIDENCES: (Pre-1978, or new construction)

POSTED SPEED: COMMENTS:

TRAFFIC COUNTS:

Roadway/Direction	Autos	Medium	Heavy	Speed	Start Time	Duration

NOISE MEASUREMENT LOG SHEET (20)

Jones & Stokes

PROJECT NAME: Tiger Creek Spillway
PROJECT #:
SITE NUMBER: ST-2
DATE/TIME: 20230623 11:50
LOCATION/ADDRESS: Tiger Creek Road
ENGINEERS: Schumacher N.

#	Minute Starting	Measured Leq (dBA)	O or X	Autos	Medium Trucks	Heavy Trucks	Other Noise Sources/Comments (include SLM equipment, Calibration Data)	
1	11:50						prop plane pickup Truck driving by	
2	11:51						Truck drive by	
3	11:52						prop plane ends 2:17 pick up Truck pass by	
4	11:53						Same Truck in distance	
5	11:54						dog barking (distant) Birds	
6	11:55						Birds	
7	11:56						dogs barking (distant) Birds	
8	11:57						prop plane (distant but approaching) Bee Buzzing Tires Screeching	
9	11:58						Truck pass by	
10	11:59						prop plane dog barking	
11	12:00						prop plane gone	
12	12:01						Seagull, distant dog	
13	12:02						~~Seagull~~ ~~distant dog~~	
14	12:03						Jet plane overhead	Leq 52.0
15	12:04						prop plane	Lmax 74.2
16								Lmin 36.2
17							noise sources throughout: Birds River	L10 46.8
18								L33 42.6
19								L50 41.1
20								L90 38.3

Overall Leq (Include "O" minutes, Exclude "X" minutes) = [ ] **dBA**

Subset Leq (Exclude "O" and "X" minutes) = [ ] **dBA**

"O" = other characteristic sources that contributed to the Leq

"X" = exclude from Leq calculation; a non-typical source contaminated the measurement

Appendix E-4

Field Pictures

Noise Measurement Photographs


LT-1 Looking Northeast


LT-1 Looking Southeast


LT-1 Looking Southwest

Noise Measurement Photographs

LT-2 Looking North

LT-2 Looking North, close up

LT-2 Looking East

LT-2 Looking South

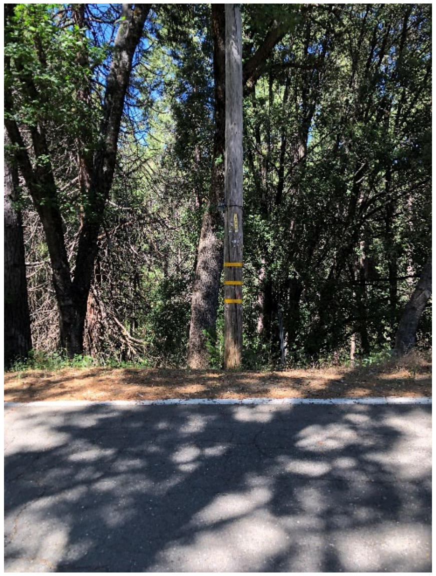
Noise Measurement Photographs

LT-3 Looking Northeast

LT-3 Looking Southeast

LT-3 Looking Southwest

Noise Measurement Photographs



LT-4 Looking Northeast

LT-4 Looking Northwest

LT-4 Looking Southeast

Noise Measurement Photographs

LT-5 Looking North

LT-5 Looking Northwest

LT-5 Looking West

Noise Measurement Photographs

LT-6 Looking East

LT-6 Looking Southeast

LT-6 Looking West

Noise Measurement Photographs


ST-1 Looking North


ST-1 Looking Northeast


ST-1 Looking Southwest


ST-1 Looking Southeast

Noise Measurement Photographs


ST-2 Looking East


ST-2 Looking South


ST-2 Looking West

Appendix E-5
Construction Noise Modeling

Code	Phase/Sub-Phase	Equipment Type	Fuel Type	# of equipment per day	Operating hours/equipment per day	
1	**Mobilization and Access Development**					
1-1	Tree Removal	CAT 325DFM Tracked Log Loader	Diesel	1	8	
1-1	Tree Removal	CAT 950H Rubber Tire Loader	Diesel	1	6	
1-1	Tree Removal	CAT 545C Rubber Tire Skid w/ Winch	Diesel	1	8	
1-1	Tree Removal	Timbco 425 Feller-Buncher	Diesel	1	8	Added 6/26 per PD revision
1-1	Tree Removal	John Deere 2654G Log Processor	Diesel	1	8	Added 6/26 per PD revision
1-1	Tree Removal	CAT 527 Tracked Skidder	Diesel	1	6	
1-1	Tree Removal	Peterson Pacific 4310B Chipper	Diesel	1	6	
1-1	Tree Removal	Chainsaw	Gasoline	3	8	Added 6/26 per PD revision
1-1	Tree Removal	4000 Gallon Water Truck	Diesel	1	6	
1-1	Tree Removal	Ford F-250	Gas	3	1.5	
1-2	*Mobilization*	*None*	-	-	-	
1-3	Laydown Area Development	CAT D6 Dozer	Diesel	1	8	
1-3	Laydown Area Development	CAT TL 1255 Telehandler	Diesel	1	6	
1-3	Laydown Area Development	CAT 950 Loader	Diesel	1	6	
1-3	Laydown Area Development	4000 Gallon Water Truck	Diesel	1	8	
1-3	Laydown Area Development	Ford F250	Gas	1	1.5	
1-4	Access Road Construction	CAT D6 Dozer	Diesel	1	8	
1-4	Access Road Construction	CAT 735 Off-Highway Truck	Diesel	4	9	
1-4	Access Road Construction	CAT 349 Excavator	Diesel	1	9	
1-4	Access Road Construction	CAT CP86 Roller Compactor	Diesel	1	10	
1-4	Access Road Construction	4000 Gal Water Truck	Diesel	1	10	
1-4	Access Road Construction	Ford F250	Gas	1	2	
2	**Spillway Chute and Flip Bucket**					
2-1	Spillway excavation/subgrade	CAT D6 Dozer	Diesel	1	8	
2-1	Spillway excavation/subgrade	CAT 735 Off-Highway Truck	Diesel	4	9	
2-1	Spillway excavation/subgrade	CAT 349 Excavator	Diesel	1	9	
2-1	Spillway excavation/subgrade	CAT 297/299 Skid Steer	Diesel	1	5	
2-1	Spillway excavation/subgrade	Sandvick Ranger 600R Drill	Diesel	1	5	
2-1	Spillway excavation/subgrade	4000 Gallon Water Truck	Diesel	1	10	
2-1	Spillway excavation/subgrade	Ford F250	Gas	1	2	
2-2	Spillway Form and Pour Concrete	Concrete Pump	Diesel	1	5	
2-2	Spillway Form and Pour Concrete	375 Air Compressor	Diesel	1	5	
2-2	Spillway Form and Pour Concrete	Crane Crawler 150 Ton	Diesel	1	6	
2-2	Spillway Form and Pour Concrete	Generator 45-55 kW (for light tower)	Diesel	1	10	
2-2	Spillway Form and Pour Concrete	CAT 297/299 Skid Steer	Diesel	1	5	
2-2	Spillway Form and Pour Concrete	Ford F250	Gas	1	2	
2-2	Spillway Form and Pour Concrete	Ford F450 Flat Bed	Diesel	1	8	
2-3	*Drains, Cleanouts, and Backfill*	*None*	-	-	-	
3	**Cofferdam**					
3-1 to 3-3	Mass concrete, Excavate cofferdam, Place piles, sheets, and concrete	CAT TL 1255 Telehandler	Diesel	1	6	*Equipment used through all Phase 3 sub-phases, excluding Trench Cutoff Concrete*
3-1 to 3-3	Mass concrete, Excavate cofferdam, Place piles, sheets, and concrete	CAT 336 Excavator	Diesel	1	5	*Equipment used through all Phase 3 sub-phases, excluding Trench Cutoff Concrete*
3-1 to 3-3	Mass concrete, Excavate cofferdam, Place piles, sheets, and concrete	Crane Crawler 150 Ton	Diesel	1	6	*Equipment used through all Phase 3 sub-phases, excluding Trench Cutoff Concrete*
3-1 to 3-3	Mass concrete, Excavate cofferdam, Place piles, sheets, and concrete	Ford F250	Gas	1	2	*Equipment used through all Phase 3 sub-phases, excluding Trench Cutoff Concrete*
3-1 to 3-3	Mass concrete, Excavate cofferdam, Place piles, sheets, and concrete	Ford F550	Diesel	1	2	*Equipment used through all Phase 3 sub-phases, excluding Trench Cutoff Concrete*
3-4, 3-5, 3-6	Trench Cutoff Concrete (limited to 3-days)	Concrete Pump	Diesel	1	8	*Equipment used for all three days*
3-4, 3-5, 3-6	Trench Cutoff Concrete (limited to 3-days)	CAT 297/299 Skid Steer	Diesel	1	5	*Equipment used for all three days*
3-4, 3-5, 3-6	Trench Cutoff Concrete (limited to 3-days)	Generator 45-55 kW	Diesel	1	10	*Equipment used for all three days*
3-4, 3-5, 3-6	Trench Cutoff Concrete (limited to 3-days)	CAT TL 1255 Telehandler	Diesel	1	6	
3-4, 3-5, 3-6	Trench Cutoff Concrete (limited to 3-days)	Ford F250	Gas	1	2	*Equipment used for all three days*
4	**Crest Structure**					
4-1	Crest excavation/ subgrade	CAT D6 Dozer	Diesel	1	8	
4-1	Crest excavation/ subgrade	CAT 735 Off-Highway Truck	Diesel	4	9	
4-1	Crest excavation/ subgrade	CAT 349 Excavator	Diesel	1	9	
4-1	Crest excavation/ subgrade	Sandvick Ranger 600R Drill	Diesel	1	5	
4-1	Crest excavation/ subgrade	4000 Gallon Water Truck	Diesel	1	10	
4-1	Crest excavation/ subgrade	Ford F250	Gas	1	2	
4-2	Crest Form and Pour Concrete	Concrete Pump	Diesel	1	5	
4-2	Crest Form and Pour Concrete	375 Air Compressor	Diesel	1	5	
4-2	Crest Form and Pour Concrete	Crane Crawler 150 Ton	Diesel	1	6	
4-2	Crest Form and Pour Concrete	Generator 45-55 kW (for light tower)	Diesel	1	10	
4-2	Crest Form and Pour Concrete	CAT 297/299 Skid Steer	Diesel	1	5	
4-2	Crest Form and Pour Concrete	Ford F250	Gas	1	2	
4-2	Crest Form and Pour Concrete	Ford F450 Flat Bed	Diesel	1	2	
5	**Dam Notch and Tie-in Chute**					
5-1, 5-2	Demolition, Excavation, Subgrade Prep, and Rock Anchors	CAT 336 Excavator	Diesel	1	10	*Equipment used for Phases 5-1 and 5-2*

5-1, 5-2	Demolition, Excavation, Subgrade Prep, and Rock Anchors	CAT 349 Excavator	Diesel	1	10	*Equipment used for Phases 5-1 and 5-2*
5-1, 5-2	Demolition, Excavation, Subgrade Prep, and Rock Anchors	Hydraulic Breaker for Excavator	N/A	1	10	*** Assuming Equipment used for Phases 5-1 and 5-2*
5-1, 5-2	Demolition, Excavation, Subgrade Prep, and Rock Anchors	Concrete Saws	Gas	2	8	*** Assuming Equipment used for Phases 5-1 and 5-2*
5-1, 5-2	Demolition, Excavation, Subgrade Prep, and Rock Anchors	CAT 735 Off-Highway Truck	Diesel	1	3	*Equipment used for Phases 5-1 and 5-2*
5-1, 5-2	Demolition, Excavation, Subgrade Prep, and Rock Anchors	Ford F250	Gas	1	2	*Equipment used for Phases 5-1 and 5-2*
5-3, 5-4	Form and Pour Concrete; Footbridge Install	Concrete Pump	Diesel	1	2	*Equipment used for Phases 5-3 and 5-4*
5-3, 5-4	Form and Pour Concrete; Footbridge Install	375 Air Compressor	Diesel	1	5	*Equipment used for Phases 5-3 and 5-4*
5-3, 5-4	Form and Pour Concrete; Footbridge Install	Crane Crawler 150 Ton	Diesel	1	6	*Equipment used for Phases 5-3 and 5-4*
5-3, 5-4	Form and Pour Concrete; Footbridge Install	Generator 45-55 kW (for light tower)	Diesel	1	10	*Equipment used for Phases 5-3 and 5-4*
5-3, 5-4	Form and Pour Concrete; Footbridge Install	CAT 297/299 Skid Steer	Diesel	1	5	
5-3, 5-4	Form and Pour Concrete; Footbridge Install	Ford F250	Gas	1	2	*Equipment used for Phases 5-3 and 5-4*
5-3, 5-4	Form and Pour Concrete; Footbridge Install	Ford F450 Flat Bed	Diesel	1	2	*Equipment used for Phases 5-3 and 5-4*
6	**Plunge Pool**					
6-1	Flow bypass	Generator 55 kW	Diesel	1	24	
6-2	Excavation	55KW generator (for bypass pumps)	Diesel	1	10	
6-2	Excavation	CAT D6 Dozer	Diesel	1	8	
6-2	Excavation	CAT 735 Off-Highway Truck	Diesel	2	9	
6-2	Excavation	CAT 349 Excavator	Diesel	1	9	
6-2	Excavation	4000 Gallon Water Truck	Diesel	1	10	
6-3	Slope Protection	Sandvick Ranger 600R Drill	Diesel	1	5	
6-3	Slope Protection	Putzmeister TK 20 Shotcrete Pump	Diesel	1	5	
6-3	Slope Protection	Ford F250	Gas	1	2	
7	**Remaining Work Scope**					
7-1	Cofferdam Removal	CAT TL 1255 Telehandler	Diesel	1	6	
7-1	Cofferdam Removal	Crane Crawler 150 Ton	Diesel	1	6	
7-1	Cofferdam Removal	Concrete Saws	Gas	2	8	
7-2	Lighting	CAT TL 1255 Telehandler	Diesel	1	6	
7-2	Lighting	Ford F250	Gas	1	2.5	
7-3	Log Boom	CAT 336 Excavator	Diesel	1	8	
7-4, 7-5	Site Restoration and Demobilization	CAT 297/299 Skid Steer	Diesel	1	10	*Equipment used for Phases 7-4 and 7-5*
7-4, 7-5	Site Restoration and Demobilization	CAT 336 Excavator	Diesel	1	5	*Equipment used for Phases 7-4 and 7-5*
7-4, 7-5	Site Restoration and Demobilization	CAT TL 1255 Telehandler	Diesel	1	6	*Equipment used for Phases 7-4 and 7-5*
7-4, 7-5	Site Restoration and Demobilization	Ford F250	Gas	1	2.5	*Equipment used for Phases 7-4 and 7-5*
7-4, 7-5	Site Restoration and Demobilization	4000 Gallon Water Truck	Diesel	1	10	*Equipment used for Phases 7-4 and 7-5*
7-4, 7-5	Site Restoration and Demobilization	Ford F450 Flat Bed	Diesel	1	2	*Equipment used for Phases 7-4 and 7-5*
8	**Spillway Abandonment and Cofferdam Removal**					
8-1	Remove Cofferdam	CAT TL 1255 Telehandler	Diesel	1	6	
8-1	Remove Cofferdam	Crane Crawler 150 Ton	Diesel	1	6	
8-1	Remove Cofferdam	Ford F250	Gas	1	2	
8-1	Remove Cofferdam	Concrete Saws	Gas	2	8	
8-2, 8-3	Canal Side Channel, Cover Bathtub and Siphon	Crane RT Hydraulic 90	Diesel	1	8	*Equipment used for Phases 8-2 and 8-3*
8-2, 8-3	Canal Side Channel, Cover Bathtub and Siphon	CAT TL 1255 Telehandler	Diesel	1	6	*Equipment used for Phases 8-2 and 8-3*
8-2, 8-3	Canal Side Channel, Cover Bathtub and Siphon	Concrete Pump	Diesel	1	5	*Equipment used for Phases 8-2 and 8-3*
8-2, 8-3	Canal Side Channel, Cover Bathtub and Siphon	Ford F250	Gas	1	2	*Equipment used for Phases 8-2 and 8-3*

		Noise Level (dBA Leq)				
Distance (feet)	**Distance (Miles)**	**Tree Removal**	**Laydown Area Development**	**Access Road Construction**	**Spillway/Dam Demolition**	**Spillway/Dam Construction [1]**
50	0.01	90.3	81.0	81.9	87.8	82.1
100	0.02	84.2	75.0	75.8	81.8	76.1
150	0.03	80.7	71.5	72.3	78.2	72.6
200	0.04	78.2	69.0	69.8	75.7	70.1
300	0.06	74.7	65.5	66.3	72.2	66.6
400	0.08	72.2	63.0	63.8	69.7	64.1
800	0.15	66.2	57.0	57.8	63.7	58.1
1000	0.19	64.2	55.0	55.8	61.8	56.1
1250	0.24	62.3	53.1	53.9	59.8	54.2
1500	0.28	60.7	51.5	52.3	58.2	52.6
2000	0.38	58.2	49.0	49.8	55.7	50.1
4000	0.76	52.2	43.0	43.8	49.7	44.1
6000	1.14	48.7	39.5	40.3	46.2	40.6
8000	1.52	46.2	37.0	37.8	43.7	38.1
10000	1.89	44.2	35.0	35.8	41.8	36.1
11500	2.18	43.0	33.8	34.6	40.5	34.9
12000	2.27	42.7	33.4	34.3	40.2	34.5
14100	2.67	41.3	32.0	32.9	38.8	33.1
15000	2.84	40.7	31.5	32.3	38.2	32.6
15300	2.90	40.6	31.3	32.2	38.1	32.4
20000	3.79	38.2	29.0	29.8	35.7	30.1

Footnote:

[1.] Spillway Construction phase is made up 3 loudest equipment from overlapping phases occuring within the spillway construction area

		Noise Level (dBA Leq)			
Distance (feet)	**Distance (Miles)**	**1-1 Tree Removal**	**1-2 Mobilization**	**1-3 Laydown Area Development**	**1-4 Access Road Construction**
50	0.01	90	N/A	81	82
100	0.02	84	N/A	75	76
150	0.03	81	N/A	71	72
200	0.04	78	N/A	69	70
300	0.06	75	N/A	65	66
400	0.08	72	N/A	63	64
800	0.15	66	N/A	57	58
1000	0.19	64	N/A	55	56
1250	0.24	62	N/A	53	54
1500	0.28	61	N/A	51	52
2000	0.38	58	N/A	49	50
4000	0.76	52	N/A	43	44
6000	1.14	49	N/A	39	40
8000	1.52	46	N/A	37	38
10000	1.89	44	N/A	35	36
11500	2.18	43	N/A	34	35
12000	2.27	43	N/A	33	34
14100	2.67	41	N/A	32	33
15000	2.84	41	N/A	31	32
15300	2.90	41	N/A	31	32
20000	3.79	38	N/A	29	30

Note: Equipment lists provided by PG&E did not include equipment for Phase 1-2 Mobilization.

		Noise Level (dBA Leq)		
Distance (feet)	**Distance (Miles)**	**2-1 Spillway Excavation/Subgrade**	**2-2 Spillway Form and Pour Concrete**	**2-3 Drains, Cleanouts, and Backfill Mobilization**
50	0.01	82	80	N/A
100	0.02	76	74	N/A
150	0.03	73	71	N/A
200	0.04	70	68	N/A
300	0.06	67	65	N/A
400	0.08	64	62	N/A
800	0.15	58	56	N/A
1000	0.19	56	54	N/A
1250	0.24	54	52	N/A
1500	0.28	53	51	N/A
2000	0.38	50	48	N/A
4000	0.76	44	42	N/A
6000	1.14	41	39	N/A
8000	1.52	38	36	N/A
10000	1.89	36	34	N/A
11500	2.18	35	33	N/A
12000	2.27	35	33	N/A
14100	2.67	33	31	N/A
15000	2.84	33	31	N/A
15300	2.90	32	31	N/A
20000	3.79	30	28	N/A

Note: Equipment lists provided by PG&E did not include equipment for Phase 2-3 Drains, Cleanouts, and Backfill Mobilization.

		Noise Level (dBA Leq)			
Distance (feet)	Distance (Miles)	3-1 Mass Concrete	3-2 Excavate Cofferdam	3-3 Place Piles, Sheets, and Concrete	3-4, 3-5, 3-6 Trench Cutoff Concrete
50	0.01	80	80	80	80
100	0.02	74	74	74	74
150	0.03	71	71	71	71
200	0.04	68	68	68	68
300	0.06	65	65	65	65
400	0.08	62	62	62	62
800	0.15	56	56	56	56
1000	0.19	54	54	54	54
1250	0.24	52	52	52	52
1500	0.28	51	51	51	51
2000	0.38	48	48	48	48
4000	0.76	42	42	42	42
6000	1.14	39	39	39	39
8000	1.52	36	36	36	36
10000	1.89	34	34	34	34
11500	2.18	33	33	33	33
12000	2.27	32	32	32	33
14100	2.67	31	31	31	31
15000	2.84	31	31	31	31
15300	2.90	30	30	30	31
20000	3.79	28	28	28	28

		Noise Level (dBA Leq)	
Distance (feet)	**Distance (Miles)**	**4-1 Crest Excavation/Subgrade**	**4-2 Crest Form and Pour Concrete**
50	0.01	82	80
100	0.02	76	74
150	0.03	73	71
200	0.04	70	68
300	0.06	67	65
400	0.08	64	62
800	0.15	58	56
1000	0.19	56	54
1250	0.24	54	52
1500	0.28	53	51
2000	0.38	50	48
4000	0.76	44	42
6000	1.14	41	39
8000	1.52	38	36
10000	1.89	36	34
11500	2.18	35	33
12000	2.27	35	33
14100	2.67	33	31
15000	2.84	33	31
15300	2.90	32	31
20000	3.79	30	28

		Noise Level (dBA Leq)			
Distance (feet)	Distance (Miles)	5-1 Demolition	5-2 Excavation, Subgrade	5-3 Form and Pour Concrete	5-4 Footbridge Install
50	0.01	88	88	80	80
100	0.02	82	82	74	74
150	0.03	78	78	71	71
200	0.04	76	76	68	68
300	0.06	72	72	65	65
400	0.08	70	70	62	62
800	0.15	64	64	56	56
1000	0.19	62	62	54	54
1250	0.24	60	60	52	52
1500	0.28	58	58	51	51
2000	0.38	56	56	48	48
4000	0.76	50	50	42	42
6000	1.14	46	46	39	39
8000	1.52	44	44	36	36
10000	1.89	42	42	34	34
11500	2.18	41	41	33	33
12000	2.27	40	40	33	33
14100	2.67	39	39	31	31
15000	2.84	38	38	31	31
15300	2.90	38	38	31	31
20000	3.79	36	36	28	28

		Noise Level (dBA Leq)		
Distance (feet)	**Distance (Miles)**	**6-1 Flow Bypass**	**6-2 Excavation**	**6-3 Slope Protection**
50	0.01	78	82	81
100	0.02	72	76	75
150	0.03	68	73	71
200	0.04	66	70	69
300	0.06	62	67	65
400	0.08	60	64	63
800	0.15	54	58	57
1000	0.19	52	56	55
1250	0.24	50	55	53
1500	0.28	48	53	51
2000	0.38	46	50	49
4000	0.76	40	44	43
6000	1.14	36	41	39
8000	1.52	34	38	37
10000	1.89	32	36	35
11500	2.18	31	35	34
12000	2.27	30	35	33
14100	2.67	29	33	32
15000	2.84	28	33	31
15300	2.90	28	33	31
20000	3.79	26	30	29

		Noise Level (dBA Leq)				
Distance (feet)	Distance (Miles)	7-1 Cofferdam Removal	7-2 Lighting	7-3 Log Boom	7-4 Site Restoration	7-5 Demobilization
50	0.01	88	76	77	80	80
100	0.02	82	70	71	74	74
150	0.03	78	67	67	71	71
200	0.04	76	64	65	68	68
300	0.06	72	61	61	65	65
400	0.08	70	58	59	62	62
800	0.15	64	52	53	56	56
1000	0.19	62	50	51	54	54
1250	0.24	60	49	49	52	52
1500	0.28	58	47	47	51	51
2000	0.38	56	44	45	48	48
4000	0.76	50	38	39	42	42
6000	1.14	46	35	35	39	39
8000	1.52	44	32	33	36	36
10000	1.89	42	30	31	34	34
11500	2.18	41	29	30	33	33
12000	2.27	40	29	29	33	33
14100	2.67	39	27	28	31	31
15000	2.84	38	27	27	31	31
15300	2.90	38	27	27	31	31
20000	3.79	36	24	25	28	28

		Noise Level (dBA Leq)		
Distance (feet)	Distance (Miles)	8-1 Remove Cofferdam	8-2 Canal Side Channel	8-3 Cover Bathtub and Siphon
50	0.01	88	79	79
100	0.02	82	73	73
150	0.03	78	69	69
200	0.04	76	67	67
300	0.06	72	63	63
400	0.08	70	61	61
800	0.15	64	55	55
1000	0.19	62	53	53
1250	0.24	60	51	51
1500	0.28	58	49	49
2000	0.38	56	47	47
4000	0.76	50	41	41
6000	1.14	46	37	37
8000	1.52	44	35	35
10000	1.89	42	33	33
11500	2.18	41	32	32
12000	2.27	40	31	31
14100	2.67	39	30	30
15000	2.84	38	29	29
15300	2.90	38	29	29
20000	3.79	36	27	27

Table 1. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: Tree Removal			
Source 1: Chain Saw - Sound level (dBA) at 50 feet =	84	20%	77.0
Source 2: Chain Saw - Sound level (dBA) at 50 feet =	84	20%	77.0
Source 3: Woodchipper - Sound level (dBA) at 50 feet =	93	50%	89.8
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			94
All Sources Combined - Leq sound level (dBA) at 50 feet =			90

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	101
25	6	0.0	100	96
50	0	0.0	94	90
75	-4	0.0	90	87
100	-6	0.0	88	84
200	-12	0.0	82	78
300	-16	0.0	78	75
500	-20	0.0	74	70
1000	-26	0.0	68	64
2000	-32	0.0	62	58

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Table 2. Construction Noise

Source Data:	**Maximum Sound Level (dBA)**	**Utilization Factor**	**Leq Sound Level (dBA)**
Construction Condition: Laydown Area Development			
Source 1: Dozer - Sound level (dBA) at 50 feet =	82	40%	78.0
Source 2: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Source 3: Front end loader - Sound level (dBA) at 50 feet =	79	40%	75.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			85
All Sources Combined - Leq sound level (dBA) at 50 feet =			81

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	95	91
25	6	0.0	91	87
50	0	0.0	85	81
75	-4	0.0	81	78
100	-6	0.0	79	75
200	-12	0.0	73	69
300	-16	0.0	69	65
500	-20	0.0	65	61
1000	-26	0.0	59	55
2000	-32	0.0	53	49

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 3. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: Access Road Construction			
Source 1: Dozer - Sound level (dBA) at 50 feet =	82	40%	78.0
Source 2: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 3: Compactor - Sound level (dBA) at 50 feet =	83	20%	76.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			87
All Sources Combined - Leq sound level (dBA) at 50 feet =			82

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	97	92
25	6	0.0	93	88
50	0	0.0	87	82
75	-4	0.0	83	78
100	-6	0.0	81	76
200	-12	0.0	75	70
300	-16	0.0	71	66
500	-20	0.0	67	62
1000	-26	0.0	61	56
2000	-32	0.0	55	50

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 4. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: Demolition			
Source 1: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 2: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 3: Mounted Impact Hammer - Sound level (dBA) at 50 feet =	90	20%	83.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			95
All Sources Combined - Leq sound level (dBA) at 50 feet =			88

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	105	98
25	6	0.0	101	94
50	0	0.0	95	88
75	-4	0.0	91	84
100	-6	0.0	89	82
200	-12	0.0	83	76
300	-16	0.0	79	72
500	-20	0.0	75	68
1000	-26	0.0	69	62
2000	-32	0.0	63	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 5. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: Worst Case Dam/Spillway Construction			
Source 1: Drill Rig - Sound level (dBA) at 50 feet =	84	20%	77.0
Source 2: Generator - Sound level (dBA) at 50 feet =	81	50%	78.0
Source 3: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			87
All Sources Combined - Leq sound level (dBA) at 50 feet =			82

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	97	93
25	6	0.0	93	88
50	0	0.0	87	82
75	-4	0.0	83	79
100	-6	0.0	81	76
200	-12	0.0	75	70
300	-16	0.0	71	67
500	-20	0.0	67	62
1000	-26	0.0	61	56
2000	-32	0.0	55	50

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 6. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 1-1 Tree Removal			
Source 1: Chain Saw - Sound level (dBA) at 50 feet =	84	20%	77.0
Source 2: Chain Saw - Sound level (dBA) at 50 feet =	84	20%	77.0
Source 3: Woodchipper - Sound level (dBA) at 50 feet =	93	50%	89.8
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			94
All Sources Combined - Leq sound level (dBA) at 50 feet =			90

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	104	101
25	6	0.0	100	96
50	0	0.0	94	90
75	-4	0.0	90	87
100	-6	0.0	88	84
200	-12	0.0	82	78
300	-16	0.0	78	75
500	-20	0.0	74	70
1000	-26	0.0	68	64
2000	-32	0.0	62	58

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 7. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 1-3 Laydown Area Development			
Source 1: Dozer - Sound level (dBA) at 50 feet =	82	40%	78.0
Source 2: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Source 3: Front end loader - Sound level (dBA) at 50 feet =	79	40%	75.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			85
All Sources Combined - Leq sound level (dBA) at 50 feet =			81

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	95	91
25	6	0.0	91	87
50	0	0.0	85	81
75	-4	0.0	81	78
100	-6	0.0	79	75
200	-12	0.0	73	69
300	-16	0.0	69	65
500	-20	0.0	65	61
1000	-26	0.0	59	55
2000	-32	0.0	53	49

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 8. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 1-4 Access Road Construction			
Source 1: Dozer - Sound level (dBA) at 50 feet =	82	40%	78.0
Source 2: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 3: Compactor - Sound level (dBA) at 50 feet =	83	20%	76.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			87
All Sources Combined - Leq sound level (dBA) at 50 feet =			82

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	97	92
25	6	0.0	93	88
50	0	0.0	87	82
75	-4	0.0	83	78
100	-6	0.0	81	76
200	-12	0.0	75	70
300	-16	0.0	71	66
500	-20	0.0	67	62
1000	-26	0.0	61	56
2000	-32	0.0	55	50

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 9. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 2-1 Spillway Excavation/Subgrade			
Source 1: Dozer - Sound level (dBA) at 50 feet =	82	40%	78.0
Source 2: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 3: Drill Rig - Sound level (dBA) at 50 feet =	84	20%	77.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			87
All Sources Combined - Leq sound level (dBA) at 50 feet =			82

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	98	93
25	6	0.0	93	88
50	0	0.0	87	82
75	-4	0.0	84	79
100	-6	0.0	81	76
200	-12	0.0	75	70
300	-16	0.0	72	67
500	-20	0.0	67	62
1000	-26	0.0	61	56
2000	-32	0.0	55	50

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 10. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 2-2 Spillway Form and Pour Concrete			
Source 1: Concrete pump truck - Sound level (dBA) at 50 feet =	81	20%	74.0
Source 2: Crane - Sound level (dBA) at 50 feet =	81	16%	73.0
Source 3: Generator - Sound level (dBA) at 50 feet =	81	50%	78.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			86
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	91
25	6	0.0	92	86
50	0	0.0	86	80
75	-4	0.0	82	77
100	-6	0.0	80	74
200	-12	0.0	74	68
300	-16	0.0	70	65
500	-20	0.0	66	60
1000	-26	0.0	60	54
2000	-32	0.0	54	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 11. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 3-1 Mass Concrete			
Source 1: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Source 2: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 3: Crane - Sound level (dBA) at 50 feet =	81	16%	73.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			85
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	91
25	6	0.0	91	86
50	0	0.0	85	80
75	-4	0.0	82	77
100	-6	0.0	79	74
200	-12	0.0	73	68
300	-16	0.0	70	65
500	-20	0.0	65	60
1000	-26	0.0	59	54
2000	-32	0.0	53	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 12. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 3-2 Excavate Cofferdam			
Source 1: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Source 2: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 3: Crane - Sound level (dBA) at 50 feet =	81	16%	73.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			85
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	91
25	6	0.0	91	86
50	0	0.0	85	80
75	-4	0.0	82	77
100	-6	0.0	79	74
200	-12	0.0	73	68
300	-16	0.0	70	65
500	-20	0.0	65	60
1000	-26	0.0	59	54
2000	-32	0.0	53	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 13. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 3-3 Place Piles, Sheets, and Concrete			
Source 1: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Source 2: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 3: Crane - Sound level (dBA) at 50 feet =	81	16%	73.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			85
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	91
25	6	0.0	91	86
50	0	0.0	85	80
75	-4	0.0	82	77
100	-6	0.0	79	74
200	-12	0.0	73	68
300	-16	0.0	70	65
500	-20	0.0	65	60
1000	-26	0.0	59	54
2000	-32	0.0	53	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 14. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 3-4, 3-5, 3-6 Trench Cutoff Concrete			
Source 1: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Source 2: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 3: Concrete pump truck - Sound level (dBA) at 50 feet =	81	20%	74.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			85
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	91
25	6	0.0	91	86
50	0	0.0	85	80
75	-4	0.0	82	77
100	-6	0.0	79	74
200	-12	0.0	73	68
300	-16	0.0	70	65
500	-20	0.0	65	60
1000	-26	0.0	59	54
2000	-32	0.0	53	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 15. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 4-1 Crest Excavation/Subgrade			
Source 1: Dozer - Sound level (dBA) at 50 feet =	82	40%	78.0
Source 2: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 3: Drill Rig - Sound level (dBA) at 50 feet =	84	20%	77.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			87
All Sources Combined - Leq sound level (dBA) at 50 feet =			82

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	98	93
25	6	0.0	93	88
50	0	0.0	87	82
75	-4	0.0	84	79
100	-6	0.0	81	76
200	-12	0.0	75	70
300	-16	0.0	72	67
500	-20	0.0	67	62
1000	-26	0.0	61	56
2000	-32	0.0	55	50

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 16. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 4-2 Crest Form and Pour Concrete			
Source 1: Concrete pump truck - Sound level (dBA) at 50 feet =	81	20%	74.0
Source 2: Crane - Sound level (dBA) at 50 feet =	81	16%	73.0
Source 3: Generator - Sound level (dBA) at 50 feet =	81	50%	78.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			86
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	91
25	6	0.0	92	86
50	0	0.0	86	80
75	-4	0.0	82	77
100	-6	0.0	80	74
200	-12	0.0	74	68
300	-16	0.0	70	65
500	-20	0.0	66	60
1000	-26	0.0	60	54
2000	-32	0.0	54	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 17. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 5-1 Demolition			
Source 1: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 2: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 3: Mounted Impact Hammer - Sound level (dBA) at 50 feet =	90	20%	83.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			95
All Sources Combined - Leq sound level (dBA) at 50 feet =			88

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	105	98
25	6	0.0	101	94
50	0	0.0	95	88
75	-4	0.0	91	84
100	-6	0.0	89	82
200	-12	0.0	83	76
300	-16	0.0	79	72
500	-20	0.0	75	68
1000	-26	0.0	69	62
2000	-32	0.0	63	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 18. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 5-2 Excavation, Subgrade			
Source 1: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 2: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 3: Mounted Impact Hammer - Sound level (dBA) at 50 feet =	90	20%	83.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			95
All Sources Combined - Leq sound level (dBA) at 50 feet =			88

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	105	98
25	6	0.0	101	94
50	0	0.0	95	88
75	-4	0.0	91	84
100	-6	0.0	89	82
200	-12	0.0	83	76
300	-16	0.0	79	72
500	-20	0.0	75	68
1000	-26	0.0	69	62
2000	-32	0.0	63	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 19. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 5-3 Form and Pour Concrete			
Source 1: Concrete pump truck - Sound level (dBA) at 50 feet =	81	20%	74.0
Source 2: Crane - Sound level (dBA) at 50 feet =	81	16%	73.0
Source 3: Generator - Sound level (dBA) at 50 feet =	81	50%	78.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			86
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	91
25	6	0.0	92	86
50	0	0.0	86	80
75	-4	0.0	82	77
100	-6	0.0	80	74
200	-12	0.0	74	68
300	-16	0.0	70	65
500	-20	0.0	66	60
1000	-26	0.0	60	54
2000	-32	0.0	54	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 20. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 5-4 Footbridge Install			
Source 1: Concrete pump truck - Sound level (dBA) at 50 feet =	81	20%	74.0
Source 2: Crane - Sound level (dBA) at 50 feet =	81	16%	73.0
Source 3: Generator - Sound level (dBA) at 50 feet =	81	50%	78.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			86
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	91
25	6	0.0	92	86
50	0	0.0	86	80
75	-4	0.0	82	77
100	-6	0.0	80	74
200	-12	0.0	74	68
300	-16	0.0	70	65
500	-20	0.0	66	60
1000	-26	0.0	60	54
2000	-32	0.0	54	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 21. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 6-1 Flow Bypass			
Source 1: Generator - Sound level (dBA) at 50 feet =	81	50%	78.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			81
All Sources Combined - Leq sound level (dBA) at 50 feet =			78

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	91	88
25	6	0.0	87	84
50	0	0.0	81	78
75	-4	0.0	77	74
100	-6	0.0	75	72
200	-12	0.0	69	66
300	-16	0.0	65	62
500	-20	0.0	61	58
1000	-26	0.0	55	52
2000	-32	0.0	49	46

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 22. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 6-2 Excavation			
Source 1: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 2: Dozer - Sound level (dBA) at 50 feet =	82	40%	78.0
Source 3: Generator - Sound level (dBA) at 50 feet =	81	50%	78.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			86
All Sources Combined - Leq sound level (dBA) at 50 feet =			82

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	97	93
25	6	0.0	92	88
50	0	0.0	86	82
75	-4	0.0	83	79
100	-6	0.0	80	76
200	-12	0.0	74	70
300	-16	0.0	71	67
500	-20	0.0	66	62
1000	-26	0.0	60	56
2000	-32	0.0	54	50

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 23. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 6-3 Slope Protection			
Source 1: Drill Rig - Sound level (dBA) at 50 feet =	84	20%	77.0
Source 2: Pump - Sound level (dBA) at 50 feet =	81	50%	78.0
Source 3: Pickup Truck - Sound level (dBA) at 50 feet =	75	40%	71.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			86
All Sources Combined - Leq sound level (dBA) at 50 feet =			81

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	97	91
25	6	0.0	92	87
50	0	0.0	86	81
75	-4	0.0	83	77
100	-6	0.0	80	75
200	-12	0.0	74	69
300	-16	0.0	71	65
500	-20	0.0	66	61
1000	-26	0.0	60	55
2000	-32	0.0	54	49

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 24. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 7-1 Cofferdam Removal			
Source 1: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 2: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 3: Mounted Impact Hammer - Sound level (dBA) at 50 feet =	90	20%	83.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			95
All Sources Combined - Leq sound level (dBA) at 50 feet =			88

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	105	98
25	6	0.0	101	94
50	0	0.0	95	88
75	-4	0.0	91	84
100	-6	0.0	89	82
200	-12	0.0	83	76
300	-16	0.0	79	72
500	-20	0.0	75	68
1000	-26	0.0	69	62
2000	-32	0.0	63	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 25. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 7-2 Lighting			
Source 1: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Source 2: Pickup Truck - Sound level (dBA) at 50 feet =	75	40%	71.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			80
All Sources Combined - Leq sound level (dBA) at 50 feet =			76

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	91	87
25	6	0.0	86	82
50	0	0.0	80	76
75	-4	0.0	77	73
100	-6	0.0	74	70
200	-12	0.0	68	64
300	-16	0.0	65	61
500	-20	0.0	60	56
1000	-26	0.0	54	50
2000	-32	0.0	48	44

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 26. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 7-3 Log Boom			
Source 1: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			81
All Sources Combined - Leq sound level (dBA) at 50 feet =			77

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	91	87
25	6	0.0	87	83
50	0	0.0	81	77
75	-4	0.0	77	73
100	-6	0.0	75	71
200	-12	0.0	69	65
300	-16	0.0	65	61
500	-20	0.0	61	57
1000	-26	0.0	55	51
2000	-32	0.0	49	45

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 27. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 7-4 Site Restoration			
Source 1: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 2: Skid Steer (based on backhoe) - Sound level (dBA) at 50 feet =	78	40%	74.0
Source 3: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			84
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	95	91
25	6	0.0	90	86
50	0	0.0	84	80
75	-4	0.0	81	77
100	-6	0.0	78	74
200	-12	0.0	72	68
300	-16	0.0	69	65
500	-20	0.0	64	60
1000	-26	0.0	58	54
2000	-32	0.0	52	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 28. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 7-5 Demobilization			
Source 1: Excavator - Sound level (dBA) at 50 feet =	81	40%	77.0
Source 2: Skid Steer (based on backhoe) - Sound level (dBA) at 50 feet =	78	40%	74.0
Source 3: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			84
All Sources Combined - Leq sound level (dBA) at 50 feet =			80

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	95	91
25	6	0.0	90	86
50	0	0.0	84	80
75	-4	0.0	81	77
100	-6	0.0	78	74
200	-12	0.0	72	68
300	-16	0.0	69	65
500	-20	0.0	64	60
1000	-26	0.0	58	54
2000	-32	0.0	52	48

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 29. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 8-1 Remove Cofferdam			
Source 1: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 2: Concrete saw - Sound level (dBA) at 50 feet =	90	20%	83.0
Source 3: Mounted Impact Hammer - Sound level (dBA) at 50 feet =	90	20%	83.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			95
All Sources Combined - Leq sound level (dBA) at 50 feet =			88

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	105	98
25	6	0.0	101	94
50	0	0.0	95	88
75	-4	0.0	91	84
100	-6	0.0	89	82
200	-12	0.0	83	76
300	-16	0.0	79	72
500	-20	0.0	75	68
1000	-26	0.0	69	62
2000	-32	0.0	63	56

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 30. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 8-2 Canal Side Channel			
Source 1: Concrete pump truck - Sound level (dBA) at 50 feet =	81	20%	74.0
Source 2: Crane - Sound level (dBA) at 50 feet =	81	16%	73.0
Source 3: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			85
All Sources Combined - Leq sound level (dBA) at 50 feet =			79

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	89
25	6	0.0	91	85
50	0	0.0	85	79
75	-4	0.0	82	75
100	-6	0.0	79	73
200	-12	0.0	73	67
300	-16	0.0	70	63
500	-20	0.0	65	59
1000	-26	0.0	59	53
2000	-32	0.0	53	47

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Table 31. Construction Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Construction Condition: 8-3 Cover Bathtub and Siphon			
Source 1: Concrete pump truck - Sound level (dBA) at 50 feet =	81	20%	74.0
Source 2: Crane - Sound level (dBA) at 50 feet =	81	16%	73.0
Source 3: Telehandler (based on front end loader) - Sound level (dBA) at 50 feet =	79	40%	75.0
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			85
All Sources Combined - Leq sound level (dBA) at 50 feet =			79

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
15	10	0.0	96	89
25	6	0.0	91	85
50	0	0.0	85	79
75	-4	0.0	82	75
100	-6	0.0	79	73
200	-12	0.0	73	67
300	-16	0.0	70	63
500	-20	0.0	65	59
1000	-26	0.0	59	53
2000	-32	0.0	53	47

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding
from walls, topography or other barriers which may reduce sound levels further.

Appendix E-6

Construction Haul Truck Noise Modeling

Roadway Segment		Haul Trucks per day	Representative Noise Measurement	Measured Noise levels dB CNEL	Existing dB CNEL	Speed	Haul Only by speed dB CNEL	Sound Energy - Existing	Sound Energy - Haul Only	Existing + Haul dB Ldn	Delta
Tiger Creek Road	Before Power House	10	LT-4, ST-2	**55**	55.0	25	46.6	316227.8	45767.7	55.6	0.6
Tiger Creek Road	After Power House	10	LT-4, ST-2	**55**	55.0	15	47.9	316227.8	61789.8	55.8	0.8
Spur 1	Before Gate	38	LT-3	56	56.0	25	50.3	398107.2	107594.2	57.0	1.0
Spur 1	PG&E Side of Gate	38	LT-3	56	56.0	15	51.7	398107.2	148805.1	57.4	1.4

* Assumed distance of 50 feet from Roadway Centerline for screening analysis.

Appendix E-7

Batch Plant Noise Data and Modeling

Batch Plant Noise Measurements

Summary of Data to Use

Name	Leq	Distance, feet	Assumed Height, feet	Measurement Location	Noise Source
Loading/loaded concrete trucks	80.7	50	8.5	Adjacent to silo/main mixer barrel/loaded concrete trucks	On-site batch plant and truck noise
High silo noise sources	81.5	50	30	Adjacent to silos/scales/conveyors	On-site batch plant and truck noise
Low silo noise sources	78.7	50	8.5	Adjacent to cement delivery	Cement delivery truck
Truck Yard	71.3	50	8.5	Materials delivery/storage yard. Approx. 54 ft. from grizzly	Various trucks, material deliveries/storage
Truck wash	72.2	50	8.5	Adjacent to truck wash	Truck washout

Assumed heights may be conservative

Noise measurement data for a concrete batch plant collected on August 15, 2006. Measurement conducted at an operational concrete batch plant in the City of Gardena.

Batch Plant Noise

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	Leq Sound Level (dBA)
Concrete Batch Plant Noise			
Source 1: Loading/loaded concrete trucks - Sound level (dBA) at 50 feet =	81	100%	80.7
Source 2: High silo noise sources - Sound level (dBA) at 50 feet =	82	100%	81.5
Source 3: Low silo noise sources - Sound level (dBA) at 50 feet =	79	100%	78.7
Calculated Data:			
All Sources Combined - Lmax sound level (dBA) at 50 feet =			85
All Sources Combined - Leq sound level (dBA) at 50 feet =			85

Distance Between Source and Receiver (ft.)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Lmax Sound Level (dBA)	Calculated Leq Sound Level (dBA)
50	0	0.0	85	85
100	-6	0.0	79	79
150	-10	0.0	76	76
200	-12	0.0	73	73
280	**-15**	**0.0**	**70**	**70**
300	-16	0.0	70	70
500	-20	0.0	65	65
1000	-26	0.0	59	59
2000	-32	0.0	53	53

Geometric attenuation based on 6 dB per doubling of distance.
Ground affect attenuation based on 1.5 dB per doubling of distance
Note: This calculation does not include the effects, if any, of local shielding from walls, topography or other barriers which may reduce sound levels further.

Acoustical Average Distance	150	522
	280	275

Existing Ambient noise level	71	dBA Leq
Batch Plant Noise	70	
Added together	74	