DRAFT

Initial Study and Mitigated Negative Declaration

for the

Growlersburg Conservation Camp Replacement Project

March 2022

Lead Agency:

California Department of Forestry and Fire Protection
1416 9th Street
Sacramento, California 95814

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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1416 9th Street
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Prepared for:

State of California Department of General Services
Real Estate Services Division
707 Third Street, Fourth Floor
West Sacramento, California 95605

Prepared by:

2525 Warren Drive
Rocklin, California 95677

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DRAFT MITIGATED NEGATIVE DECLARATION CAL FIRE GROWLERSBURG CONSERVATION CAMP REPLACEMENT PROJECT

Lead Agency: State of California Department of Forestry and Fire Protection

Project Proponent: State of California Department of General Services, Real Estate Services Division

Project Location: The Project site is located in El Dorado County at 5540 Longview Lane, Georgetown in El Dorado County, California.

Project Description: The Proposed Project includes the replacement/upgrade of the existing Conservation Camp and associated facilities/structures. New facilities to be constructed would include an administration building, 136-bed inmate Dorm building, inmate recreation building, inmate hobby building, 6-bed California Department of Corrections and Rehabilitation (CDCR)/CAL FIRE barracks building, inmate kitchen and mess hall, multipurpose facility, inmate staging area (with restroom and showers), warehouse, carpentry shop, auto welding shop, vehicle storage building, sawmill shed, sawmill building, planer/assembly building (including dry kilns), pole barn, generate/pump/storage/building, covered vehicle rack, and vehicle wash recycling. The Proposed Project would be constructed on property currently controlled by CAL FIRE and an expansion area that is currently part of the camp property.

Public Review Period: **March 21, 2022– April 20, 2022**

Mitigation Measures Incorporated into the Project to Avoid Significant Effects:

Biological Resources

PLANT-1: **Floristic Plant Surveys.** Perform floristic plant surveys where Project implementation will impact California black oak woodlands or mixed conifer forest and woodland communities according to USFWS, CDFW, and CNPS protocols prior to construction. A qualified biologist should conduct the surveys and time them according to the appropriate phenological stage for identifying target species. Known reference populations should be visited and/or local herbaria records should be reviewed, if available, prior to surveys to confirm the phenological stage of the target species. If no special-status plants are found within the Project impact areas, no further measures pertaining to special-status plants are necessary.

PLANT-2: **Special-Status Plants.** If special-status plants are identified within 25-feet of the Project impact area, implement the following measures:

- If avoidance of special-status plants is feasible, establish and clearly demarcate avoidance zones for special-status plant occurrences prior to construction. Avoidance zones should include the extent of the special-status plants, plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and should be maintained until the completion of construction. A qualified biologist/biological monitor should be present if work must occur within the avoidance buffer to ensure special-status plants are not impacted by the work.
- If avoidance of special-status plants is not feasible, mitigate for significant impacts to special-status plants. Mitigation measures shall be developed in consultation with CDFW. Mitigation measures may include permanent preservation of onsite or offsite habitat for special-status plants and/or translocation of plants or seeds from impacted areas to unaffected habitats.

BIRD-1: **Pre- Construction Nesting Bird Surveys.** If construction is to occur during the nesting season (generally February 1 - August 31), conduct a pre-construction nesting bird survey of all suitable nesting habitat within 14 days of the commencement of construction. The survey shall be conducted within a 500-foot radius of Project impact limits for raptors and within a 100-foot radius for other nesting birds. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established by a qualified biologist in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival. Pre-construction nesting surveys are not required for construction activity outside the nesting season.

BAT-1: **Pre- Construction Bat Surveys.** Within 14 days prior to Project activities that may impact bat roosting habitat (e.g., removal of manmade structures or trees), a qualified biologist will survey for all suitable roosting habitat within the Project impact limits. If suitable roosting habitat is not identified, no further measures are necessary. If suitable roosting habitat is identified, a qualified biologist will conduct an evening bat emergence survey that may include acoustic monitoring to determine whether or not bats are present. If roosting bats are determined to be present within the Project impact limits, consultation with CDFW prior to initiation of construction activities and/or preparation of a Bat Management Plan outlining avoidance and minimization measures specific to the roost(s) potentially affected may be required.

OAK-1: **Mitigate through Mother Lode Land Trust.** The proposed project will pay the Mother Lode Land Trust (nonprofit organization) a total of $89,600 for the purchase of property containing Oak Woodland for permanent conservation and stewardship.

Cultural Resources

CUL-1: **Unanticipated Cultural Resources Discoveries.** Implement Measures to Protect Unanticipated Discoveries of Cultural Resources or Human Remains.

- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:
  - If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
  - If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify CAL FIRE. The agency shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be an Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work may not resume within the no-work radius until the Lead Agency, through consultation as appropriate, determines that the site either: 1) is not an Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to its satisfaction.
  - If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the El Dorado County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American MLD for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC may mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate CHRIS; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may

not resume within the no-work radius until the Lead Agency, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.

Geology and Soils

GEO-1: Discovery of Unknown Paleontological Resources.

- If any paleontological resources (i.e., fossils) are found during Project construction, construction shall be halted immediately in the subject area and the area shall be isolated using orange or yellow fencing until CAL FIRE is notified and the area is cleared for future work. A qualified paleontologist shall be retained to evaluate the find and recommend appropriate treatment of the inadvertently discovered paleontological resources. In addition, in the event of an inadvertent find, sediment samples should be collected and processed to determine the small fossil potential on the Project Site. If CAL FIRE resumes work in a location where paleontological remains have been discovered and cleared, CAL FIRE will have a paleontologist onsite to observe any continuing excavation to confirm that no additional paleontological resources are in the area. Any fossil materials uncovered during mitigation activities should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

Tribal Cultural Resources

TCR-1: Implement Measures to Protect Unanticipated Tribal Cultural Resources Discoveries. If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within 100 feet of the discovery. The construction foreman will notify DGS and CAL FIRE, which shall notify culturally affiliated tribe(s) and a qualified professional archaeologist. The responding tribe(s) will be afforded a reasonable opportunity to visit the discovery location to determine whether or not it is a tribal cultural resource. The following actions shall apply, depending on the nature of the find:

- If the culturally affiliated tribe(s) determines that the find does not represent a tribal cultural resource, and the qualified professional archaeologist determines that the find does not represent a potential historical resource, and CAL FIRE concurs, then work may resume immediately, and no further action is required.
- If the culturally affiliated or consulting tribe(s) determines that the find does represent a tribal cultural resource, as defined in PRC Section 21074(a) though (c) of the CEQA Guidelines, DGS and CAL FIRE shall consult with the tribe on appropriate treatment measures. Work may not resume within the no-work radius until DGS and CAL FIRE, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, the construction supervisor shall ensure reasonable protection measures are taken to

protect the discovery from disturbance (Assembly Bill [AB] 2641) and shall immediately notify DGS, CAL FIRE, and the El Dorado County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC within 24 hours. The NAHC will designate a Native American MLD for the discovery (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with El Dorado County (AB 2641). Work may not resume within the no-work radius until DGS and/or CAL FIRE, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

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ACRONYMS AND ABBREVIATIONS

Term	Definition
°F	Degrees Fahrenheit
AB	Assembly Bill
ADA	Americans with Disabilities Act
ALUCP	Airport Land Use Compatibility Plan
APE	Area of Potential Effects
BCC	Bird of Conservation Concern
BLM	Bureau of Land Management
BMPs	Best Management Practices
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board

Term	Definition
CBC	California Building Code
CCR	California Code of Regulations
CDCR	California Department of Corrections and Rehabilitation
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	Methane
CHL	California Historical Landmark
CHRIS	California Historic Resources Information Center
City	City of Chino
CNDDB	California Natural Diversity Database
CNEL	Community noise equivalent level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CTR	California Toxics Rule
CWA	Clean Water Act
dBA	A-weighted decibel
DGS	Department of General Services
DOC	Department of Conservation
DPM	diesel particulate matter
EDCAQMD	El Dorado County Air Quality Management District
EIR	Environmental Impact Report
EMFAC	CARB EMission FACtor database
EMT	Emergency Medical Technician
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FMB	Foothill Metamorphic Belt
FTA	Federal Transit Administration
GCC	Georgetown Climate Center
GDPUD	Georgetown Divide Public Utilities District
General Plan	Chino General Plan
GHG	Greenhouse Gas
GIS	Geographic Information Systems
gpm	Gallons per minute
hp	Horsepower
HVAC	heating, ventilation, and air condition
IS	Initial Study
kWh	Kilowatt-hour
LEED	Leadership in Energy and Environmental Design
L_{dn}	Community noise development level
L_{eq}	Equivalent noise level
MCAB	Mountain Counties Air Basin

Term	Definition
MLD	Most Likely Descendent
MND	Mitigated Negative Declaration
MRZ	Mineral Resource Zone
MTP	Metropolitan Transportation Plan
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEIC	North Eastern Information Center
NIOSH	National Institute for Occupational Safety and Health
NO_2	Nitrogen dioxide
NO_x	Nitrogen Oxides
NOA	Naturally Occurring Asbestos
NOAA	National Oceanic and Atmospheric Administration
NO_X	Nitric oxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTR	National Toxics Rule
O_3	Ozone
OHP	Office of Historic Preservation
OPR	California Office of Planning and Research
ORMP	Oak Resources Management Plan
PG&E	Pacific Gas & Electric Company
PM	Particulate Matter
PM_{10}	Coarse Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
PPV	Peak Particle Velocity
PRC	Public Resources Code
Proposed Project	Growlersburg Conservation Camp Replacement Project
psi	Pounds Per Square Inch
PVC	Polyvinyl. Chloride
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SO_2	Sulfur Dioxide
SR	State Route
SSC	Species Of Special Concern
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCR	Tribal Cultural Resources

Term	Definition
UAIC	United Auburn Indian Community of Auburn Rancheria
UCMP	University of California Museum of Paleontology
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WBWG	Western Bat Working Group

1.0 BACKGROUND

1.1 Summary

Project Title:	CAL FIRE Growlersburg Conservation Camp Replacement
Lead Agency Name and Address:	California Department of Forestry and Fire Protection (CAL FIRE) 1416 9th Street Sacramento, CA 95814
Contact Person and Phone Number:	Dakota Smith – Senior Environmental Planner/Project Manager California Department of General Services RESD-PMDB Environmental Services, MS 509 707 3rd Street, 4th Floor West Sacramento, CA 95605 (916) 376-1700 dakota.smith@dgs.ca.gov And John Melvin, Assistant Deputy Director Resource Protection and Improvement California Department of Forestry and Fire Protection P.O. Box 944246 Sacramento, CA 94244-2460 John.Melvin@fire.ca.gov
Project Location:	5540 Longview Lane Georgetown, CA 95634 El Dorado County
General Plan Designation:	Public Facilities
Zoning:	Residential Estate – 5 acre

1.2 Introduction

CAL FIRE is the Lead Agency for this Initial Study (IS), which has been prepared to identify and assess potential environmental impacts of the proposed CAL FIRE Growlersburg Conservation Camp Replacement Project. This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Public Resources Code [PRC], Section 21000 et seq.) and State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. A CEQA IS is generally used to determine which CEQA document is appropriate for a project (Negative Declaration, Mitigated Negative Declaration [MND], or Environmental Impact Report [EIR]).

In accordance with CEQA, this IS/MND will be circulated for a 30-day public review and comment period. Written comments on the Draft IS/MND should be submitted to:

Mr. Dakota Smith, Senior Environmental Planner
California Department of General Services, Real Estate Service Division
707 Third Street, 4th Floor
West Sacramento, California 95605

dakota.smith@dgs.ca.gov

2.0 PROJECT DESCRIPTION

2.1 Project Background and Objectives

CAL FIRE proposes to upgrade the existing 80-acre Growlersburg Conservation Camp (Camp) located at 5540 Longview Lane in Georgetown, California. The Facility was built in 1967 and was designed as a three-crew camp. An addition was made to the inmate dorm and the bathroom/showers during the 1980s, and the Camp count was increased from 80 to 120 inmates. Currently the camp has about 130 inmates, which is 10% over the designed population. The facility is an integral part of the strategic resources necessary for conducting the emergency mission of CAL FIRE. Camp crews are used in El Dorado, Amador, Sacramento, and Placer Counties. Crews are utilized on emergency incidents, such as fires, floods and earthquakes. They also perform fire prevention and public service projects in both Amador and El Dorado Counties. Growlersburg is the only conservation camp in El Dorado County. The crews respond to emergencies and perform public service projects for an area covering approximately 1,000 square miles. Camp crews frequently are dispatched as secondary resources or provide cover crews for a multitude of incidents in the Sierra-South Regions, especially in adjacent CAL FIRE units, including those in the Northern Regions. The Camp has been a vital part of the emergency services network since its inception and will continue to perform the same role.

The original buildings do not meet standards of either the current Seismic Safety Code or the Americans with Disabilities Act (ADA) regulations and are not able to be cost efficiently retrofitted to meet current requirements. In several Camp buildings, electrical wiring was inserted through conduit that was attached to the outside of the walls and not inside the walls; current building codes and regulations require wiring to be inside of the walls. Complete replacement or remodeling is required throughout the facility, including re-supporting and re-floating the floors, re-siding the buildings, repairing trusses and load bearing walls, and installation of additional restroom facilities. The utilities must be removed and re-installed to continue to operate. It is not possible for a person with a substantial disability to access most of the buildings without assistance. Ramps were installed to allow access to the administrative and visiting buildings; however, the only restroom at this facility that is wheelchair accessible is a portable outhouse located in the visiting picnic yard. Currently, the Camp does not have accessible doorways (interior and exterior) and hallways are not wide enough to meet current building code. CDCR indicates that inmates with disability will be utilized in the future at camps for in camp functions only.

When the Camp population was increased from 80 to 120 inmates, the dining room and kitchen were not increased in size. The undersized dining room created the need to schedule meals in two groups. When the Camp is used as an incident staging area meal times can be extended to several hours. Larger ovens, stoves, and cooking equipment were installed but do not fit under the existing range hoods, creating smoke and fire hazards. The Camp has been cited for violations on numerous occasions by the Fire Marshal and State Department of Health due to the cooking-area deficiencies. Mitigations, such as a fire watch, have been incorporated to address the violations. The kitchen dry and cold storage areas are also undersized.

The siding on many of the buildings has deteriorated so much that vertebrate and insect pest control has become a major challenge. Due to the age of the facility, maintenance and repair requirements have increased. Because of the lack of space, much of the storage is accommodated by a diverse mix of sheds, military surplus truck bodies, and communication units that have been converted to storage. Many of the buildings have leaking roofs. Re-roofing all buildings is beyond the repair budget.

Utilities were installed at various times and often in a piecemeal fashion. Much of the protective conduit in which the wires for phones lines, the public address system, and some electrical wires were installed has deteriorated to the point that groundwater has seeped into the conduit and compromised the wiring. The phones and the public address system in the outlying buildings frequently do not work. Varying intensities of propane odors can be detected around many of the buildings. Repairing water pipes is a perennial and nearly constant task. The heat, air conditioning and ventilation systems have aged so much that they are non-operational in some buildings. The cost of repair or replacement exceeds repair budgets. Inmate dorms have single pane windows and old doors that don't always seal from the weather.

Bathrooms and showers are outdated and not large enough for the current population. The fire alarms in the dorms are outdated and regularly sound false alarms. There are no fire suppression systems. The captain's barracks has similar problems, with the added lack of male/female separate restrooms or exercise facilities.

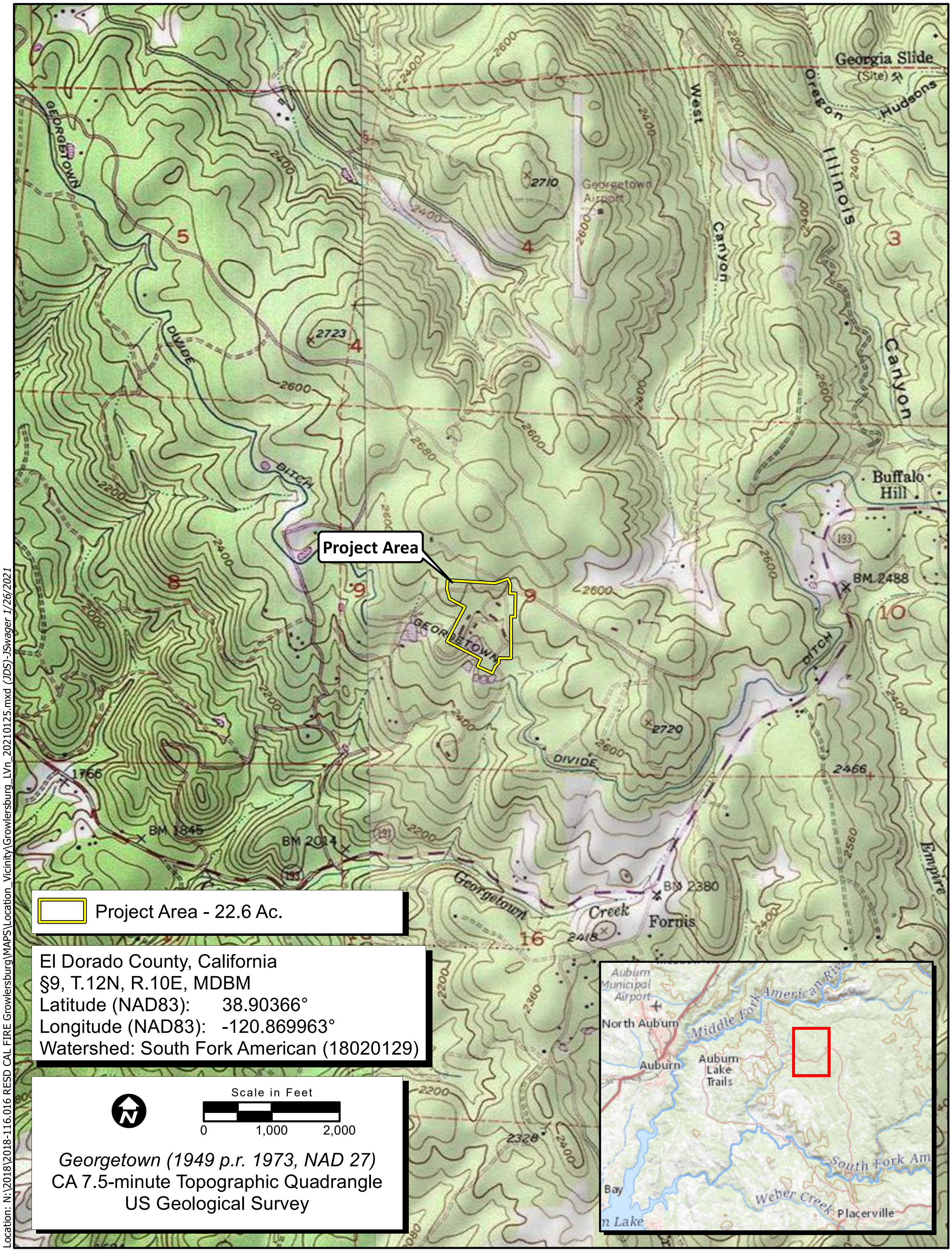
There were several swampy areas within the area prior to initial Camp construction. These areas were drained; however, wet areas reappeared under Camp roads which led to road surface deterioration. Out-sloped roads have been undermined by years of uncontrolled run off. The road system has been patched numerous times and now needs to be realigned and curbing added for proper drainage.

Replacing the Camp facilities and infrastructure is the preferred alternative. It will bring the facilities up to the current building, Health and Safety Codes and ADA regulations. It will increase the size of the facility to accommodate the current population. In doing so, it will significantly reduce repair costs and improve the ability to provide a safe and healthy working environment from which to continue to meet CAL FIRE's mission. In addition to bringing the facility up to current standards and codes, this alternative will modernize the Camp and increase operational efficiencies.

2.2 Project Characteristics

2.2.1 Site Location and Setting

The Camp is located on 80 acres of state-owned property, at 5540 Longview Lane in Georgetown, California. (Figure 2-1). The Camp is located approximately 15 miles north of Placerville and 20 miles east of Auburn. The Project Site consists of forested mountain terrain with graded areas scattered throughout the facility and is currently being used to house an inmate population for emergency incidents, such as fires, floods, and earthquakes.



Map Date: 1/26/2021
Sources: ESRI, USGS, WCE

Figure 2-1. Project Location and Vicinity

2018-116.016 RESD CAL FIRE Growlersburg

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The Project Site is generally bound by Longview Lane to the north with single-family residences beyond; an access road to some wastewater retention ponds (located south of and abutting the Project Area) traversing adjacent to and east of the Project Site with a single-family residence and Reservoir Road beyond; open space wooded forest land to the west with a scattering of single-family residences and various unpaved mountain roads beyond; and a wastewater retention pond to the south with a single-family residence and Longview Lane which for the most part encircles the Project vicinity from Reservoir Road north of the site, meandering through the scattering of single-family residences surrounding the Project site, and returning back to Reservoir Road beyond. The Camp currently consists of the following buildings. (see Figures 2-2 a and b and 2-3)

2.2.1.1 Administration Building

The administration building is located in the northwest portion of the Project Site adjacent to parking lot 5. This building will be demolished and rebuilt as a part of the Project.

2.2.1.2 Garages

The Camp currently has three garages (one 3-bay and two 4-bay). The 3-bay garage is located in the upper northeastern corner of the property and the other two garages are located in the middle of the Project Site. The existing garages will not be impacted by the Proposed Project.

2.2.1.3 Officer's Barracks

The officer barracks are currently located south of the visitors parking lot in the north part of the Project Site. This building will be demolished and replaced as a part of the Project.

2.2.1.4 Conference Building

The conference building is currently located in the northern part of the Project Site, north of the administration building and west of parking lot 5. This building will be demolished as a part of the Project. Conference rooms will be included in the design of the new administration building.

2.2.1.5 Mess Hall/Kitchen

The existing mess hall and kitchen are located in the middle western portion of the Camp and will be demolished and relocated as a part of the Project.

2.2.1.6 Inmates Barracks

The inmate barracks are located in the southeastern portion of the Project Site, just south of the existing mess hall/kitchen and east of the sports court. The barracks was built to accommodate up to 120 inmates but is currently housing 130 inmates. This building will be demolished and relocated as a part of the Project.

View of existing utility buildings east of inmate barracks.

View of existing inmate barracks from mess hall/kitchen.

View of interior open space from central driveway. Inmate garden in the background will be retained.

Visitation area near entrance to be retained.

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Figure 2-2a. Representative Site Photographs

View of existing administration building, looking south from entrance driveway.

From left to right, existing inmate recreation building, mess hall/ kitchen, and administration building.

View of existing sawmill and planer shed looking south from access road.

View of existing sewer storage tank in foreground and sewer treatment tank in the background. Both to be retained.

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Figure 2-2b. Representative Site Photographs

2018-116.016 CAL FIRE Growlersburg

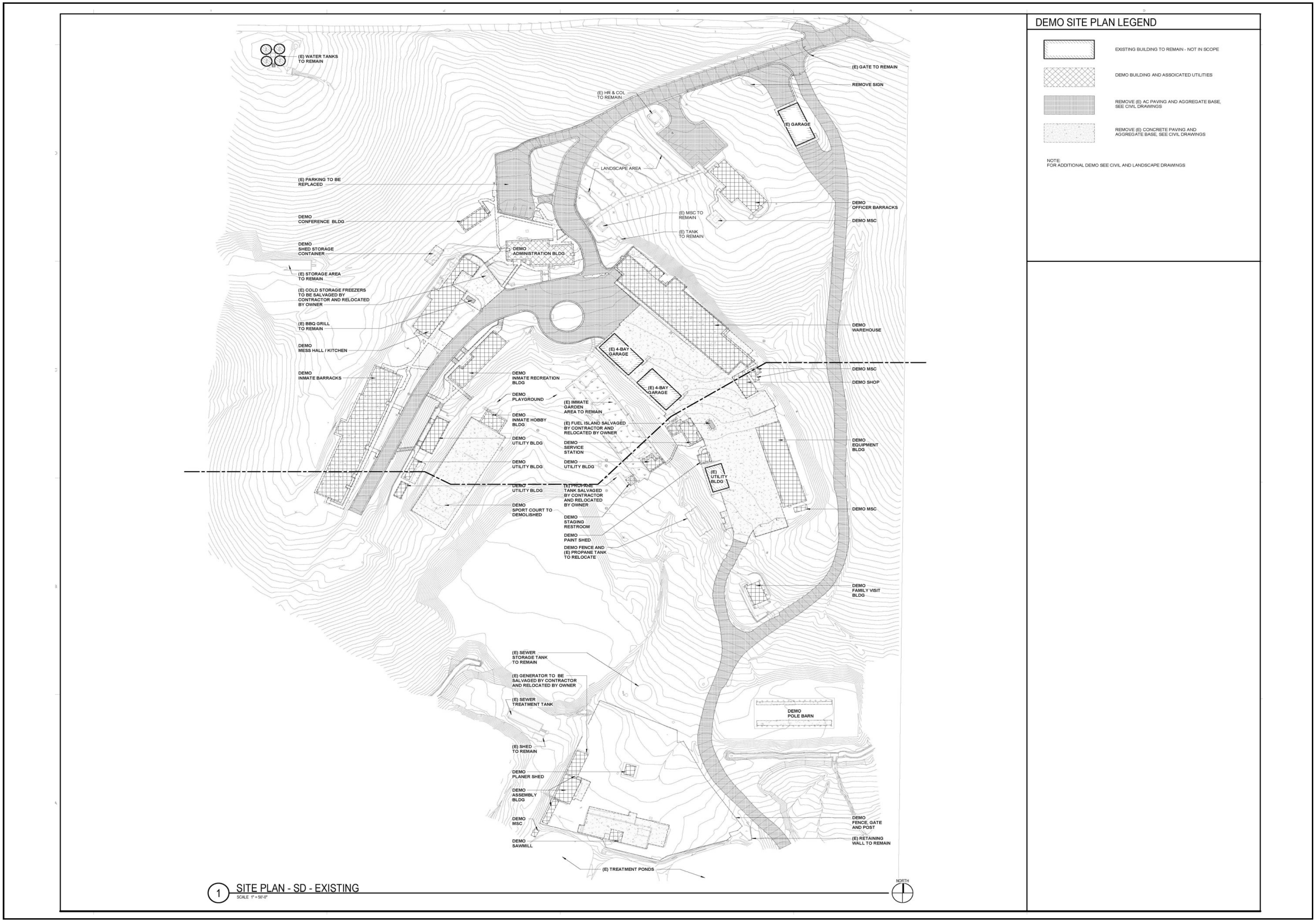

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Figure 2-3. Demolition Plan

2018-116.016 CAL FIRE Growlersburg

2.2.1.7 Inmate Recreation Building

The inmate recreation building is located in the southeastern portion of the Project Site, just east of the existing mess hall/kitchen and north of the sports court. This building will be demolished and relocated as a part of the Project.

2.2.1.8 Hobby Building

The hobby building is adjacent to the sports court and is located in the southeastern portion of the Project Site, just east of the existing mess hall/kitchen and north of the sports court. This building will be demolished and relocated as a part of the Project.

2.2.1.9 Utility Buildings

Three utility buildings are located in the southeastern portion of the Project Site, across from the barracks and south of the inmate recreation building, and one utility building is located in the southern portion of the Project Site, south of the inmate garden area. All four utility buildings will be demolished and relocated as a part of the Project.

2.2.1.10 Inmate Garden

The inmate garden contains a variety of plants. The inmate garden is solely cared for by the inmates. This feature will remain untouched by the Project.

2.2.1.11 Service Station

The service station is located on the southeastern side of the Project Site, just below the 4-bay garage. This building will be demolished and relocated as a part of the Project.

2.2.1.12 Staging Restroom and Paint Shed

Both the staging restroom and the paint shed are located on the southeastern portion of the Project Site near the inmate garden. Both structures will be demolished and replaced as a part of the Proposed Project.

2.2.1.13 Family Visit Building

The family visit building is located at the southeastern portion of the Project Site, north of the existing pole barn and will be demolished and replaced as a part of the Proposed Project.

2.2.1.14 Equipment Building

The equipment building is located at the eastern portion of the Project Site, south of the existing warehouse, shop, and stores facility equipment. This building will be demolished and replaced as a part of the Proposed Project.

2.2.1.15 Shop Building

The Shop building is located in the eastern portion of the Project Site, south of the existing warehouse. This building will be demolished and replaced as a part of the Proposed Project.

2.2.1.16 Warehouse

The warehouse is located near the center of the Project Site, east of the existing administration building and south of the officer's barracks. This building will be demolished and replaced as a part of the Proposed Project.

2.2.1.17 Other Structures

The following structures at the southernmost end of the Project Site will be demolished and replaced as a part of the Proposed Project: Pole barn, generator, planer shed, assembly building and sawmill. The sewer storage tank, sewer treatment tank, shed, treatment ponds and retaining wall will all remain in existing condition and will not be improved as a part of the Proposed Project.

2.3 Project Characteristics

2.3.1 Project Statistics

The Proposed Project includes the replacement/upgrade of the existing Camp and associated facilities/structures (see Table 2-1 and Figure 2-4). New facilities to be constructed would include an administration building, 136-bed inmate dorm building, inmate recreation building, inmate hobby building, 6-bed CDCR/CAL FIRE barracks building, inmate kitchen and mess hall, multipurpose facility, inmate staging area (with restroom and showers), warehouse, carpentry shop, auto welding shop, vehicle storage building, sawmill shed, sawmill building, planer/assembly building (including dry kilns), pole barn, generator/pump/storage/building, covered vehicle rack, and vehicle wash recycling. The Proposed Project would be constructed on property currently controlled by CAL FIRE and an expansion area that is currently part of the Camp property. Construction will be phased so that existing buildings can continue to be used until it is necessary to demolish them.

Existing buildings to be demolished and replaced include the following (square footage of existing buildings is similar to the replacement buildings square footage):

Table 2-1. Proposed New or Replacement Facilities/Structures

Proposed Replacement or New Structures	Square Feet	Replace or New
Building A – **Administration/Multipurpose Building** -The building is designed with two wings. One wing with offices for CAL FIRE staff and the other wing with offices for CDCR staff. The building includes a lobby, conference room, a multipurpose room, and a public restroom for visitors using the program and visitation building.	5,601	Replace
Building B - Inmate Recreation and Hobby Barn Building - This building is designed with pool room, TV rooms, hobby workshop, finish room, and an exercise room for the inmates. The building also includes a barber shop.	7,445	Replace

Table 2-1. Proposed New or Replacement Facilities/Structures

Proposed Replacement or New Structures	Square Feet	Replace or New
Building C – **Mess Hall/Kitchen** - This building is designed with a dining room, a kitchen, freezer, refrigerator, dry storage, and hot storage.	8,824	Replace
Building D - Inmate Barracks - The barracks are designed as a 136-bed dormitory. The building also has a laundry room, restroom areas and shower areas.	14,544	Replace
Building E – **Sawmill Shed -** This building is designed as an equipment storage room.	1,592	Replace
Building F – **Sawmill and Planer Assembly Building** – This building is designed for sawing and planning of lumber. The building includes an office, storage room, equipment room, materials handling room,, tools room and an assembly area.	4,756	Replace
Building G – **Product Storage/Drying Building**- This building is the designed as a storage and drying building. One side of the building is used for storing carpentry products, and the other side is used for drying wood products.	3,174	Replace
Building H – **Carpentry Shop** - This building is designed with an assembly room, hobby room, finish room, tools room and a storage room.	7,233	Replace
Building J1 – Fire Pump/Electrical Equipment Building- This building is designed with a pump house room on one side and an electrical equipment room on the other side.	732	New
Building J2 – **Fuel Storage Shed -** This building is designed for fuel storage.	106	New
Building K – **Staging Restroom -** This building is designed as a multi-use restroom. The building also includes two small all gender restrooms and a laundry room.	1,280	New
Building L – **Auto Shop -** This building is designed as a 4-bay car garage. The building also includes a welding shop, saw shop, part storage, break room, office and an all gender restroom.	7,445	New
Building M – **Warehouse Building -** This building is designed with two warehouse rooms, equipment room training room, office, office lockers and fire equipment room.	7,304	Replaced
Building N - **Office Barracks -** The new building is designed with two wings. Both wings have 6 bedrooms with two beds each wing. 4 bathrooms with one being accessible and one laundry room each wing. The building also includes a Living room, dining room and kitchen.	7,030	replaced
Building O – **3 Bay Garage/Wash Rack -** This building is designed with three wash bays.	2,919	New
Building P – **Program/Visitation Building -** This building is designed for inmate program and visitation. Note restroom needs for this building is accommodated in the administration/Multipurpose building. Which is building A.	884	Replaced
Building Q – **Mobile Kitchen Unit -** This building is designed to store the Mobile Kitchen unit.	1,950	Replaced

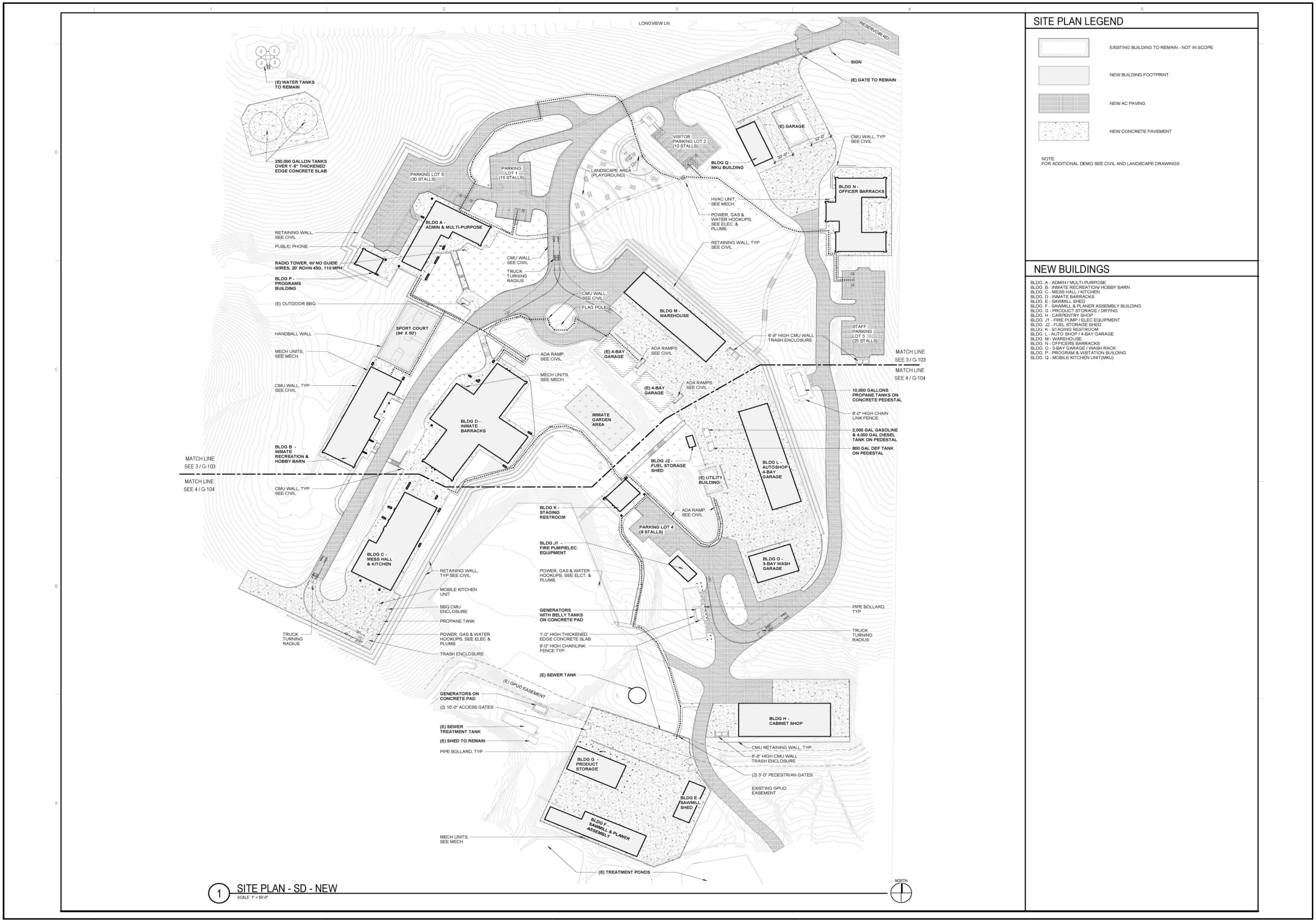

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Figure 2-4. Site Plan

2.3.1.1 Utilities

Domestic Water

Domestic water service is currently provided from an existing 4-inch line connected to the Georgetown Divide Public Utilities District (GDPUD) 6-inch water main located at the north end of the campus off Longview Lane. This existing water service is sufficient to service the campus improvements. All onsite domestic water piping will be replaced with new pipe to meet current health code requirements.

Fire Protection

The existing fire suppression system is currently fed by the existing domestic system. The Proposed Project includes construction of a new fire system that will be fed from the 6-inch main on Longview Lane. A hydrant flow test of the existing main line was completed on February 12, 2021 and yielded a flow rate of 544 gallons per minute (gpm) at 20 pounds per square inch (psi) residual. The Project site requires a flow rate of 1625 gpm for a 3-hour duration. As GDPUD can provide 544 gpm, an additional 1081 gpm is required for three hours. This results in the need for an additional 194,580 gallons of storage. It is recommended that, at a minimum, two (2) 100,000-gallon tanks be installed. The Project will be installing two 250,000 tanks as a part of the proposed project. These tanks will be constructed in the northwest corner of the Project Site adjacent to the existing domestic supply water tanks.

A new onsite fire system will be installed to service the campus. This includes new hydrants and fire department connections to supply the fire sprinklers that are required in each building. The new 250,000-gallon custom designed water tanks will supply water to the fire system.

Sanitary Sewer

Currently, the site is served by a large septic tank located in the field/staging area near the center of the site. Wastewater is conveyed from the septic tank to the sewer treatment tank to the west of the sawmill area. Following treatment, wastewater is released to the existing treatment ponds. There also exists a tank and pump north of the shop area to allow for storage in emergency situations.

It is proposed that all site piping be replaced with new polyvinyl. chloride (PVC) pipe (SDR26 or SDR35). New piping will be placed throughout the campus to service the buildings. The existing septic tank, sewer treatment tank and treatment ponds are proposed to remain as there are no apparent service issues.

Storm Drain

Project implementation will not result in a substantial increase in impervious surfaces on the site. A network of new storm drain piping will connect storm drain inlets and subdrains throughout the Project Area to collect anticipated runoff. Piped drainage will discharge at the south end of the project site where it will flow in a southwesterly direction through natural drainage channels before entering one of multiple existing culverts at the south end of Longview Lane in order to discharge under the road. Downstream of the culverts the runoff continues to flow off site through existing, natural drainage channels in a southerly direction.

2.3.1.2 Other Site Improvements

Other site improvements will include the following items:

- Aboveground fuel vault
- New propane tank
- New radio tower, provided by owner.
- Grading and paving

All buildings will be designed to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver rating requirements; however, registration and certification will not be pursued.

2.4 Operations and Maintenance

Currently, the Growlersburg Conservation Camp is staffed by approximately 14 permanent CAL FIRE employees (1 Division Chief, 10 Fire Captains, 1 Office Tech, 1 Mechanic, 1 Wastewater Plant Operator) , 12 permanent CDCR employees (1 Lieutenant, 2 Sergeants, 9 Officers) , and up to 130 inmates. At this time, no staffing changes are anticipated; however, during large fire incidents, the Camp has the capacity to accommodate six additional crews. During these events, the additional crews are housed in tents located in the grass field below the main structures. The Proposed Project does not intend to address accommodation of additional staff or inmates, but rather address the current undersized conditions of the above listed employees and inmates.

2.5 Project Timing

Project construction is anticipated to start in the off-fire season (spring 2023) and be completed within a year to a year and a half. Construction activities would start when Project funding has been fully secured and all construction contracts have been put in place.

2.6 Construction Details

According to CAL FIRE, Project construction will be continuous and not done in phases. The camp will be closed during construction and inmates will be moved to a different location during construction.

2.7 Regulatory Requirements, Permits, and Approvals

This IS provides the environmental information and analysis and primary CEQA documentation necessary for CAL FIRE to adequately consider the effects of the proposed construction and operation of the Project. CAL FIRE, as lead agency, has the approval authority and responsibility for considering the environmental effects of the Proposed Project.

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

Organization or Issue	Approval or Permit
State Water Resources Control Board (SWRCB)	Construction General Permit (including the development and implementation of a Storm water Pollution Prevention Plan (SWPPP), and best management practices (BMPs)
El Dorado County Certified Unified Program Agency	Permits associated with storage and use of diesel fuel and gasoline, oils and lubricants, and specialty fire suppression liquids, and tanks. Spill Prevention, Control and Countermeasure Plan must be filed and be stamped by a registered civil engineer, since there would be more than 10,000 gallons of petroleum products stored onsite. Hazardous Materials Business Response Plan and Hazardous Waste Inventory
El Dorado County Air Pollution Control District	Air permit (for the generator), Authority to Construct Permit
State Fire Marshal; State Architect	Approval for Americans with Disabilities Act, structural review, and fire suppression and code compliance review.

*The Proposed Project would be located on State-owned property and would remain a State-owned and operated facility. As such, the property would not be within permitting jurisdiction of El Dorado County and permits for planning and building activities are not required.

2.8 Consultation with California Native American Tribe(s)

At the time CAL FIRE was ready to initiate CEQA review, it had received written requests to receive Project notices from one California Native American Tribe in the region. The United Auburn Indian Community of Auburn Rancheria (UAIC) identified itself as being traditionally and culturally affiliated with the lands subject to CAL FIRE jurisdiction for this Project. On April 28, 2021, DGS and CAL FIRE determined that it had a complete Project Description and was ready to begin review under CEQA. On the same day, CAL FIRE sent an initial notification letter to the tribe with Project information and an invitation to consult on the Project. CAL FIRE requested a response to the offer to consult within 30 days of the receipt of the letter. In accordance with Section 21080.3.1(d) of the PRC, a response to the offer to consult was requested by May 28, 2021.

United Auburn Indian Community

On May 11, 2021, Anna Starkey from UAIC emailed CALFIRE in response to the offer to consult and asked if UAIC could be provided the cultural and biological technical studies for the project area to help the tribe inform its decisions on suggested mitigation. On May 12, 2021, the requested reports were provided to UAIC. CALFIRE asked if the tribe was requesting formal consultation under AB52. No response was received. On May 27, 2021, CALFIRE followed up with a phone call and message to the tribe to ask if they were requesting formal consultation on the project. No response was received.

2.8.1 Summary of Non-AB 52 Tribal Outreach

On April 28, 2021, CAL FIRE sent notification letters to tribes on a standing outreach list maintained by CAL FIRE. The letters were sent to the following tribes:

- Washoe Tribe of Nevada and California
- Wilton Rancheria
- Shingle Springs Band of Miwok Indians
- Ione Band of Miwok Indians

Each letter was sent with project information and an invitation to comment on the Project. CAL FIRE requested responses to the offer to consult within 30 days of the receipt of the letter. No responses were received.

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3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED AND DETERMINATION

3.1 Environmental Factors Potentially Affected

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

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

Determination

On the basis of this initial evaluation:

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

DocuSigned by:
John Melvin
6569EF653A04422...

3/14/2022

John Melvin, Assistant Deputy Director
Resource Protection and Improvement
California Department of Forestry and Fire Protection

Date

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4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

4.1.1.1 Regional Setting

Located within the east-central California between the Folsom Lake and California-Nevada State Line (south Lake Tahoe), El Dorado County's broad range of landscapes is characterized by rolling hills covered in annual grasslands and mountainous terrain; agriculture and rangelands; historic mining areas and structures; and a handful of lakes, rivers, and reservoirs, all of which contribute to the distinct visual and scenic resources found within the county (El Dorado County 2021).

Georgetown is the northeastern most town within the California Mother Lode. Situated within the northwestern portion of El Dorado County along the SR 193, the highway also passes though Fords Corner, Greenwood, and Georgetown before turning south to the town of Kelsey. SR 193 terminates at the northern city limits of the historic mining town of Placerville. Georgetown is located south of the rural community of Foresthill, East of Auburn, and north of Placerville. Georgetown is generally characterized by rural residential and forested lands with large pine and cedar trees. Georgetown is at an elevation of approximately 2,654 feet.

4.1.1.2 Visual Setting

The Project Area is made up of developed CDCR/CAL FIRE facilities and the surrounding undeveloped oak woodlands/conifer forest. The developed lands onsite include paved surfaces, roads, living quarters, buildings, landscaping, and a large mown ball field/grassy area. The surrounding lands are composed of oak woodland/conifer forest within private rural residential parcels.

4.1.1.3 State Scenic Highways

The California Scenic Highway Program protects and enhances the scenic beauty of California's highways and adjacent corridors. A highway can be designated as scenic based on how much natural beauty can be seen by users of the highway, the quality of the scenic landscape, and if development impacts the enjoyment of the view (California Department of Transportation [Caltrans] 2021). SR 193 is not a Caltrans-designated scenic highway.

4.1.2 Aesthetics (I) Environmental Checklist and Discussion

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

No impact.

The completed Project will look similar to the existing condition. The Project Site is not within a designated scenic area or located within a scenic vista. Therefore, site development would not have a substantial adverse effect on a scenic vista, and no impact would occur.

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

No impact.

The Project would not substantially damage scenic resources within a state scenic highway viewshed; there are no designated state scenic highways in the vicinity. No impact would occur, and no mitigation is required.

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

No impact.

The Proposed Project will be replacing existing facilities within a similar area/footprint. Currently, the site is being used as a conservation camp with associated facilities and the Project proposes to upgrade the 1967-built camp to accommodate existing inmate numbers and modern needs. The Project would not conflict with applicable zoning or scenic quality regulations as a state project on state-owned land. The new facility will look similar to the existing facility with the addition of some new structures. No impact would occur, and no mitigation is required.

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

No impact.

The Proposed Project would increase the number of buildings on the Project site and add additional outside lighting. However, day and nighttime views would not be adversely affected. As stated above, the Project Area currently operates as a conservation camp. This function would remain the same after the Proposed Project is completed.

4.1.3 Mitigation Measures

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

4.2 Agriculture and Forestry Resources

4.2.1 Environmental Setting

4.2.1.1 El Dorado County

According to the 2017 Censes of Agriculture for El Dorado County, the county produced more than $24 million in agricultural products in 2017, a 20 percent decrease since 2012 (El Dorado County 2017). Of this production, the top grossing sectors were grapes, apples, cultivated Christmas trees, forage (hay), and English walnuts. The top grossing for livestock were cattle, goats, chickens, and sheep. There are no agricultural lands adjacent to the Project site; however, a few parcels have grazing livestock and private crops.

El Dorado County has approximately one million acres of national forest land. The forest's vegetation consists of chaparral, conifer, fir, and subalpine trees; and elevations vary from 1,620 feet to 10,380 feet (El Dorado County 2021). The project site is located approximately 4 miles northwest of the El Dorado National forest.

4.2.2 Regulatory Setting

4.2.2.1 California Important Farmland Inventory System and Farmland Mapping and Monitoring Program

The California Department of Conservation (DOC) sponsors the Farmland Mapping and Monitoring Program. Important farmland maps classify land into one of eight categories, which are defined as follows (DOC 2019):

- **Prime Farmland** – land that has the best combination of features for the production of agricultural crops.

- **Farmland of Statewide Importance** – land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops.
- **Unique Farmland** – land of lesser quality soils used for the production of the state's leading agricultural cash crops.
- **Farmland of Local Importance** – land that is of importance to the local agricultural economy.
- **Grazing Land** – land with existing vegetation that is suitable for grazing.
- **Urban and Built-up Lands** – land occupied by structures with a density of at least one dwelling unit per 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public utility structures, and other developed purposes.
- **Land Committed to Nonagricultural Use** – vacant areas; existing lands that have a permanent commitment to development but have an existing land use of agricultural or grazing lands.
- **Other Lands** – land that does not meet the criteria of the remaining categories.

4.2.2.2 Williamson Act Contracts

The California Land Conservation Act of 1965, commonly known as the Williamson Act, enables local governments to enter into agreements with private landowners to restrict parcels for agricultural or related open space use. In return, landowners receive property tax assessments that are based on farming and open space uses instead of full market value. The Open Space Subvention Act of 1971 has historically provided local governments an annual subvention (subsidy) of forgone property tax revenues from the state; however, these payments have been suspended since 2009 due to revenue shortfalls in recent years. (DOC 2016). El Dorado County has very little Williamson Act land and the Project Site and surrounding area has none.

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

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

No impact.

The DOC manages the Farmland Mapping and Monitoring Program, which identifies and maps significant farmland. Farmland is classified using a system of five categories, including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service (NRCS, DOC 2021). DOC manages an interactive website called the California Important Farmland Finder. This website program identifies the Project Site as urban and built-up land, and, therefore, not agriculturally important land [DOC2021]. The Project will, therefore, have no impact on designated farmlands. No mitigation is required.

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

No impact.

The site is zoned Public Facilities in the El Dorado County Zoning Code. This zoning district was not intended for agricultural uses. The DOC also maintains mapping for Williamson Act contracts by county. As shown on the map for El Dorado County, the site is not subject to a Williamson Act contract. [DOC 2010]. Therefore, the Proposed Project would result in no impact to Williamson Act contract lands or land zoned for agricultural uses. No mitigation is required.

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

No impact.

While the Project does contain conifer trees, the Proposed Project does not involve properties zoned for forest land, timberland or Timberland Production, and, therefore, would not conflict with existing zoning codes. No impact would occur, and no mitigation measures are required.

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

No impact.

The Proposed Project would be replacing existing facilities within the same area and would not convert forest land to non-forest use. There would be no impact, and no mitigation is required.

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

No Impact.

See discussion under item a), the Proposed Project would not result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest**.** No impact would occur and no mitigation measures are required.

4.2.4 Mitigation Measures

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

4.3 Air Quality

This section is based on the analysis and recommendations presented in the Air Quality and Greenhouse Gas Emissions Assessment, prepared for the Proposed Project (ECORP 2021b, *Appendix B*).

4.3.1 Environmental Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, together with the current regulatory structure that applies to the Mountain Counties Air Basin (MCAB), in which the Project site is located, pursuant to the regulatory authority of the El Dorado County Air Quality Management District (EDCAQMD). The EDCAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws.

The California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (USEPA) focus on the following criteria pollutants to determine air quality: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead. In El Dorado County, the majority of criteria pollutant emissions come from mobile sources.

Toxic Air Contaminants (TAC) are separated into categories of carcinogens and noncarcinogens. Carcinogens, such as diesel PM, are considered dangerous at any level of exposure. Noncarcinogens, however, have a minimum threshold for dangerous exposure. Common sources of TAC include, but are not limited to: gas stations, dry cleaners, diesel generators, ships, trains, construction equipment, and motor vehicles.

4.3.1.1 Ambient Air Quality

Ambient air quality in western El Dorado County can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains over 60 monitoring stations throughout California. The Cool-Highway 193 (1400 American River Trail in the town of Cool, CA 95614) seasonal air quality monitoring station, located approximately 7 miles west of the Project Site, is the closest station and monitors ambient concentrations of O_3. Concentrations of PM_{10} were obtained from the Roseville-North Sunrise Boulevard monitoring station (151 North Sunrise Avenue, Roseville, California 95661) located approximately 23.75 miles southwest of the Project Site. The Colfax-City Hall (33 South Main Street Colfax, CA 95713) monitoring station, located 14.15 miles north of the Project Site, monitors ambient concentrations of $PM_{2.5.}$ Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations within the Project Area. Table 4-1 summarizes the published data concerning O_3, PM_{10}, and $PM_{2.5}$ since 2017 from the Cool-Highway 193, Roseville-N Sunrise Boulevard, and Colfax-City Hall monitoring stations for each year that the monitoring data are provided.

Table 4.1. Summary of Ambient Air Quality Data

Pollutant Standards	2017	2018	2019
Ozone (Cool-Highway 193 Air Quality Monitoring Station)			
Max 1-hour concentration (ppm)	0.11	0.12	0.09
Max 8-hour concentration (ppm) (state/federal)	0.09 / 0.08	0.11 / 0.11	0.08 / 0.08
Number of days above state 1-hr standard	4	13	0
Number of days above state/federal 8-hour standard	28 / 28	26 / 26	4 / 3
Coarse Particulate Matter (Roseville-N Sunrise Boulevard Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m^3) (state/federal)	65.80 / 66.00	211.30 / 202.2	63.10 / 61.3
Number of days above state/federal standard	* / 0	* / 2	2 / *
Fine Particulate Matter (Colfax-City Hall Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m^3) (state/federal)	48.80 / *	87.10 / *	20.60 / *
Number of days above federal standard	*	*	*

Source: CARB 2020a
µg/m^3 = micrograms per cubic meter; ppm = parts per million
* = insufficient data available

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10} and $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the El Dorado County portion of the MCAB is included in Table 4-2.

Table 4-2. Attainment Status for the El Dorado County Portion of the Mountain Counties Air Basin

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Unclassified	Nonattainment
CO	Unclassified	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2019

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3 and PM_{10} standards (CARB 2019).

4.3.2 Regulatory Setting

4.3.2.1 El Dorado County Air Quality Management District

In addition to the aforementioned regional Air Quality Attainment Plans prepared by the air districts in the greater Sacramento region, the EDCAQMD has adopted rules and regulations as a means of implementing the air quality plans for the county. Additionally, EDCAQMD has also prepared the *Guide to Air Quality Assessment*, which provides quantitative emission thresholds and established protocols for the analysis of air quality impacts from projects and plans. The *Guide to Air Quality Assessment* outlines quantitative and qualitative significance criteria, methodologies for the estimation of construction and operational emissions, and mitigation measures to reduce significant impacts (EDCAQMD 2002).

The EDCAQMD rules applicable to the Proposed Project include the following:

Rule 205 – Nuisance. This rule prohibits the discharge from any source such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety *of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property.*

Rule 215 – Architectural Coatings. This rule requires manufacturers, distributors, and users of architectural and industrial maintenance coatings to reduce volatile organic compound (VOC) emissions from the use of these coatings by placing limits on the VOC content of various coating categories.

Rule 223 – Fugitive Dust. This rule governs the amount of PM entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. It applies to any construction or construction-related activities, including but not limited to, land clearing, grubbing, scraping, travel on the site, and travel on access roads.

Rule 223-1 – Fugitive Dust – Construction. This rule requires a Fugitive Dust Control Plan be submitted to the Air Pollution Control Officer prior to the start of any construction activity for which a grading permit was issued by the county.

Rule 223-2 – Fugitive Dust – Asbestos Hazard Mitigation. This rule reduces the amount of asbestos PM that may be released as a result of construction-related activities through the use of required actions or mitigation.

Rule 224 – Cutback and Emulsified Asphalt Paving Materials. This rule governs the use of asphalt and limits the VOC content in asphalt.

Rule 610 – Land Development Fees. To establish fees to recover the cost to the District of work related to land development, including but not limited to, fees associated with a Fugitive Dust Plan Review.

In addition, there are other EDCAQMD rules and regulations, not detailed here, which may apply to the Proposed Project but are administrative or descriptive in nature. These include rules associated with fees, enforcement and penalty actions, and variance procedures.

4.3.2.2 El Dorado General Plan

The following are applicable goals and policies from the Public Health, Safety, and Noise Element of the General Plan (County of El Dorado 2019), which was updated in August 2019. The most recent goals and policies are listed below:

Goal 6.7: *Air Quality Maintenance – Strive to achieve and maintain ambient air quality standards established by the USEPA and CARB and minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.*

Policy 6.7.7.1: The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the EDCAQMD *Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act* to analyze potential air quality impacts (e.g., short-term construction, long-term operations, toxic- and odor-related emissions) and to require feasible mitigation requirements for such impacts. The County shall also consider any new information or technology that becomes available prior to periodic updates of the Guide. The County shall encourage actions (e.g., use of light-colored roofs and retention of trees) to help mitigate heat island effects on air quality.

4.3.3 Air Quality (III.) Environmental Checklist and Discussion

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

No impact.

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an Air Quality Attainment Plan to be prepared for areas designated as nonattainment with regard to the NAAQS and CAAQS. Air Quality Attainment Plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The EDCAQMD, in collaboration with all other air districts in the greater Sacramento region, prepared the *2017 Sacramento Regional 2008 8-Hour Ozone Attainment and Further Reasonable Progress Plan* (including 2018 updates) and 2013 *$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area*. These plans collectively address the air basin's nonattainment status of the national O_3 and $PM_{2.5}$ standards by establishing a program of rules and regulations directed at reducing air pollutant emissions and achieving national air quality standards. Pollutant control strategies are based on the latest scientific and technical information and planning assumptions, updated emission inventory methodologies for various source categories, and the latest population growth projections and associated vehicle miles traveled projections for the region. The region's latest population growth forecasts were defined in consultation with local governments and with reference to local general plans. The Project must comply with all applicable rules for construction and operation, and as such would be consistent with the emission-reduction goals of the Attainment Plans.

The Project is proposing the demolition of existing facility buildings and the reconstruction of those buildings to house and support the existing staff and inmate population. The Project thus is consistent with the County General Plan land use designation as there are no proposed changes in land uses and, therefore, would not exceed the population or job growth projections used by the EDCAQMD to develop its Air Quality Attainment Plans. Additionally, as shown in Tables 4-3 and 4-4 (below), both Project construction and Project operations would not generate emissions that would exceed EDCAQMD significance thresholds, which were established to achieve national air quality standards.

Thus, the Project would be consistent with the emission-reduction goals of the EDCAQMD Attainment Plans. No impact would occur.

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

Less than significant impact.

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds (listed below, Table 4.4), the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulatively considerable.

Implementation of the Proposed Project could result in air quality impacts during Project construction and operation. However, these impacts would not exceed significance thresholds and would be less than significant

4.3.3.1 Construction Emissions

Construction-Generated Criteria Air Pollutant Emissions

Construction associated with the Proposed Project would generate short-term emissions of criteria air pollutants, including reactive organic gasses (ROG), CO, NO_X, PM_{10}, and $PM_{2.5}$. The largest amount of ROG, CO, and NO_X emissions would occur during the earthwork phase. PM_{10} and $PM_{2.5}$ emissions would occur from fugitive dust (due to earthwork and excavation) and from construction equipment exhaust. Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the Project Site, emissions produced onsite as the equipment is used, and emissions from trucks transporting materials to and from the site. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact.

All developments are subject to EDCAQMD rules and regulations in effect at the time of construction. Rule 215 (Architectural Coatings) defines the quantities of ROG in paint permitted for use in new construction.

Rule 223 (Fugitive Dust-General) limits man-made fugitive dust to the property line of the construction site. Rule 223-1 requires that a Fugitive Dust Control Plan be prepared and submitted to the EDCAQMD prior to ground-disturbing activities. Rule 224 (Cutback and Emulsified Asphalt) defines the types of cutback and emulsified asphalts permitted for use in the county. Under Rule 610 (Land Development Fees), the EDCAQMD would charge a fee to review the Fugitive Dust Control Plan required by Rule 223-1.

The EDCAQMD has adopted guidelines for determining potential adverse effects to air quality in the region. The EDCAQMD guidelines state that construction activities are considered a potentially significant adverse impact if such activities generate total emissions in excess of EDCAQMD established thresholds. According to the *Guide to Air Quality Assessment*, if identified ROG and NO_X emissions are under the construction emissions threshold of 82 pounds generated per day, and thus considered less than significant, then emissions of CO and PM would also be considered less than significant.

Table 4-3 illustrates the specific construction-related criteria and precursor emissions that would result from construction of the Proposed Project and compares them to the EDCAQMD's significance thresholds.

Table 4-3. Construction-Related Emissions

Construction Year	Maximum Pollutants (Maximum Pounds Per Day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year One Construction (2022)	13.17	44.93	53.48	0.12	19.91	11.48
Year Two Construction (2023)	12.76	40.63	52.11	0.11	5.98	2.78
EDCAQMD Potentially Significant Impact Threshold	82	82	—	—	—	—
Exceed EDCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: California Emissions Estimator Model (CalEEMod) version 2016.3.2. Refer to Attachment A in *Appendix B* for Model Data Outputs.
Notes: Construction emissions taken from the season (summer or winter) with the highest output.

As demonstrated in Table 4-3, Project construction would not result in an exceedance of EDCAQMD thresholds for daily air pollutant emissions during construction activities, and no health effects from Project criteria pollutants would occur. A less than significant impact would occur as a result of construction of the Proposed Project.

Operational Criteria Air Pollutant Emissions

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

The Project proposes the replacement of several existing buildings located on the Growlersburg facility with new and more modern buildings. The Project would include the demolition and replacement of 17 buildings totaling 82,819 square feet. New facilities to be constructed would include an administration/

multipurpose building, inmate recreation and hobby building, mess hall/ kitchen, 136-bed inmate barracks, sawmill shed, sawmill and planer assembly building, storage and drying building, carpentry shop, fire pump and electrical equipment building, fuel storage shed, staging restroom, auto shop, warehouse building, office barracks, 3-bay garage and wash rack building, program/ visitation building, and a mobile kitchen unit storage building. The Proposed Project would also include the installation of two 250,000-gallon storage tanks for a domestic water/fire suppression system, aboveground fuel vault, propane tank, radio tower, grading and paving, underground water/sewage/electrical lines, and various fire, phone, data and public address systems. For the purposes of this analysis, projected operational emissions associated with proposed operations are compared to the existing baseline, which includes the approximately 82,819 square feet of existing facility buildings.

Implementation of the Project would result in long-term operational emissions of criteria air pollutants, such as PM_{10}, $PM_{2.5}$, CO, and SO_2, as well as O_3 precursors, such as ROG and NO_X. Project-generated increases in emissions would be predominantly associated with area sources. Table 4-4 summarizes operational emissions from the Proposed Project.

Table 4-4. Operations-Related Criteria Pollutant and Precursor Emissions

Emission Source	Pollutant (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Baseline Emissions – Pounds per Day (Maximum)						
Area	2.42	0.02	1.90	0.00	0.01	0.01
Energy	0.03	0.35	0.29	0.00	0.02	0.02
Mobile	0.13	0.47	1.63	0.00	0.41	0.11
Total	**2.58**	**0.84**	**3.82**	**0.00**	**0.44**	**0.14**
Project Operational Emissions – Pounds per Day (Maximum)						
Area	2.42	0.02	1.89	0.00	0.01	0.01
Energy	0.03	0.31	0.25	0.00	0.02	0.02
Mobile	0.10	0.34	1.30	0.00	0.41	0.11
Total	**2.55**	**0.67**	**3.44**	**0.00**	**0.44**	**0.14**
EDCAQMD Significance Threshold	80	80	-	-	-	-
Exceed EDCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Emissions Reduction from Baseline – Pounds per Day (Maximum)						
Area	0.00	0.00	-0.01	0.00	0.00	0.00
Energy	0.00	-0.04	-0.04	0.00	0.00	0.00
Mobile	-0.03	-0.13	-0.33	0.00	0.00	0.00
Total	**-0.03**	**-0.17**	**-0.38**	**0.00**	**0.00**	**0.00**
EDCAQMD Significance Threshold	82	82	-	-	-	-
Exceed EDCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.1. See *Appendix B* for emission model outputs.
Notes: Operational emissions taken from the season (summer or winter) with the highest output.

The EDCAQMD has adopted guidelines for determining potential adverse effects to air quality in the region. The EDCAQMD guidelines state that operational activities are considered potentially significant if such activities generate total emissions in excess of EDCAQMD established thresholds. As mentioned above, according to the Guide to Air Quality Assessment, if identified ROG and NO_X emissions are under the operation emissions threshold of 82 pounds generated per day, and thus considered less than significant, then emissions of CO and PM would also be considered less than significant.

Table 4-4 illustrates the maximum daily operations-related criteria and precursor emissions that would result from operation of the Project. As shown in Table 4-4, emissions from the proposed new building operations are lower than the emissions being generated by the existing buildings onsite, which are proposed for replacement. Further, Project emissions would not exceed EDCAQMD significance thresholds for operational air pollutant emissions. A less than significant impact would occur as a result of operations of the Proposed Project.

Would the Project	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

Less than significant impact.

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases, such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Site are a scattering of single-family residences, with the closest located 92 feet east of the Project Site boundary.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Project-generated emissions of diesel particulate matter (DPM), ROG, NO_X, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the MCAB which encompasses the Project Site is designated as a nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3 and PM_{10} standards (CARB 2018). Thus, existing O_3, PM_{10}, and $PM_{2.5}$ levels in the MCAB are at unhealthy levels during certain periods. However, as shown in Table 4-4, the Project would not exceed the EDCAQMD construction emission thresholds, which were established to protect the public health and welfare.

The health effects associated with O_3 are generally linked reduced lung function. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NO_X) in excess of the EDCAQMD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

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

PM_{10} and $PM_{2.5}$ contain microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. PM exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary TAC of concern. The potential cancer risk from the inhalation of DPM outweighs the potential for all other health impacts (i.e., chronic non-cancer risk, short-term acute risk) and health impacts from other TACs. Based on the emission modeling conducted, the maximum onsite construction-related daily emissions of exhaust PM_{10}, considered a surrogate for DPM and includes emissions of exhaust $PM_{2.5}$, would be 1.99 and 1.77 pounds per day in construction years 2022 and 2023, respectively (see Attachment A of *Appendix B*). PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM. As with O_3 and NO_X, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the EDCAQMD's thresholds. Additionally, the Project would be required to comply with Rule 223 and Rule 223-1 for fugitive dust control, as described above, which limit the amount of fugitive dust generated during construction. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

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

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of new air toxics. As mentioned above, the Project proposes the demolition and replacement of several existing buildings; therefore, there are no new stationary sources associated with the operations of the Project, nor would the Project attract additional heavy-duty trucks that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors. The maximum operation-related emissions of exhaust PM_{10}, considered a surrogate for DPM, would be 0.03 pounds per day. The majority of these emissions would be generated offsite. Therefore, the Project would not be a source of TACs and there would be no impact as a result of Project operations. The Project would not have a high carcinogenic or noncarcinogenic risk during operation. As such, the impact would be less than significant.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at traffic intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emission standards have become increasingly more stringent in the last 20 years. In 1993, much of the state was designated nonattainment under the CAAQS and NAAQS for CO. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration across the entire state is now designated as attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

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

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

52 trips are anticipated to be generated per day from the 14 CAL FIRE and 12 CDCR employees, the same amount as current conditions. Thus, the Proposed Project would not generate traffic volumes of more than 100,000 vehicles per day (or 44,000 vehicles per day) at any intersection; there is no likelihood of the Project traffic exceeding CO values.

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

No impact.

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

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

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

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses considered to be associated with odors. As such, no impact would occur.

4.3.4 Mitigation Measures

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

4.4 Biological Resources

This section is based on the analysis and recommendations presented in the *Biological Technical Report* prepared for the Proposed Project (ECORP 2021b, *Appendix C*). ECORP biologist Keith Kwan conducted a general biological resource assessment on March 3, 2021. The purpose of this assessment was to identify potential biological resources constraints (e.g., aquatic resources, special-status species) onsite, identify regulatory requirements for development of the site, and assess potential mitigation needs. During the assessment, the following biological resource information was collected:

- Direct observations of special-status species;
- Animal and plant species directly observed;
- Habitat and vegetation communities; and
- Identification of aquatic resources.

Other field studies conducted during this visit included an aquatic resources delineation and an oak tree/oak woodlands survey. The results of these studies are summarized in the Biological Technical Report (ECORP 2021b, *Appendix C*). The aquatic resources delineation was performed in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) or the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region* (U.S. Army Corps of Engineers [USACE] 2010). The oak tree/oak woodland survey was conducted according to El Dorado County's Oak Resources Technical Report Checklist. The results of the field survey, including site characteristics, plant communities, plants, wildlife, special-status species, and special-status habitats are summarized below and provided in *Appendix C*.

4.4.1 Environmental Setting

4.4.1.1 Existing Site

The Study Area is located at the CDCR/CAL FIRE Growlersburg Conservation Camp, which includes developed areas surrounded by undeveloped forested lands. The Study Area is situated at an elevational range of approximately 2,500 to 2,700 feet above mean sea level, at the interface of the Sierra Nevada Foothills and the High Sierra Nevada Subregions of the Sierra Nevada floristic region of California (Baldwin et al. 2012). The average winter low temperature is 35.1 degrees Fahrenheit (˚F) and the average summer high temperature is 87.8 ˚F in Georgetown, California, approximately 1.5 miles east of the Study Area; the average annual precipitation is approximately 51.53 inches (National Oceanic and Atmospheric Administration [NOAA] 2021).

The Study Area is made up of developed CDCR/CAL FIRE facilities and the surrounding undeveloped oak woodland/conifer forest. The developed lands onsite include paved surfaces, roads, living quarters, buildings, landscaping, and a large mown ball field/grassy area. The surrounding lands include oak woodland/conifer forest within private rural residential parcels.

4.4.1.2 Vegetation Communities

The vegetation communities found outside of the developed portions of the Study Area include Pinus ponderosa-Calocedrus decurrens Forest and Woodland Alliance (mixed conifer forest and woodland) and Quercus kelloggii Forest and Woodland Alliance (California black oak forest and woodland) (Figure 2. Vegetation Communities in *Appendix C*). Both of these communities have global and state rarity rankings of G4 and S4, respectively, and are not considered sensitive natural communities according to California Department of Fish and Wildlife (CDFW). Rarity ranks of 1-3 are considered sensitive.

The mixed conifer forest and woodland vegetation community onsite is composed of codominant trees, including incense cedar (Calocedrus decurrens) and ponderosa pine (Pinus ponderosa), with scattered Douglas fir (Pseudotsuga menziesii), and California black oak (Quercus kelloggii). The herbaceous understory comprises a variety of grasses and forbs. Herbaceous plants found in the understory included wild oats (Avena sp.), hedgehog dog-tail grass (Cynosurus echinatus), vetch (Vicia sp.), goose grass (Galium aparine), and hedge parsley (Torilis arvensis). Scattered woody plants found in the understory of the mixed conifer forest include California coffeeberry (Frangula californica), scotch broom (Cytisus scoparius) and manzanita (Arctostaphylos species). The understory is open and periodically cleared to reduce fuel.

The California black oak forest and woodland vegetation community onsite is an open canopy woodland dominated by California black oak. The understory plant species in the community include many found in the mixed conifer forest and woodland community. A complete list of plant species observed on the Project Site and 500-foot buffer is included in Attachment B of *Appendix C*.

4.4.1.3 Wildlife Observations and Movement/Corridors/Nursery Sites

The developed portions of the Study Area are subject to constant levels of disturbance from the presence of people and vehicle traffic throughout the year. The Study Area is not an Important Biological Corridor as described by the county on a map dated March 10, 2020 (El Dorado County 2020).

During the site visit in March 2021, a variety of bird species were observed in the Study Area. While the CDCR/CalFire facilities are highly disturbed throughout the year, some nesting bird activity is expected in trees and shrubs onsite and in close proximity to the Study Area. A list of wildlife species observed during the field survey is included in Attachment C of *Appendix C*.

4.4.1.4 Plants

Twenty-eight special-status plants have been identified as potentially occurring within the Study Area based on the initial literature review and database queries (Table 1 of *Appendix C).* However, it was determined that 14 of the plant species were absent due to a lack of suitable habitat onsite or the plant is not known to occur at the elevation of the Study Area. No further discussion of these species is included in this section. A brief description of the remaining 14 special-status plants that have the potential to occur within the Study Area is presented below.

Sanborn's Onion *(*Allium sanbornii *var.* sanbornii*),* True's manzanita *(*Arctostaphylos mewukka *ssp.* truei*)*, and *Fresno ceanothus (Ceanothus fresnensis)* are not listed pursuant to either the federal or California Endangered Species Acts (ESA) but are designated as California Rare Plant Rank (CRPR) 4.2 species; there are no documented California Natural Diversity Database (CNDDB) occurrences within five miles of the Study Area (CDFW 2021). However, the mixed conifer forest and California black oak woodland within the Study Area provide a suitable habitat for these species.

Tripod buckwheat (*Eriogonum tripodum*), Humboldt lily (*Lilium humboldtii* ssp. *humboldtii*), and Streambank spring beauty (*Claytonia parviflora* ssp. *grandiflora*) are not listed pursuant to either the federal or California ESA but are designated as CRPR 4.2 species. There are no documented CNDDB occurrences of these species within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provide a marginally suitable habitat for this species.

Red Hills soaproot *(Chlorogalum grandiflorum)* is not listed pursuant to either the federal or California ESA but is designated as a CRPR 1B.2 plant. This species is a bulbiferous perennial herb that typically occurs on serpentinite, gabbroic, and other soils in chaparral, cismontane woodland, and lower montane coniferous forest communities (California Native Plant Society [CNPS] 2021). There are eight documented CNDDB occurrences of Red Hills soaproot within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provide a suitable habitat for this species.

Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*) is not listed pursuant to either the federal or California ESA but is designated as a CRPR 4.2 plant. This species is an herbaceous annual that occurs in chaparral, cismontane woodlands, and lower montane coniferous forest often along roadcuts (CNPS 2021). There is one documented CNDDB occurrence of Brandegee's clarkia within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provide a marginally suitable habitat for this species.

Sierra clarkia (*Clarkia virgata*) is not listed pursuant to either the federal or California ESA but is designated as a CRPR 4.3 plant. This species is an herbaceous annual that occurs in cismontane woodlands and lower montane coniferous forest (CNPS 2021). There are no documented CNDDB occurrences of Sierra clarkia within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provide a marginally suitable habitat for this species.

Parry's horkelia (*Horkelia parryi*) and Stebbins' phacelia (*Phacelia stebbinsii*) are not listed pursuant to either the federal or California ESA but are designated as a CRPR 1B.2 species. There are no documented CNDDB occurrences of these species within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provide a suitable habitat for this species.

Sierra blue grass (*Poa sierrae*) is not listed pursuant to either the federal or California ESA but is designated as a CRPR 1B.3 species. This species is a rhizomatous herbaceous perennial that occurs in lower montane coniferous forest openings (CNPS 2021). There are no documented CNDDB occurrences of Sierra blue grass within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provide a suitable habitat for this species.

Oval-leaved viburnum (*Viburnum ellipticum*) is not listed pursuant to either the federal or California ESA but is designated as a CRPR 2B.3 species. This species is a perennial deciduous shrub that occurs in chaparral, cismontane woodland, and lower montane coniferous forest communities. There are no documented CNDDB occurrences of oval-leaved viburnum within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provide a suitable habitat for this species.

Butte County fritillary (*Fritillaria eastwoodiae*) is not listed pursuant to either the federal or California ESA but is designated as a CRPR 3.2 species. This species is an herbaceous bulbiferous perennial that occurs in chaparral, cismontane woodland, and lower montane coniferous forest, and is occasionally found on serpentinite soils (CNPS 2021). There is one documented CNDDB occurrence of Butte County fritillary within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provide a suitable habitat for this species.

4.4.1.5 Invertebrates

No invertebrates were identified as potentially occurring within the Study Area based on the initial literature review and database queries, and it was determined that there is no suitable habitat onsite for any special-status invertebrates. As such, based on the current Project limits, there are no anticipated impacts to, or recommended actions, pertaining to special-status invertebrates.

4.4.1.6 Fish

One special-status fish, the Delta smelt (*Hypomesus transpacificus*) (Table 1 in *Appendix C*), was identified as having potential to occur in the Study Area based on the literature review. However, upon further analysis and after the site visit, this special-status species was considered absent because there is no suitable habitat in the Study Area. As such, based on the current Project limits, there are no anticipated impacts to, or recommended actions, pertaining to special-status fish.

4.4.1.7 Amphibians

Two special-status amphibians were identified as having potential to occur in the Study Area based on the literature review (Table 1 in *Appendix C*). However, upon further analysis and after the site visit, all of these special-status species were considered absent from the site due to the lack of a suitable aquatic habitat. As such, based on the current Project limits, there are no anticipated impacts to, or recommended actions, pertaining to special-status amphibians.

4.4.1.8 Reptiles

Two special-status reptiles were identified as having the potential to occur in the Study Area based on the literature review (Table 1 in *Appendix C*). However, upon further analysis and after the site visit, both of these special-status species were considered absent from the site due to the lack of a suitable habitat. As such, based on the current Project limits, there are no anticipated impacts to, or recommended actions, pertaining to special-status reptiles

4.4.1.9 Birds

Eight special-status bird species were identified as having the potential to occur within the Study Area based on the literature review. However, upon further analysis and after the site visit, three of these species were considered absent from the site due to the lack of a suitable habitat and/or the Study Area is outside the known breeding range of the species. No further discussion of these species is provided in this analysis. A brief description of the remaining five special-status birds that have the potential to occur within the Study Area is presented below.

The sharp-shinned hawk (*Accipiter striatus*) is not listed pursuant to either the California or federal ESA. However, it is a CDFW "watch list" species and currently tracked in the CNDDB. Their breeding range in California is poorly known but breeding or summering sharp-shinned hawks have occurred throughout the state (Bildstein et al. 2020; Small 1994). There are no CNDDB occurrences of sharp-shinned hawk reported within five miles of the Study Area (CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Sharp-shinned hawk have potential to nest onsite.

The Cooper's hawk (*Accipiter cooperii*) is not listed pursuant to either the California or federal ESAs. However, it is a CDFW "watch list" species and is currently tracked in the CNDDB. Typical nesting and foraging habitats include riparian woodland, dense oak woodland, and other woodlands near water. There are no CNDDB occurrences of Cooper's hawk reported within five miles of the Study Area (CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Cooper's hawk has potential to nest onsite.

The Nuttall's woodpecker (*Dryobates nuttallii*) is not listed and protected under either California or federal ESA but is considered a U.S. Fish and Wildlife Service (USFWS) bird of conservation concern (BCC). They are resident from Siskiyou County south to Baja California. There are no CNDDB occurrences of Nuttall's woodpecker reported within five miles of the Study Area (CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Nuttall's woodpecker has potential to nest onsite.

The olive-sided flycatcher (*Contopus cooperi*) is not listed pursuant to either the California or federal ESA but is a CDFW species of special concern (SSC) and a USFWS BCC. In the western U.S., olive-sided flycatchers breed from Washington south throughout California, except the Central Valley, eastern deserts, and mountains of southern California (Small 1994). There are no CNDDB occurrences of olive-sided flycatcher reported within five miles of the Study Area (CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Olive-sided flycatcher has potential to nest onsite.

Oak titmouse (Baeolophus inornatus) is not listed and protected under either California or federal ESA but is considered a USFWS BCC. Oak titmouse breeding range includes southwestern Oregon south through California's Coast, Transverse, and Peninsular ranges, western foothills of the Sierra Nevada, into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley (Cicero et al. 2020). There are no CNDDB occurrences of oak titmouse reported within five miles of the Study Area

(CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Oak titmouse has potential to nest onsite.

4.4.1.10 Mammals

Two special-status mammal species were identified as having the potential to occur within the Study Area based on the literature review (Table 1 in *Appendix C*). After the site visit, it was determined that both have potential to occur onsite. A brief description of these two special-status bat species is presented below.

The pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*) are not listed pursuant to either the California or federal ESA; however, these species are considered an SSC by CDFW. There are no CNDDB occurrences of these species reported within five miles of the Study Area (CDFW 2021). The trees in the ponderosa pine forest and California black oak and some structures within and surrounding the Survey Area could support suitable roosting habitat for both species.

4.4.1.11 Sensitive Natural Communities

No sensitive natural communities were identified as having the potential to occur within the vicinity of the Study Area based on the literature review (CDFW 2021). During the field assessment, no sensitive natural communities were found onsite. No further discussion of sensitive natural communities is provided within this assessment.

4.4.2 Biological Resources (IV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?	☐	☒	☐	☐

Less than significant impact with mitigation incorporated.

No special-status species are known to occur within the Study Area; however, special-status plant and animal surveys have not been conducted. The Study Area includes potential habitat for special-status species within the impact area. Potential effects to special-status species are summarized in the following sections by taxonomic group or species.

4.4.2.1 Special-Status Plants

There is no potential habitat for federal- or State-listed plant species in the Study Area, but there is potential or low potential for 14 non-listed special-status plant species to occur. Project development would permanently remove or alter a minimal amount of marginally suitable or suitable potential habitat for special-status plants and, in the unlikely chance that special-status plant populations occur onsite, they may be directly or indirectly impacted by development.

Implementation of recommendations **PLANT-1** and **PLANT-2** described in Section 4.4.3 (below) would avoid, minimize, and/or compensate for potential effects to special-status plants. With implementation of these measures, the Project is not expected to significantly impact special-status plants.

4.4.2.2 Special-Status and Other Protected Birds

There is potential nesting habitat for five non-listed special-status bird species and a variety of other birds that are protected under the federal Migratory Bird Treaty Act and the California Fish and Game Code. Project development would permanently remove or alter a minimal amount of nesting and foraging habitat in the development area, and Project construction would generate a temporary disturbance that would likely displace foraging birds from the Study Area during construction. Permanent removal or alteration of a minimal amount of habitat and displacement of foraging birds during construction is not expected to significantly impact special-status birds.

4.4.2.3 Special-Status Mammals

Two special-status bats have potential to occur in the Study Area. Removal of trees and structures may directly impact roosting habitat. Project development would permanently remove a minimal amount of potential roosting and foraging habitat in the development area, and Project construction would generate a temporary disturbance during the day that would likely displace day-roosting bats from the Study Area. Permanent removal of a minimal amount of potential roosting habitat and displacement of day-roosting bats during construction is not expected to significantly impact special-status bats. Implementation of mitigation measure **BAT-1** described in Section 4.4.3 (below) would avoid and/or minimize potential effects to special-status bats.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?	☐	☐	☐	☒

No Impact.

The Study Area supports mixed conifer forest and oak woodland within the Proposed Project footprint. Both of these vegetation communities are not considered a sensitive natural community according to CDFW, and there is no riparian habitat onsite. Therefore, the Project will not impact riparian habitat or sensitive natural communities.

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

No Impact.

Based on the aquatic resources delineation, the only aquatic resource present within the Study Area is the Georgetown Divide Ditch, which is managed by the GDPUD. This ditch is not likely to be jurisdictional based on current definitions of Waters of the U.S. and Waters of the State. Further, there are no Proposed Project impacts to this ditch. There are no other aquatic resources onsite. Therefore, the Project is not expected to impact aquatic resources, including waters of the U.S. and State.

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

Less Than Significant Impact.

The Study Area provides limited migratory opportunities for terrestrial wildlife because of existing developed CAL FIRE and CDCR operations onsite. Project construction is likely to temporarily disturb and displace some wildlife from the Study Area. Some wildlife, such as birds or nocturnal species, are likely to continue to use the habitats opportunistically for the duration of construction. Once construction is complete, wildlife movements are expected to resume but will likely be more limited through the developed areas of the Study Area. The Project is not expected to substantially interfere with wildlife movement. There are no documented nursery sites and no nursey sites were observed within the Study Area during the site reconnaissance. Therefore, the Project is not expected to impact wildlife nursery sites.

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

Less than Significant Impact with Mitigation.

ECORP conducted a field survey on March 3, 2021, with ECORP arborist Krissy Walker-Berry biologists Gabrielle Attisani and Keith Kwan. A total of 74 trees with stems or driplines within the Study Area and 2.941 acres of Oak Woodland were inventoried. Additionally, four Heritage Trees were inventoried: one California black oak and three canyon live oak (tag numbers 6, 26, 65, and 72). Impacts are estimated to include 32 oak trees, which total 620.5 inches (Appendix C, Attachment A), and 2.584 acres of woodland. Implementation of recommendations **OAK-1** described in Section 4.4.3 (below) would avoid and/or minimize potential effects to California black oak, canyon Live oak trees and oak woodland.

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

No impact.

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

4.4.3 Mitigation Measures

PLANT-1: **Floristic Plant Surveys.** Perform floristic plant surveys where Project implementation will impact California black oak woodlands or mixed conifer forest and woodland communities according to USFWS, CDFW, and CNPS protocols prior to construction. A qualified biologist should conduct the surveys and time them according to the appropriate phenological stage for identifying target species. Known reference populations should be visited and/or local herbaria records should be reviewed, if available, prior to surveys to confirm the phenological stage of the target species. If no special-status plants are found within the Project impact areas, no further measures pertaining to special-status plants are necessary.

PLANT-2: **Special-Status Plants.** If special-status plants are identified within 25-feet of the Project impact area, implement the following measures

- If avoidance of special-status plants is feasible, establish and clearly demarcate avoidance zones for special-status plant occurrences prior to construction. Avoidance zones should include the extent of the special-status plants, plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and should be maintained until the completion of construction. A qualified biologist/biological monitor should be present if work must occur within the avoidance buffer to ensure special-status plants are not impacted by the work.
- If avoidance of special-status plants is not feasible, mitigate for significant impacts to special-status plants. Mitigation measures shall be developed in consultation with CDFW. Mitigation measures may include permanent preservation of onsite or offsite

habitat for special-status plants and/or translocation of plants or seeds from impacted areas to unaffected habitats.

BIRD-1: **Pre- Construction Nesting Bird Surveys.** If construction is to occur during the nesting season (generally February 1 - August 31), conduct a pre-construction nesting bird survey of all suitable nesting habitat within 14 days of the commencement of construction. The survey shall be conducted within a 500-foot radius of Project impact limits for raptors and within a 100-foot radius for other nesting birds. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established by a qualified biologist in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival. Pre-construction nesting surveys are not required for construction activity outside the nesting season.

BAT-1: **Pre- Construction Bat Surveys.** Within 14 days prior to Project activities that may impact bat roosting habitat (e.g., removal of manmade structures or trees), a qualified biologist will survey for all suitable roosting habitat within the Project impact limits. If suitable roosting habitat is not identified, no further measures are necessary. If suitable roosting habitat is identified, a qualified biologist will conduct an evening bat emergence survey that may include acoustic monitoring to determine whether or not bats are present. If roosting bats are determined to be present within the Project impact limits, consultation with CDFW prior to initiation of construction activities and/or preparation of a Bat Management Plan outlining avoidance and minimization measures specific to the roost(s) potentially affected may be required.

OAK-1: **Donate Funds to Mother Lode Land Trust.** The proposed project will pay the Mother Lode Land Trust (nonprofit organization) a total of $89,600 for the purchase of property containing Oak Woodland for permanent conservation and stewardship.

4.5 Cultural Resources

This section is based on the analysis, findings, and recommendations presented in the *Cultural Resources Inventory and Architectural History Evaluation Report, CAL FIRE Growlersburg Conservation Camp Replacement Project* prepared for the Proposed Project This report is confidential and will not be included in the appendix.

4.5.1 Regulatory Framework

4.5.1.1 Federal

National Historic Preservation Act

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

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

a) are associated with events that have made a significant contribution to the broad patterns of history;

b) are associated with the lives of persons significant in our past;

c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

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

4.5.1.2 State

California Register of Historical Resources

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

California Environmental Quality Act

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

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

- A resource listed in or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC § 5024.1).

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

- A resource included in a local register of historical resources, as defined in PRC § 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC § 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant

- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1), including the following:

    a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    b) Is associated with the lives of persons important in our past;
    c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
    d) Has yielded, or may be likely to yield, information important in prehistory or history.

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

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

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC § 5024.1 and CCR, Title 14, § 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

CEQA also requires lead agencies to determine if a Proposed Project would have a significant effect on unique archaeological resources. If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section 21083.2 regarding unique archaeological resources. A unique archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria.

> "Unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
> - Has a special and particular quality such as being the oldest of its type or the best available example of its type.
> - Is directly associated with a scientifically recognized important prehistoric or historic event or person."

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

If the project would result in a significant impact to a historical resource or unique archaeological resource, treatment options under PRC § 21083.2 include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a unique archaeological resource).

In addition to the mitigation provisions pertaining to accidental discovery of human remains, the CEQA Guidelines also require that a lead agency make provisions for the accidental discovery of historical or archaeological resources, generally. Pursuant to § 15064.5(f), these provisions should include "an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place."

4.5.2 Environmental Setting

ECORP Consulting, Inc. prepared a cultural resources inventory and evaluation report (ECORP 2021c, CONFIDENTIAL *Appendix D*) for the Proposed Project to determine if cultural resources were present in or adjacent to the Project Area and assess the sensitivity of the Project Area for undiscovered or buried cultural resources. The cultural context of the Project Area, including regional and local prehistory, ethnography, and regional and Project Area histories can be found in the confidential report. The confidential report can be made available to qualified individuals on a need to know basis by contacting the Department of General Services (DGS) Real Estate Services Division.

The analysis of cultural resources was based on a records and literature search conducted at the North Eastern Information Center (NEIC) of the California Historic Resources Information Center (CHRIS) at California State University, Sacramento, on January 27,2021, a literature review, and a field survey on February 17, 2021. The literature search included the results of previous surveys within a 0.5-mile radius of the Proposed Project location.

In addition to the record search, ECORP contacted the California NAHC on January 26, 2021, to request a search of the Sacred Lands File for the Project Area.

4.5.2.1 Records, Map, and Aerial Photo Search Results

The records search results indicated that 14 previous cultural resources investigations have been conducted within 0.5 mile of the property, covering approximately 30 percent of the total area surrounding the property within the record search radius.

ECORP conducted a records search for historical resources using various sources. Of the 14 previous cultural studies conducted within the 0.5-mile search radius, three studies crossed a portion of the Project Area, covering approximately 90 percent of the property. The records search also determined that eight previously recorded resources are located within 0.5 mile of the Project Area. These consist of five pre-contact resources and three historic-period resources. Pre-contact resources consist of two artifact scatters, two bedrock milling features, and one isolated find. Of these eight previously recorded resources, a portion of one resource, a historic-era ditch, was recorded within the Project Area.

The National Register Information System (NPS 2020) failed to reveal any eligible or listed properties within the Project Area.

ECORP reviewed resources listed as *California Historical Landmarks* (Office of Historic Preservation [OHP] 1996) and by the OHP (2020) on January 26, 2021. As a result, it was determined that no California Historical Landmarks are located within the Project Area.

A search of historic General Land Office land patent records from the Bureau of Land Management's (BLM's) patent information database did not reveal the names of any previous owners of the property (BLM 2021).

A review of historical aerial photographs and maps of the Project Area provided information on the past land uses of the property and potential for buried archaeological sites. Prior to a 1946 aerial, the area was undeveloped, and the 1946 aerial shows unpaved roads and pockets of cleared vegetation in the Project Area. The 1949 U.S. Geological Survey (USGS) 15-minute and 7.5-minute "Georgetown, California" quadrangle maps depict the Georgetown Divide Ditch running through the central-southern portion of the Project Area. The 1972 photorevised version of the 7.5-minute "Georgetown, California" quadrangle map depicts the addition of the Growlersburg Conservation Camp and the various roads running to and within the Camp. Aerial photography since 1993 shows the property in its current state.

4.5.2.2 Field Survey Results

ECORP surveyed the Project Area for cultural resources on February 17, 2021, using transects spaced 15 meters apart. The entire Area of Potential Effects (APE) surrounding the existing structures was walked, including an open grass field located in the center of the facility and undeveloped areas within the facility parcel. Overall, the majority of the surface area within the APE has been disturbed by fire station facilities, pavement, or landscaped areas of ornamental shrubs, trees, and grasses. Less than 15 percent of the APE contained exposed soil, which appeared to have been modified during construction and maintenance of the facility and landscaping or was blanketed in forest duff or wood chips. As a result of the archaeological survey, no indications of pre-contact resources were observed.

4.5.2.3 Cultural Resources

During the cultural resources field survey of the Project Area, the Growlersburg Conservation Camp, built in 1967, was identified and recorded as a cultural resource. A previously unrecorded segment of the Georgetown Divide Ditch was identified, and the site record was updated.

4.5.2.4 Previously Recorded Resources

The Georgetown Divide Ditch (CA-ELD-959H) was constructed in the 1850s in order to transport water from Loon Lake to Georgetown for mining and public use; it stretches for approximately 75 miles in its entirety (Napton and Greathouse 2007). The ditch was part of a system of several ditches built in the 1850s that were eventually all subsumed under the Georgetown Divide Ditch, which was constructed by a Dr. William H. Stone. The segment of the Georgetown Divide Ditch passing through the current Project Area measures six feet wide at the top, three feet wide at the base, and two feet deep. The segment through the Project Area is approximately 500 feet long, but only about 40 feet of this ditch segment is visible. The majority of ditch was rerouted to run beneath a road and the sawmill yard south of the recreation area.

4.5.2.5 Newly Recorded Resources

The Camp (GCC-001) was originally called Valley View, built in 1967 and designed for a three member crew. An addition was made to the inmate dorm and the bathroom and showers during the 1980s and the Camp count was increased from 80 to 120 inmates. One of 43 fire camps for California state inmates, this facility hosts five crews, who work on local community service projects such as backcountry rescue, vegetation management, and public parks landscaping in addition to emergency fire response work. The facility consists of 20 buildings and structures: the main office, CDCR/CAL FIRE officer quarters, two long utility and skill shop buildings, two auto service buildings, weight/exercise rooms, two truck bays, an A-frame cabin, an open air pole shed, sawmill with ancillary buildings, inmate dorms, kitchen, hobby and recreation rooms, TV room, conference room trailer, and a water storage feature. On the western side of the property are the CDCR buildings and on the eastern side are the CAL FIRE buildings. None of the Camp buildings have previously been recorded or evaluated for the NRHP or CRHR; at the time of Thornton's large-scale 1994 evaluation of CAL FIRE facilities, the Camp was less than 50 years old. All the buildings are functionally related and none of them stand as individual resources independent of their historical or current use, so they are treated here as one collective resource. All buildings except for the A-frame cabin used as the family visiting center are vernacular and utilitarian in construction.

The family visiting center is an A-frame cabin front-gabled wood cabin with a steep-pitched metal roof and will not be demolished as part of the Project.

Evaluation/Conclusions

The criteria for listing as a California Historical Landmark (CHL) require the facility to possess exceptional individuality among other similar buildings, with stronger historical associations, styles, or identities, which exceeds the level of significance required for inclusion in the CRHR. Typically, resources that are designated CHLs are also eligible for the CRHR, but not all CRHR-eligible resources are qualified to be CHLs.

The Camp facility was not the first or most significant building constructed by CAL FIRE. It is not a prototype of CAL FIRE facility architecture, nor is it an outstanding "high-style" example of the artistic movement of CAL FIRE development in California. It has not individually made a profound influence on the history of California nor is it the most significant CAL FIRE facility building in El Dorado County or California. Overall, it fails to meet the CHL criteria or possess state-wide historical significance and is considered not eligible for designation as a CHL.

The Georgetown Divide Ditch (CA-ELD-959H) was not the first or most significant ditch of its kind in California. It is not a prototype of water conveyance system architecture, nor is it an outstanding "high-style" example any artistic movement or development in California. It has not individually made a profound influence on the history of California nor is it the most significant water conveyance ditch in El Dorado County or California. Overall, the Georgetown Divide Ditch facility fails to meet the CHL criteria or possess state-wide historical significance and is considered not eligible for designation as a CHL.

4.5.3 Cultural Resources (V) Environmental Checklist and Discussion

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

Less than Significant with Mitigation Incorporated.

One historic-period cultural resource (GCC-001) was identified within the Project Area as a result of this study. The previously recorded irrigation ditch (CA-ELD-959H) was relocated. Resources GCC-001 and the portion of CA-ELD-959H within the Project Area were evaluated using CRHR eligibility criteria and were evaluated as not eligible for listing in the CRHR under any criteria.

Therefore, the Proposed Project would not impact any known historical resources as defined by CEQA; however, archaeological resources could be unearthed during construction and, if found to be significant, they would be considered historical resources. With the implementation of mitigation measure **CUL-1**, the Project would have a less than significant impact on historical resources.

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

Less than Significant with Mitigation Incorporated.

The records search at the NEIC revealed five previously recorded pre-contact resources within a 0.5-mile radius of the Project. These consist of four sites and one isolated find. Two of the four were lithic sites and were located approximately 0.45 mile away from the Project. The other two pre-contact sites are bedrock mortars and located 0.15 mile away from the Project. There are no archaeological sites or unique archaeological resources known to exist within the Project Area.

The underlaying sediments within the Project Area consist of Mesozoic volcanic and metavolcanic rocks that are overlain by rocky loamy soils. The loamy soils are composed of two inches of humus from decomposing leaf litter. Despite the age of the geomorphology in the area, there is potential for alluvium to have been deposited along nearby Georgetown Creek. Given the likelihood of pre-contact archaeological sites located along perennial waterways, the potential exists for buried pre-contact archaeological sites in the Project Area. Implementation of Mitigation Measure **CUL-1** would reduce this potential impact to less than significant.

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

Less than significant with mitigation incorporated.

No dedicated cemeteries are located within or near the Project Site and no human remains have been reported in the Project vicinity. Therefore, the Proposed Project has low potential to disturb human remains. The potential exists, however, for previously unknown remains to be unearthed during construction. The impact on such resources would be less than significant with the implementation of Mitigation Measure **CUL-1**.

4.5.4 Mitigation Measures

CUL-1: Unanticipated Cultural Resources Discoveries. Implement Measures to Protect Unanticipated Discoveries of Cultural Resources or Human Remains.

- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify CAL FIRE. The agency shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be an Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Work may not resume within the no-work radius until the Lead Agency, through consultation as appropriate, determines that the site either: 1) is not an Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to its satisfaction.
- If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Bernardino County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American MLD for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC may mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate CHRIS; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the Lead Agency, through consultation as appropriate, determines that the treatment measures have been completed to its satisfaction.

4.6 Energy

4.6.1 Environmental Setting

4.6.1.1 Introduction

Energy consumption is analyzed in this Initial Study due to the potential direct and indirect environmental impacts associated with the Project. Such impacts include the depletion of nonrenewable resources (oil, natural gas, coal, etc.) and emissions of pollutants during the construction and operational phases. The impact analysis focuses on the four sources of energy that are relevant to the proposed Project: electricity, natural gas, the equipment-fuel necessary for Project construction, and the automotive fuel necessary for Project operations.

4.6.1.2 Electricity/Natural Gas Services

The Pacific Gas and Electric Company (PG&E) provides electricity and natural gas to the Project Area. PG&E generates or buys electricity from hydroelectric, nuclear, renewable, natural gas, and coal facilities. PG&E provides natural gas and electricity to most of the northern two-thirds of California, from Bakersfield and Barstow to near the Oregon, Nevada, and Arizona State Line. It provides 5.2 million people with electricity and natural gas across 70,000 square miles.

4.6.1.3 Energy Consumption

Electricity use is measured in kilowatt-hours (kWh), and natural gas use is measured in therms. Vehicle fuel use is typically measured in gallons (e.g., gasoline, diesel fuel, or aviation fuel), although energy use for electric vehicles is measured in kWh.

The electricity consumption associated with all uses in El Dorado County from 2015 to 2019 is shown in Table 4-5. As indicated, the demand has decreased since 2015.

Table 4-5. Electricity Consumption in El Dorado County 2015-2019

Year	Electricity Consumption (kWh)
2019	1,227,890,625
2018	1,214,446,675
2017	1,255,275,737
2016	1,210,248,427
2015	1,170,078,156

Source: California Energy Commission (CEC) 2019

The natural gas consumption associated with all uses in El Dorado County from 2015 to 2019 is shown in Table 4-6. As indicated, the demand has increased since 2015.

Table 4-6. Natural Gas Consumption in El Dorado County 2015-2019

Year	Natural Gas Consumption (therms)
2019	34,914,401
2018	32,279,956
2017	33,828,560
2016	30,683,139
2015	28,892,134

Source: CEC 2019

Automotive fuel consumption in El Dorado County from 2016 to 2020 is shown in Table 4-7. As shown, automotive fuel consumption has decreased since 2016.

Table 4-7. Automotive Fuel Consumption in El Dorado County 2016–2020

Year	Automotive Fuel Consumption (gallons)
2020	77,668,952
2019	79,264,776
2018	81,547,012
2017	83,293,537
2016	83,395,183

Source: CARB 2017

4.6.2 Energy (VI) Environmental Checklist and Discussion

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

Less than significant impact.

The impact analysis focuses on the four sources of energy that are relevant to the Proposed Project: electricity, natural gas, the equipment-fuel necessary for Project construction, and the automotive fuel necessary for Project operations. Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use Project. For the purpose of this analysis, the amount of electricity and natural gas estimated to be consumed by the Project is quantified and compared to that consumed by all land uses in El Dorado County. Similarly, the amount of fuel necessary for Project construction and operations is calculated and compared to that consumed in El Dorado County.

The analysis of electricity gas usage is based on CalEEMod conducted by ECORP (see Air Quality and Greenhouse Gas Emissions Assessment, *Appendix B*), which quantifies energy use for Project operations. The amount of operational automotive fuel use was estimated using the CARB's Emission Factors database (EMFAC 2017) computer program, which provides projections for typical daily fuel usage in El Dorado County. The amount of total construction-related fuel use was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. Energy consumption associated with the Proposed Project is summarized in Table 4-8.

Table 4-8. Proposed Project Energy and Fuel Consumption

Energy Type	Annual Energy Consumption	Percentage Increase Countywide
Electricity Consumption[1]	501,374 kWh	0.040 percent
Natural Gas Consumption[1]	11,892 therms	0.030 percent
Fuel Consumption		
Project Construction 2022[2]	94,089 gallons	0.120 percent
Project Construction 2023[2]	88,571 gallons	0.110 percent
Project Operations[3]	5,241 gallons	0.000 percent

Source: [1]ECORP Consulting, Inc. (see *Appendix A*); [2]Climate Registry 2016; [3]EMFAC2017 (CARB 2017).
Notes: The Project increases in electricity and natural gas consumption are compared with all of uses in El Dorado County in 2019, the latest data available. The Project increases in automotive fuel consumption are compared with the countywide fuel consumption in 2020, the most recent full year of data.

As shown in Table 4-8, the increase in electricity usage as a result of the Project would constitute 501,374 kWh, or a 0.040 percent increase in the typical annual electricity consumption attributable to all uses in El Dorado County. Additionally, Project increases in natural gas usage across the county would be negligible, 11,892 therms, which equates to a 0.030 percent increase in use. The Project would adhere to all federal, state, and local requirements for energy efficiency, including the Title 24 standards. The Project would be required to comply with Title 24 building energy efficiency standards, which establish minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the Title 24 standards significantly reduces energy usage. Furthermore, the Project is proposing the demolition of existing facility buildings, and the reconstruction of those buildings. The electricity usage for Project operations is assumed to be similar if not less than what is currently consumed given the implementation of Title 24 standards for the new buildings.

As further indicated in Table 4-8, the Project' is estimated to consume 94,089 and 88,571 gallons of fuel, during 2022 and 2023 construction, respectively. This would increase the annual gasoline fuel use in the El Dorado County by 0.120 percent and 0.110 percent, respectively. As such, Project construction would have a nominal effect on local and regional energy supplies. No unusual Project characteristics would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or the state. Construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would conserve the use of their supplies to minimize costs and maximize profit. Additionally, construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency combined with state regulations limiting engine idling times and require recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

As indicated in Table 4-8, the Project is estimated to consume 5,241 gallons of automotive fuel per year; however, the number of employees is not anticipated to increase as a result of Project operations The Project would not result in an increase in operational fuel consumption. Fuel consumption associated with the Project would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region.

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

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

Less than significant impact.

The Project would be designed in a manner that is consistent with relevant energy conservation plans designed to encourage development that results in the efficient use of energy resources. The Project is proposing the demolition of existing facility buildings, and the reconstruction of those buildings to house and support the existing staff and inmate population at the Growlersburg Conservation Camp. The new buildings would be built to Title 24 standards and thus, would be more energy efficient than what is currently in use. The Project would not conflict with or obstruct any local or state plans for renewable energy or energy efficiency.

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

4.6.3 Mitigation Measures

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

4.7 Geology and Soils

This section of the checklist addresses the potential impact of the Proposed Project on geological and soil resources within the Project Area. The information and analysis presented here is based, in part, on the report entitled *Geologic Hazards Evaluation and Geotechnical Investigation Report Proposed Cal Fire Growlersburg Conservation Camp* (Kleinfelder 2008) and the *Limited Geotechnical Engineering Report* (Wallace-Kuhl & Associates 2020). These reports are included with this Initial Study as *Appendix F*.

4.7.1 Environmental Setting

4.7.1.1 Geomorphic Setting

The site and surrounding area are generally characterized by gently rolling topography. The Project Site sits at the base of the Sierra Nevada Mountains. This part of the Sierran foothills is characterized by Late Paleozoic and Mesozoic age metavolcanic and metasedimentary rocks. These rocks originated as ocean sediments and volcanic flow rocks on oceanic terrains west of the current Sierra Nevada mountain range. Beginning in the early Mesozoic, these ocean deposits moved west and were both subducted beneath and accreted onto the North American continent. The resulting plate collision and accretion produced the long north to northwest trending sequences of metavolcanic and metasedimentary rocks that form most of the Sierra Foothills. Further broad tilting of the Sierra Nevada over the last 10 million years, resulting from uplift along the eastern Sierra Nevada escarpment where much steeper slopes prevail, has further folded and deformed these rocks. During the Oligocene and Paleocene Epochs, large river systems flowing west from the higher elevations of the ancient Sierra Nevada mountain range carved valleys in which alluvial deposits were formed. These alluvial deposits and portions of the metamorphic rocks were subsequently covered by volcanic flow rocks, including lava flows, ash flows, and volcanic mud flows during the Miocene epoch. Because these volcanic deposits were more resistant to erosion than the surrounding rocks, they remained as the relocated rivers eroded the surrounding rock. This resulted in inverted topography with the former valley bottoms, which had been filled in by sediment and volcanic flow rocks, now forming the ridges. Where the younger volcanic flow rocks and ancient river deposits are absent the metamorphic rocks predominate.

4.7.1.2 Soils

According to the NRCS Web Soil Survey website (2021a), there are three soil types in the Project Area:

Boomer gravelly loam and Boomer very rocky loam are very similar, well-drained soil types found on foothills and in mountainous terrain. Slopes range from 3 to 30 percent. These soils are both derived from metavolcanic and igneous parent rock. Their upper two inches are humus composed of arboreal litter; below this, it is gravelly to sandy gravelly loam, and clay content increases up to 47 inches. Boomer soils from 47 to 74 inches are mainly weathered greenstone. These two types of Boomer soils vary only in the content of parent rock they carry.

Auburn soils are very rocky silt loam found on 2 to 30 percent hill and mountain backslopes. They are derived from weathered amphibolite schist, moderately deep, and well drained. The upper 14 inches are a silt loam that transitions to weathered amphibolite schist from 14 to 24 inches.

4.7.1.3 Naturally Occurring Asbestos

Asbestos is a term given to a group of naturally occurring, fibrous minerals that possess unique flexible yet heat resistant and high tensile strength properties. Naturally occurring asbestos (NOA) minerals, formerly a valuable mineral resource in California and often associated with serpentinite (the state rock), were mined in the western Sierra Foothills and commonly used as a heat insulator material and in automotive brake linings until the mid-1970s when asbestos was discovered to be harmful to humans if inhaled over long exposure periods. NOA minerals remain present in certain natural environments and, when disturbed or agitated severely by activities such as excavation and earthwork, quarrying, and/or use as unpaved road surfacing, the asbestos fibers can become airborne and a potential hazard.

Minerals known to contain asbestos-quality (i.e., asbestiform) fibers include ultramafic minerals of the amphibole group and phyllosilicates (Deer 1975). Fibrous varieties of the amphibole group include the more common tremolite and actinolite, and amosite (asbestiform grunerite), crocidolite (asbestiform riebeckite), and anthophyllite whose occurrence is exceedingly rare in the United States (Bates 1969). Serpentine is a phyllosilicate that occurs in the platy variety (antigorite) and chrysotile is the asbestiform variety (Hurlbut 1971) and is the most common variety of commercially-mined asbestos minerals. Rock types associated with these minerals are accordingly known as amphibolites (i.e., more than>10 percent amphibole minerals) or serpentinites (i.e. >10 percent serpentine minerals), respectively. Both of these rock types are ultramafic rocks.

The locations of ultramafic rocks most likely to contain NOA have been generally mapped across the state by the California Division of Mines and Geology (CDMG, Churchill and Hill 2000) and, in the vicinity of the Project Site, are generally restricted to the metavolcanic, gabbroic, and ultramafic rocks of the Foothill Metamorphic Belt (FMB). NOA are also known to occur as a result of hydrothermal alteration along pre-existing fractures, such as fault splays comprising the Foothills Fault System which is present within the FMB. Although not unilaterally true for the entire FMB, NOA tend to occur within 1,500 feet of significant fault zones and/or within these three geologic rock types.

According to Jennings (1994), the Project Site is located in the FMB and, according to Kohler (1983), the site is located atop metavolcanic rocks of the Calaveras Complex. Rocks likely to contain NOA have been mapped throughout El Dorado County by the CDMG (Churchill 2000). Additionally, areas more likely to contain NOA, and faults within the western slope area of El Dorado County, have been mapped in a Geographic Information Systems (GIS) database by the El Dorado County Environmental Management Department (EDCEMD) (Bruyn 2005). Based on the information presented on the published CDMG and EDCEMD maps, the site location is not considered to be within an area likely to contain NOA and, as shown on Plate 7 in *Appendix F*, the nearest mapped locations considered likely to contain NOA are approximately 2.1 miles (3.4 km) to the west-southwest and 2.5 miles (4.0 km) to the east of the site, respectively. The nearest mapped fault splay considered as a potential source for NOA is located approximately 1.1 miles (1.8 km) to the southwest of the site (Plate 7 in *Appendix* F).

Unpaved walkways at the site were found to be surfaced with crushed rock materials that appear to be derived from serpentine rock. Additionally, several stockpiles of rock fragments and crushed imported aggregate/rock materials containing serpentine rock were also observed at the site during the investigation. As noted above, serpentine rock commonly contains asbestiform minerals.

4.7.2 Regulatory Setting

Laws and regulations relevant to the Proposed Project are presented below.

4.7.2.1 State

Alquist-Priolo Earthquake Fault Zoning Act (PRC, §§ 2621-2630).

This Act requires that "sufficiently active" and "well-defined" earthquake fault zones be delineated by the State Geologist and prohibits locating structures for human occupancy on active and potentially active surface faults. (Note that since only those potentially active faults that have a relatively high potential for ground rupture are identified as fault zones; not all potentially active faults are zoned under the Alquist-Priolo Earthquake Fault Zone, as designated by the State of California.)

California Building Code (CCR, Title 23)

The California Building Code (CBC) provides a minimum standard for building design, which is based on the Uniform Building Code, but is modified for conditions unique to California. The CBC is selectively adopted by local jurisdictions, based on local conditions. The CBC contains requirements pertaining to multiple activities, including excavation, site demolition, foundations and retaining walls, grading activities including drainage and erosion control, and construction of pipelines alongside existing structures.

4.7.3 Geology and Soils (VII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐

Less than significant impact.

i) and ii)

The Project Site is located in a region with many active, potentially active, and inactive faults. Faults within the region are shown on Plate 4 in *Appendix F* based upon fault locations and data indicated by the Fault Activity Map of California (Jennings 1994; 2005), the Digital Database of Quaternary and Younger Faults from the Fault Activity Map of California (Bryant 2005), and the Quaternary Fault and Fold Database of the United States (USGS 2006) compiled in a GIS database. Several of the major or active fault zones in the region shown on Plate 4 of *Appendix F* are listed below (from west to east) along with their noted age of recent movement (Bryant 2005; Jennings 1994, 2005; USGS 2006):

- Green Valley-Concord Fault (Historic) -82± miles (132± km) southwest;
- Coast Ranges-Sierran Block Boundary Zone (Great Valley Fault Zone, Segments 3 and 4) (Historic) -66± miles (106± km) west;
- Mohawk Valley Fault Zone (Quaternary) -50± miles (82± km) northeast;
- Tahoe-Sierra Frontal Fault Zone (Quaternary-Holocene) -40± miles (64± km) east;
- East Tahoe Fault (Quaternary) -44± miles (71 ± km) east;
- Genoa Fault/Carson Range Fault (Holocene-Historic) -55± miles (89± km) east.

In addition to the major and active faults listed above and shown on Plate 4 of *Appendix F*, the San Andreas Fault Zone and the Hayward-Rodgers Creek Fault Zone are regional active major fault zones with historic seismicity and ground rupture, and are located approximately 121 miles (195 km) and 102 miles (164 km) to the west of the site, respectively.

The Project Site is located in the area of the Foothills Fault System. Although there remains considerable controversy among geologists regarding the activity of the Foothill Fault System, historic seismicity (primarily low to moderate intensity events) aligns well with portions of this system and suggests that the system of faults is at least capable of generating small earthquakes at depth. Ground rupture occurred during the 1975 Oroville earthquake along the Cleveland Hill Fault within the northern extent of the Foothill Fault System. Several smaller and/or less active faults and fault zones comprising the greater Foothill Fault System are located in the vicinity of the site and include the Spenceville Fault, the Dewitt Fault, the Bear Mountain Fault Zone (including the Rescue, Maidu East, Youngs Creek, Waters Peak, and Bowie Flat Faults), and the Melones Fault Zone (including the Gillis Hill and the Foresthill-Melones Faults). The closest fault to the Project Site mapped as showing movement as recent as the Quaternary period is the Rescue Fault, located about 10 miles (16 km) southwest (Jennings, 1994, 2005).

An aerial photograph of the Project Area was reviewed to evaluate photo-interpretations of potential geologic and fault conditions. This aerial photograph review did not identify features that might represent geologic and/or fault conditions within or trending towards the Proposed Project Area and is considered less then significant. No mitigation is required.

iii)

Soil liquefaction is a condition where saturated, granular soils undergo a substantial loss of strength and deformation due to pore pressure increase resulting from cyclic stress application induced by earthquakes. In the process, the soil acquires mobility sufficient to permit both horizontal and vertical movements if the soil mass is not confined. Soils most susceptible to liquefaction are saturated, loose, clean, uniformly graded, and fine grained sand deposits. If liquefaction occurs, foundations resting on or within the liquefiable layer may undergo settlements. This will result in reduction of foundation stiffness and capacities.

According to the Geotechnical Report, the site area is not prone to intense seismic activity likely to produce ground shaking severe enough to induce liquefaction. The provision of dense and compacted engineered fill as recommended herein should provide materials supporting structures that are not considered to be susceptible to liquefaction. The native clayey subgrade soils and underlying bedrock at the site are not considered to be susceptible to liquefaction, and saturated conditions at shallow depths were neither encountered during field exploration nor are anticipated to develop within the soils and bedrock underlying the site. Therefore, liquefaction should not be a concern for this site, and the potential for liquefaction at the site is considered to be minimal.

Lateral spreading is a potential hazard commonly associated with liquefaction where extensional ground cracking and settlement occur as a response to lateral migration of subsurface liquefiable material. These phenomena typically occur adjacent to free faces such as slopes and creek channels. While there are slopes in the project area, based on the soil and bedrock conditions encountered during our investigation and minimal potential for liquefaction at the site, the potential for lateral spreading to take place at the site is considered minimal and is considered less than significant. No mitigation is required.

iv)

The Project Site is located within the rolling and hilly topography of the Sierra Nevada foothills. The site topography is similar, with slight to moderate inclines typically no steeper than about 6(h): 1 (v) for natural slopes. Existing cut and fill slopes at the site are typically less than about 10 to 15 feet in height, with maximum slope inclinations on the order of 1(h):1(v). The site is not located within an area designated as a landslide hazard zone by the California Geological Survey. No evidence of current or past landslides or slope instability was observed on the site or in the immediate Project Site vicinity.

The Project design indicates that new and steepened cut sections and new building pad fill embankments will be retained by walls up to 17 feet in height. Other new and existing cut and fill slopes up to 10 feet in height will not be retained by walls. Recommendations for design and construction of temporary and permanent cut and fill slopes and retaining walls are provided in Section 5 of the Geotechnical Report. (*Appendix F*)

Based on the Geotechnical Report by Kleinfelder, the potential for landsliding or slope instability at the site is considered to be low provided that slopes and retaining walls are designed and constructed in accordance with the recommendations provided herein. Therefore, landslides or slope instabilities at the Project Site are considered less than significant. No mitigation is required.

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

Less than Significant Impact.

BMPs are included as part of the SWPPP prepared for the Proposed Project and would be implemented to manage erosion and the loss of topsoil during construction-related activities (see Section 4.9 *Hydrology and Water Quality*). Soil erosion impacts would be reduced to a less than significant impact. No mitigation is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐

Less than Significant Impact.

The current soil and ground conditions are not likely to be susceptible to liquefaction and coseismic compaction. Construction would be consistent with the Project's Geotechnical report, which includes recommendations designed to address and mitigate site-specific soil conditions. Therefore, related impacts would be less than significant, and no mitigation is required.

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

Less than Significant Impact.

The native near-surface soils encountered in test borings and test pits at the site consist of typically cohesive clayey and silty residual soils with low to high plasticity and varying amounts of sand and gravel. These near-surface soils typically extend to depths of between about 3 and 20 feet below existing site grades and overlie weathered rock at depth. Results of laboratory testing to determine the fines content (percent passing No. 200 sieve) and Atterberg Limits of samples obtained from the near-surface clayey and silty soils indicate fines contents ranging from 56 to 87 percent, Liquid Limits ranging from 33 to 68, and Plasticity Indices ranging from 11 to 44. These results are generally indicative of soils with low to moderate expansion potential. The results of Expansion Index testing performed on re-molded samples of the near-surface soils obtained from Test Pits TP-2 and TP-19 indicate low to high expansion potentials, with Expansion Index values of 49 and 101 determined for samples re-molded to dry densities of approximately 84 and 96 pounds per cubic foot, respectively. Based on the results of the laboratory testing, the near-surface site soils would be considered expansive in accordance with Section 1802.3.2 of the CBC (2007). In addition, the NRCS (1998) has mapped soils at the site characterized as having low to moderate shrink swell potential and a maximum plasticity index of 25. The underlying weathered bedrock materials appear to have low expansion potential Wallace-Kuhl 2020).

Construction would be consistent with the Project’s Geotechnical Report, which includes recommendations designed to address and mitigate site-specific soil conditions. Therefore, related impacts would be less than significant, and no mitigation is required.

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

No impact.

The Project Site currently has a sewer treatment system in place and would not be redesigned. The Proposed Project will not require the use of new septic tanks or alternative wastewater disposal systems. Therefore, there would be no impact and no mitigation is required.

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

Less than Significant Impact with Mitigation Incorporated.

A records search was run through the University of California Museum of Paleontology (UCMP) (Appendix E). The UCMP records search focused on the Calaveras Complex. Schweickert et al. (1977) noted that there have a been a few fossil occurrences reported where its metasedimentary limestones contain foraminifera (fusulinids, neoschwagerinids, textulariids), solitary horn (rugose) corals, and crinoid stems. The UCMP database records 13 Calaveras fossil localities, three in El Dorado County, six in Amador County, one in each of Butte, Placer, and Plumas counties, and another in an unidentified county, but only two corals are identified. None of these 13 UCMP localities is within five miles of the Growlersburg site. In addition, the database lists 43 vertebrate and 13 plant localities in the Mehrten Formation, all located more than 40 miles from the Project Site. No significant paleontological resources have been found in the Calaveras Complex, which is the only unit that will be impacted by Project-related construction activities. Although paleontological resources are not anticipated, unknow resources could be present withing the Project Site. Therefore, implementation of Mitigation Measure **GEO-1** would reduce this impact to a less than significant level.

4.7.4 Mitigation Measures

GEO-1: Discovery of Unknown Paleontological Resources.

- If any paleontological resources (i.e., fossils) are found during Project construction, construction shall be halted immediately in the subject area and the area shall be isolated using orange or yellow fencing until CAL FIRE is notified and the area is cleared for future work. A qualified paleontologist shall be retained to evaluate the find and recommend appropriate treatment of the inadvertently discovered paleontological resources. In addition, in the event of an inadvertent find, sediment samples should be collected and processed to determine the small fossil potential on the Project Site. If CAL FIRE resumes work in a location where paleontological remains have been discovered and cleared, CAL FIRE will have a paleontologist onsite to observe any continuing excavation to confirm that no additional paleontological resources are in the area. Any fossil materials uncovered during mitigation activities should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

4.8 Greenhouse Gas Emissions

This section is based on the findings of the Air Quality and Greenhouse Gas Emissions Assessment which includes modeling for greenhouse gas emissions (Appendix B).

4.8.1 Environmental Setting

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

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

The local air quality agency regulating the MCAB is the EDCAQMD. The regional air pollution control officer for the basin. Appendix G of the CEQA Guidelines thresholds for GHGs do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines § 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards" (14 CCR 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change" (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

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

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)). As a note, the CEQA Guidelines were amended in response to Senate Bill (SB) 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

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

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The EDCAQMD has not adopted a GHG significance threshold. Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). Thus, in the absence of any GHG emissions significance thresholds, the projected emissions are compared to the GHG thresholds recommended by the Sacramento Metropolitan Air Quality Management District (SMAQMD), the air pollution control officer for Sacramento County. The SMAQMD thresholds of 1,100 metric tons of CO_2e annually for construction and 1,100 metric tons of CO_2e annually during operations are considered appropriate for the purposes of this analysis due to the proximities of Sacramento and El Dorado counties and the similarities between both geomorphic and urban patterns of the two neighboring air district jurisdictions. Therefore, the threshold used to analyze the Project is specific to the analysis herein and the lead agency retains the ability to develop and/or use different thresholds of significance for other projects in its capacity as lead agency and recognizing the need for the individual threshold to be tailored and specific to individual projects.

In *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright-line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, PRC section 21003(f) provides it is a policy of the state that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts" (Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.).

4.8.2 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

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

Less than Significant Impact.

4.8.2.1 Construction

Construction-related activities that would generate GHGs include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 4-9 illustrates the specific construction-generated GHG emissions that would result from construction of the Project.

Table 4-9. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/Year)
Construction 2022	**955**
Construction 2023	**900**
Potentially Significant Impact Threshold	*1,100*
Exceed Significance Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment B in *Appendix B* for Model Data Outputs.
Notes: Building construction, paving, and architectural coating assumed to occur simultaneously.

As shown in Table 3-14-9, Project construction would not result in the exceedance of 1,100 metric tons of CO_2e during any year of construction. Once construction is complete, the generation of these GHG emissions would cease. A less than significant impact would occur.

Furthermore, GHG emissions generated by the construction sector have been declining in recent years. For instance, construction equipment engine efficiency has continued to improve year after year. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower (hp) and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the USEPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the USEPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 hp and increasingly more stringent Tier 2 and Tier 3 standards for all equipment with phase-in schedules from 2000 to 2008. As a result, all off-road, diesel-fueled construction equipment manufactured in 2006 or later has been built to Tier 3 standards. Tier 3 engine standards reduce precursor and subset GHG emissions such as nitrogen oxide by as much as 60 percent. On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which were phased in from 2008 to 2015. The Tier 4 standards require that emissions of nitrogen oxide be further reduced by about 90 percent. All off-road, diesel-fueled construction equipment manufactured in 2015 or later will be built to Tier 4 standards.

In addition, the CEC recently released the 2019 Building Energy Efficiency Standards contained in the CCR, Title 24, Part 6 (also known as the California Energy Code). The 2019 updates to the Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions, and alterations to existing buildings. For instance, effective January 1, 2017, owners/builders of construction projects have been required to divert (recycle) 65 percent of construction waste materials generated during the project construction phase. This requirement greatly reduces the generation of GHG emissions by reducing decomposition at landfills, which is a source of CH_4, and reducing demand for natural resources.

4.8.2.2 Operations

Operation of the Project would result in a decrease in the amount of GHG emissions currently emitted under current operations. Table 3-24-10 summarizes all the direct and indirect annual GHG emissions associated with the Project in comparison to existing conditions.

Table 4-10. Operational-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Proposed Project Operational Emissions	
Area	0
Energy	223
Mobile	74
Waste	103
Water	37
Total Baseline Emissions	**437**
Area	0
Energy	210
Mobile	66
Waste	103
Water	29
Total Project Emissions	**408**
Emissions Reduction from Baseline	
Area	0
Energy	-13
Mobile	-8
Waste	0
Water	-8
Total Reduced Emissions	**-29**
Potentially Significant Impact Threshold	*1,100*
Exceed Significance Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment B in *Appendix B* for Model Data Outputs.

As shown in Table 3-24-10, Project operations would result in a decrease of approximately 29 metric tons of CO_2e annually compared with existing conditions and would not exceed 1,100 metric tons annually. A less than significant impact would occur.

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

No Impact.

El Dorado County does not currently have an adopted plan for the purpose of reducing GHG emissions. However, the State of California promulgates several mandates and goals to reduce statewide GHG emissions, including the goal to reduce statewide GHG emissions to 40 percent below 1990 levels by the year 2030 (SB 32). Project-generated GHG emissions would not exceed GHG significance thresholds, which were prepared with the purpose of complying with statewide GHG emission reduction goals. In addition, the Project would not conflict with the 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) or the county's General Plan, as shown.

4.8.2.3 2020 Metropolitan Transportation Plan/ Sustainable Communities Strategy

The Sacramento Area Council of Governments (SACOG) adopted the MTP/SCS in 2019. The MTP/SCS sets the GHG reduction goal of 19 percent below 2005 levels by 2035. Land use information is generally used to inform long-range planning documents, including the MTP/SCS. If a given project is consistent with the land use designation, the project is generally consistent with the MTP/SCS GHG emission projections and would not increase emissions beyond what is anticipated in the MTP/SCS, or inhibit the county from reaching its reduction targets. The Proposed Project is consistent with the existing land use designation of the Camp facility and is not proposing any changes to land use designations. Further, while the Proposed Project would generate GHG emissions, those emissions would be less than the baseline existing conditions, resulting in a decrease of emissions due to the proposed modernization of outdated facilities. Since the Project would result in a decrease of GHG emissions compared with existing conditions, the Project would not obstruct the achievement of the MTP/SCS emission reduction targets.

4.8.2.4 El Dorado County General Plan

The Project is consistent with the Land Use Element of the General Plan. As discussed previously, the Project proposes the demolition and replacement of existing buildings, with no land use changes or additional staffing or increase in inmate population. Therefore, the Project is consistent with this General Plan land use designation and would not exceed the population or job growth projections used by the EDCAQMD to develop its Air Quality Attainment Plans.

The Project would not conflict with any regulation adopted for the purpose of reducing the emissions of GHGS. No impact would occur.

4.8.3 Mitigation Measures

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

4.9 Hazards and Hazardous Materials

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

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

A hazardous material is defined in 22 CCR § 662601.10 as follows:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed.

Transporters of hazardous waste in California are subject to many federal and state regulations. They must register with the California Department of Health Services (DHS) and ensure that vehicle and waste container operators have been trained in the proper handling of hazardous waste. Vehicles used for the transportation of hazardous waste must pass an annual inspection by the California Highway Patrol (CHP). Transporters must allow the CHP and/or the DHS to inspect its vehicles and must make certain required inspection records available to both agencies. The transport of hazardous materials that are not wastes is regulated by the U.S. Department of Transportation through national safety standards.

Other risks resulting from hazardous materials include the use of these materials in local industry, businesses and agricultural production. The owner or operator of any business or entity that handles a hazardous material above threshold quantities is required, by state and federal laws, to submit a business plan to the local Certified Unified Program Agency (CUPA). The El Dorado County Environmental Management Department is responsible for ensuring compliance with applicable state laws, regulation, and County ordinances concerning many important public health issues.

Under Government Code Section 65962.5, both the DTSC and the SWRCB are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. The Project site is not listed by the DTSC or SWRCB as a hazardous substances site on the list of hazardous waste sites compiled pursuant to Government Code § 65962.5 (Cortese List).

4.9.1 Environmental Setting

The Project site is located 5540 Longview Lane Georgetown, CA 95634, and is currently used by CAL FIRE as a Conservation Camp. The site includes an administration Building, inmate dorm building, inmate recreation building, inmate hobby building, CDCR/CDF barracks building, inmate kitchen and mess hall, inmate staging area (with Restroom and showers), warehouse, vehicle storage buildings, shops, sawmill shed, sawmill building, generate/pump/storage/building, covered vehicle rack, and vehicle wash recycling. The majority of the existing site is characterized as developed forest land surrounded by undeveloped and rural residential forest. The property is bounded on all sides by a chain link fence. The site gently slopes north to south.

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

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

Less than significant impact.

Implementation of the Project would not require additional transport, use, or disposal of hazardous materials above current site use. Routine transportation of diesel and gasoline fuels would occur in order to refill existing storage tanks. Transportation of these fuels would be via approved fuel transport trucks that have been licensed specifically for this purpose. The transport of hazardous materials by truck is regulated by federal safety standards under the jurisdiction of the U.S. Department of Transportation. The CHP is responsible for tanker truck inspections and permitting within the state. Because of existing requirements for the use, transport, and disposal of propane, diesel and gasoline, the potential for significant hazards to the public or the environment through the routine transport, use, or disposal of hazardous fuels is less than significant.

Additionally, CAL FIRE would comply with all federal, state, and local regulations regarding the storage of hazardous waste and all onsite hazardous waste handling and storage would occur within the specially designed hazardous waste storage building which would be equipped with secondary containment.

Other hazardous material use may include lubricants, fuels, and solvents in relatively small quantities. Because all on- and offsite storage and use of hazardous materials would be conducted consistent with applicable regulations, use of these materials would not create a significant hazard to the public and impacts would be less than significant. No mitigation would be required.

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

Less than significant impact.

As stated above in (a), the Proposed Project site does include existing fuel storage tanks that will be replaced as part of the project. Additionally, the project involves replacement and upgrades to the existing facility to improve safety and meet current building code requirements. Hazardous materials, such as diesel fuel and oil, would be used during construction, demolition, and operation and maintenance at the Project site. The release of any hazardous substance to the environment would be prevented through the implementation of BMPs listed in the SWPPP and SPCC Plan. As described above in the discussion under a), routine use, storage, and handling of hazardous substances would be conducted in accordance with applicable federal, state, and local regulations. Hazards related to building and vehicle maintenance materials would be present at the Project site.

Because of existing requirements for the use, transport, and storage, of diesel and gasoline the potential for significant hazards to the public, construction workers, and environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be reduced to a less than significant impact.

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

Less than significant impact.

There are no schools located within ¼ mile of the Project site and the closest school is over two miles east of the project site. Please see the response to b) above. Impacts would be less than significant. No mitigation would be required.

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

No impact.

ECORP conducted a search of the DTSC's Hazardous Waste and Substance List (Cortese List), EnviroStor online database, and the SWRCB's GeoTracker online database for the Project Area and did not identify any potential or confirmed active state or federal Superfund sites located within or immediately adjacent to the Project site. Therefore, the Proposed Project would not be located on a site which is included on a list of hazardous material sites. No impact would occur.

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

No impact.

The closest airport to the Project site is Georgetown Airport, approximately one mile north of the Project site. The Proposed Project will not change these uses of the project site and would not add additional inmates or personal, therefore there will be no additional hazards to people residing or working in the Proposed Project Area. No impact would occur.

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

No Impact.

Construction of the Proposed Project would not interfere with the any emergency response and recovery plans and would enhance ability to respond to emergency situations locally. No impact would occur.

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

Less than significant impact.

According to the *Draft Fire Hazard Severity Zones* in State and Local Responsibility Area Maps published by CAL FIRE, the Project site is located in a high hazard severity zone; however, as described in the Project Description, the facility is designed and equipped to respond to both natural and manmade disasters (including fire). Additionally, the proposed project will not add additional buildings or structures but will be replacing existing structures in like-kind. New building materials will be used that are designed to be fire resistant (especially when compared to existing older buildings). Therefore, the Proposed Project will have a less than significant impact on increasing the wildfire risk within the area or further exposing people or structures to additional significant risk of loss, injury, or death involving wildland fires.

4.9.3 Mitigation Measures

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

4.10 Hydrology and Water Quality

4.10.1 Regulatory Setting

4.10.1.1 Federal

Clean Water Act

The federal Clean Water Act (CWA) was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The CWA also directs states to establish water quality standards for all waters of the United States and to review and update such standards on a triennial basis. Section 319 mandates specific actions for the control of pollution from nonpoint sources.

The USEPA has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the National Pollutant Discharge Elimination System (NPDES) Program, to the SWRCB and the Regional Water Quality Control Boards (RWQCBs).

Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body's designated beneficial use. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numeric standards. Water quality standards applicable to the Proposed Project are listed in the basin plan (RWQCB 2018).

National Pollutant Discharge Elimination System

The goal of the NPDES diffuse source regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent practicable" through the use of BMPs. The NPDES permit system was established in the CWA to regulate point source discharges (a municipal or industrial discharge at a specific location or pipe) and certain types of diffuse source dischargers. As defined in the federal regulations, nonpoint sources are generally exempt from NPDES permit program requirements. Nonpoint pollution sources are diffuse and originate over a wide area rather than from a definable point. Nonpoint pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Urban stormwater runoff and construction site runoff, however, are diffuse sources regulated under the NPDES permit program because they discharge to receiving waters at discrete locations in a confined conveyance system. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits.

Section 307 of the CWA describes the factors that the USEPA must consider in setting effluent limits for priority pollutants. For diffuse-source discharges (e.g., municipal stormwater and construction runoff), the NPDES program establishes a comprehensive stormwater quality program to manage urban stormwater and minimize pollution of the environment to the maximum extent practicable. The NPDES program consists of:

1. characterizing receiving water quality,
2. identifying harmful constituents,
3. targeting potential sources of pollutants, and
4. implementing a comprehensive Stormwater Management Program.

State implementation of the NPDES program as it relates to the Proposed Project is discussed below under state and regional regulations.

National Toxics Rule and California Toxics Rule

In 1992, pursuant to the CWA, USEPA promulgated the National Toxics Rule (NTR) to establish numeric criteria for priority toxic pollutants for California. The NTR established water quality standards for 42 priority pollutants not covered at the time under California's statewide water quality regulations. In May 2000, USEPA issued the California Toxics Rule (CTR), which promulgated numeric criteria for additional priority pollutants. The CTR documentation (Volume 65, pages 31682–31719 of the Federal Register [65 FR 31682–31719], May 18, 2000, along with amendments in February 2001 "carried forward" the previously promulgated criteria of the NTR, thereby providing a single document listing of water quality criteria for 126 priority pollutants for California surface waters.

Federal Antidegradation Policy

The federal antidegradation policy is designed to protect existing uses and the level of water quality necessary to protect existing uses and provide protection for higher quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions (40 Code of Federal Regulations 131.12):

1. Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.
2. Where the quality of waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the state finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.
3. Where high quality waters constitute an outstanding National resource, such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

4.10.1.2 State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act is California's statutory authority for the protection of water quality. Under the act, California must adopt water quality policies, plans, and objectives (synonymous with the term "criteria" used by USEPA) that ensure beneficial uses of state waters are reasonably protected. The Porter-Cologne Water Quality Control Act requires the nine RWQCBs to adopt water quality control plans ("basin plans") that define the beneficial uses of the water bodies throughout the region to be protected, the water quality objectives necessary for reasonable protection of the beneficial uses, and a program of implementation for achieving the water quality objectives. In addition, the act authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements to surface waters and land. Rector Creek is within the jurisdiction of the San Francisco Bay RWQCB.

Water Quality Control Plan for San Francisco Bay

The *Water Quality Control Plan for San Francisco Bay* (2018) defines the beneficial uses, water quality objectives, implementation programs, and surveillance and monitoring programs for waters of San Francisco Bay and its tributary basins. The basin plan contains specific numeric water quality objectives for bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, temperature, turbidity, and trace elements, as well as numerous narrative water quality objectives, which are applicable to certain water bodies or portions of water bodies.

Statewide National Pollutant Discharge Elimination System Storm Water Permit for General Construction Activity

The SWRCB has issued a general NPDES permit for stormwater discharges associated with construction activity of greater than one acre in size, including Linear Unground Projects —Order 2009-0009-DWQ, as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ (General Construction Permit). The General Construction Permit requires the preparation of a SWPPP that identifies and describes the BMPs to be implemented at construction sites to control pollution from stormwater runoff. Coverage is obtained by submitting a Notice of Intent, risk assessment, post-construction calculations, a site map, the SWPPP), and a signed certification statement by the legally responsible person to the SWRCB prior to construction. Because the Project does not result in 1-acre of ground disturbance, a SWPPP is not required.

California Antidegradation Policy

The SWRCB (State Board Resolution No. 68-16) adopted the California Antidegradation Policy, otherwise known as the Statement of Policy with Respect to Maintaining High Quality Water in California, in 1968. Unlike the Federal Antidegradation Policy, the California Antidegradation Policy applies to all waters of the state, not just surface waters. The policy requires that, with limited exceptions, whenever the existing quality of a water body is better than the quality established in individual basin plans, such high quality must be maintained and discharges to that water body must not unreasonably affect any present or anticipated beneficial use of the water resource.

4.10.1.3 Local

The El Dorado County Building and Safety Services Department issues grading permits for work to regulate and oversee activities that could, among other things, degrade water quality within the local environment.

4.10.1.4 CON-48: Regional Hydrology

The site is located within the South Fork American Watershed, which is part of the larger American River Watershed. The American River drainage covers 1,900 square miles of the Tahoe and El Dorado National Forests, including the Granite Chief Wilderness and Desolation Wilderness. Flowing west from the peaks of the northern Sierra Nevada, west of Lake Tahoe, its streams gradually converge into the South, Middle and North Forks of the American River. This river supports mining, hydroelectric generation, timber cultivation, and many forms of recreation. The South Fork Watershed of the American River is 90 miles long, with an 850-square-mile watershed. It originates in the high Sierra in the El Dorado National Forest. The river flows west, receiving Silver Creek, a major tributary, and flows past the town of Coloma where it then turns southwest and continues into Folsom Reservoir. It is the most heavily used (industrial use) fork, with 11 hydroelectric plants operated by Sacramento Municipal Utility District, El Dorado Irrigation District, PG&E, and Rock Creek Powerhouse.

4.10.1.5 Site Hydrology and On-Site Drainage

The Project Site would maintain existing grades. Generally, the site currently slopes from north to south. A network of new storm drain piping will connect storm drain inlets and subdrains throughout the Project Area to collect anticipated runoff. All roof drains will be hard piped to the storm drain system. It is proposed that the storm drains will connect to outfalls and drain across the natural grade to the south, similar to the current discharge patterns.

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

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

Less than significant impact.

The majority of the precipitation for the area occurs during the winter months; however, adverse storm events can also occur outside of the winter. During construction of the Proposed Project, impacts to water resources could occur without proper controls to protect water quality and reduce impacts to soil erosion. Soil can be loosened during demolition, fill and grading, paving, and tree removal processes. Loosened soils and spills of fluids or fuels from construction vehicles and equipment or miscellaneous construction materials and debris could degrade surface and groundwater quality. A heavy rainfall event could cause pollutants to flow offsite and reach nearby surface water drainage facilities. The Project Site and area impacted would be more than one acre, making the Proposed Project subject to the requirements of the statewide NPDES stormwater permit for construction (Order 98-08-DWQ). A SWPPP, a required element of the NPDES, includes a listing of BMPs to prevent construction pollutants and products from violating water quality standards or waste discharge requirements. A SWPPP would be required for the Proposed Project.

Additionally, all operational activities would be performed consistent with water quality regulations and all hazardous material special use areas would be designed to protect against surface and groundwater contamination. CAL FIRE would comply with all federal, state, and local regulations regarding the storage of hazardous waste and all onsite hazardous waste storage would occur within the specially designed hazardous waste storage building, which would be equipped with secondary containment. Therefore, the Proposed Project will have a less then significant impact on water quality. No mitigation is required.

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

Less than significant impact.

Domestic water supply demands would not increase with the proposed improvements for the Project. The facility currently receives its domestic supply from the GDPUD, which uses surface water supplies to meet customer demands. Project implementation will not result in a substantial increase in impervious surfaces on the site. A network of new storm drain piping will connect storm drain inlets and subdrains throughout the Project Area to collect anticipated runoff. Piped drainage will discharge at the south end of the project site where it will flow in a southwesterly direction through natural drainage channels before entering one of multiple existing culverts at the south end of Longview Lane in order to discharge under the road. Downstream of the culverts the runoff continues to flow off site through existing, natural drainage channels in a southerly direction. When compared to current site conditions, the Proposed Project would not substantially increase the amount of impervious surface on the Project Site nor substantially interfere with groundwater recharge. As such, the Proposed Project would have a less than significant impact on groundwater. No mitigation is required.

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

Less than significant impact.

The Proposed Project will not alter the existing drainage pattern and surface runoff volumes of the site; therefore, the Proposed Project will have a less than significant impact to flood flows. No mitigation is required.

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

Less than significant impact.

The Project Site is not located in an area protected by levees. According to the Federal Emergency Management Agency maps, the Project Site is located in Zone X (area of minimal flood hazard). Additionally, The Project Site is neither located near any large bodies of water and is located inland, and not within a seiche, tsunami, or mudflow hazard area. Therefore, the Proposed Project would not be subject to inundation by seiche, tsunami, or mudflow. A less than significant impact would occur. No mitigation is required.

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

No impact.

As stated above, the Proposed Project would be required to comply with SWPPP and NPDES regulations and would not obstruct or conflict with water quality control or sustainable groundwater management plans. No mitigation is required.

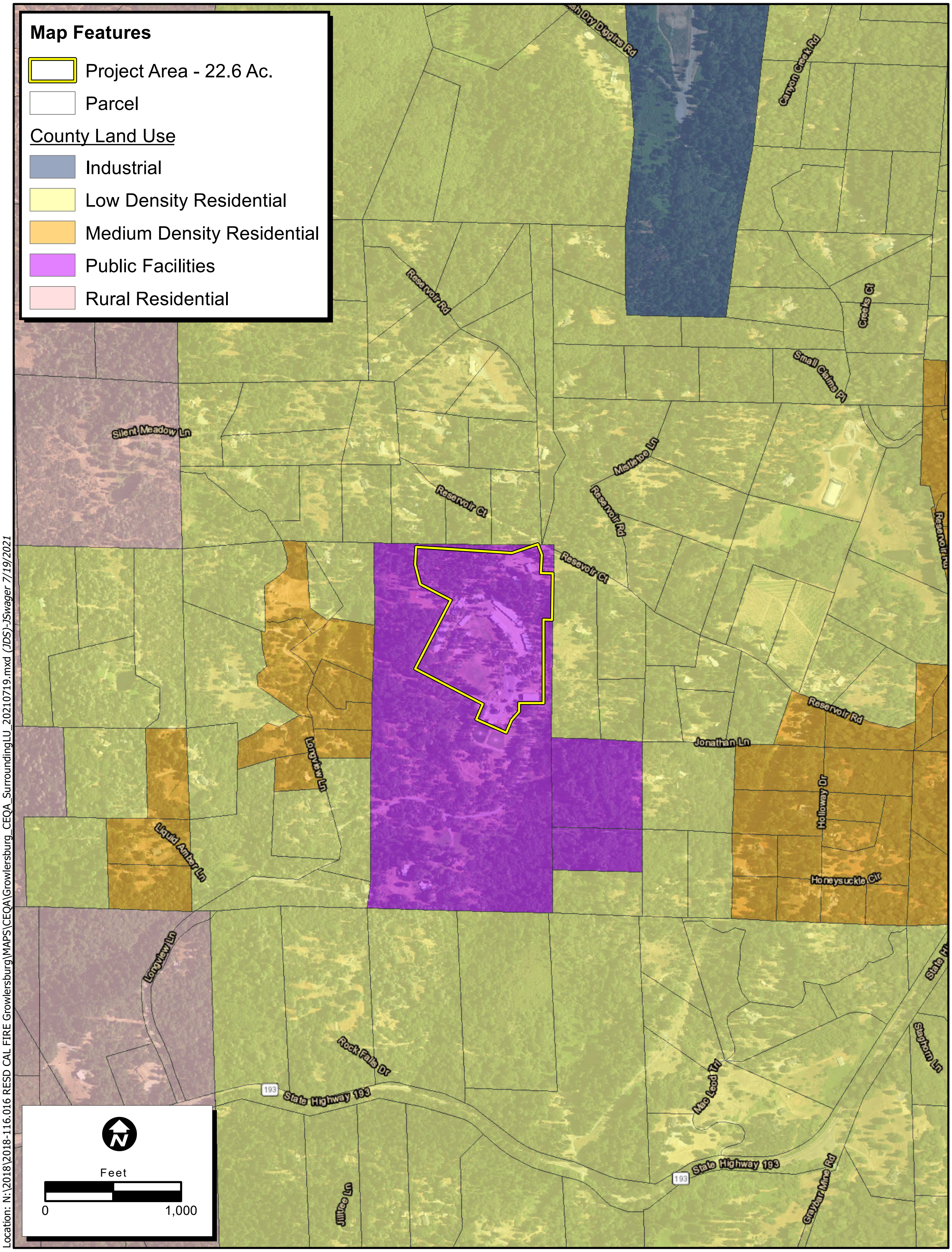
4.10.3 Mitigation Measures

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

4.11 Land Use and Planning

4.11.1 Environmental Setting

The Project Site is located at 5540 Longview Lane, Georgetown, El Dorado County. The Project Site consists of forested mountain terrain with graded areas scattered throughout the facility and is currently being used to house an inmate population for emergency incidents, such as fires, floods, and earthquakes. The site is zoned as Residential Estate 5 acres and has a General Plan designation of Public Facilities. The facility is surrounded by rural residential properties. Directly north (approximately 1.5 miles) of the site is the Georgetown Airport. The surrounding area is characterized as rural residential (see Figure 4-1). The site is generally bounded by Longview Lane to the north with single-family residences beyond; an access road to some wastewater retention ponds (located south of and abutting the Project Area) traversing adjacent to and east of the Project Site with a single-family residence and Reservoir Road beyond; open space wooded forest land to the west with a scattering of single-family residences and various unpaved mountain roads beyond; and a wastewater retention pond to the south with a single-family residence and Longview Lane, which for the most part encircles the Project vicinity from Reservoir Road north of the site, meandering through the scattering of single-family residences surrounding the Project Site, and returning back to Reservoir Road beyond. The State of California and state-owned land, such as the CAL FIRE parcel, are not subject to local, city, or county land use and zoning regulations. However, the state is subject to the requirement under CEQA to assess Project-related impacts that may occur as a result of conflicts between existing and proposed land uses.



Location: N:\2018\2018-116.016 RESD CAL FIRE Growlersburg\MAPS\CEQA\Growlersburg_CEQA_SurroundingLU_20210719.mxd (JDS) -JSwager 7/19/2021

Map Date: 7/19/2021

Sources: ESRI, NAIP (2020), El Dorado County

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 4-1. Surrounding Land Use

2018-116.016 RESD CAL FIRE Growlersburg

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

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

No Impact.

Projects, such as a railroad lines, major highways, or water canals, could physically divide an established community by removing existing roadway connections, walkways, bike paths, and other types of links between community areas. The Proposed Project involves upgrading an existing facility. Therefore, no removal of roadways or other connections to the surrounding community would occur. No impact will occur, and no mitigation is required.

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

No Impact.

The State of California and state-owned land, such as a CAL FIRE facility, are not subject to local city or county land use and zoning regulations. Although the state is not subject to local land use and zoning regulations, such regulations were considered in this IS/MND, and the Project as proposed does not appear to conflict with any local regulations. Therefore, the Proposed Project would have no impact in this area. No mitigation is required.

4.11.3 Mitigation Measures

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

4.12 Mineral Resources

4.12.1 Environmental Setting

Minerals are defined as any naturally occurring chemical elements or compounds, formed from inorganic processes and organic substances. Minable minerals, or an "ore deposit," are defined as a deposit of ore or minerals having a value materially in excess of the cost of developing, mining, and processing the mineral and reclaiming the Project Area. The conservation, extraction, and processing of those mineral resources is essential to meeting the needs of society. El Dorado County contains a wide variety of mineral resources. Both the USGS and California Geological Survey have evaluated the potential locations and production capacity of various types of extractive resources throughout the county. Metallic mineral deposits, gold in particular, are considered the most significant extractive mineral resource and the 1849 California "Gold Rush" originated from gold discovered in El Dorado County. Other metallic minerals found in the county include silver, copper, nickel, chromite, zinc, tungsten, mercury, titanium, platinum, and iron. Nonmetallic mineral resources include building stone, limestone, slate, clay, marble, soapstone, sand, and gravel. (El Dorado County General Plan EIR 2003).

4.12.2 Regulatory Setting

4.12.2.1 Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA) states that cities and counties must adopt an ordinance(s) "which establishes procedures for the review and approval of reclamation plans and the issuance of a permit to conduct surface mining operations" (PRC Section 2774). The intent of this legislation is to ensure the prevention or mitigation of the adverse environmental impacts of mining, the reclamation of mined lands, and the production and conservation of mineral resources are consistent with recreation, watershed, wildlife, and public safety objectives (PRC Section 2712).

SMARA requires the State Geologist to classify land into Mineral Resource Zones (MRZs), according to the known or inferred mineral potential of that land. The process is based solely on geology, without regard to existing land use or land ownership. The primary goal of mineral land classification is to ensure that the mineral potential of land is recognized by local government decision makers and considered before land use decisions, which could preclude mining, are made. Areas subject to California mineral land classification studies are divided into MRZ categories that reflect varying degrees of mineral potential:

- MRZ-1: Areas of no mineral resource significance
- MRZ-2: Areas of identified mineral resource significance
- MRZ-3: Areas of undetermined mineral resource significance
- MRZ-4: Areas of unknown mineral resource significance

Goals, programs, and policies that are applicable to the Proposed Project are listed below.

4.12.2.2 El Dorado County

Policy 7.2.3.3: Existing development (commercial, residential, and public facilities), as well as undeveloped private lands, shall be protected from significant adverse environmental effects caused by mining through use permit conditions, mitigation measures, and the Noise Element standards.

Policy 7.2.3.12: Except as provided for in Policy 2.2.2.7, zone changes removing the -MR Combining Zone District from the base zone district shall be considered by the County only when specific studies similar in nature to State Classification Reports prove that a significant mineral deposit no longer exists.

4.12.3 Mineral Resources (XII) Environmental Checklist and Discussion

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

No Impact.

According to Mineral Land Classification maps located on the DOC website, the Project Site is not located in an MRZ. The Proposed Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. There are no mining activities being conducted on or near the site and no mining activities are planned for the site. Therefore, no impact would occur.

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

No Impact.

The Proposed Project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan, because no mining operations exist on or adjacent to the Project Site (El Dorado County 2003). The closest active mining operation is approximately three miles northeast of the Project Site, which is currently used as a conservation camp and will remain so following Project implementation. Therefore, no impact would occur.

4.12.4 Mitigation Measures

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

4.13 Noise

This section is based on the analysis and recommendations presented in the Noise Impact Assessment prepared for the Proposed Project (ECORP 2021d, *Appendix G*).

4.13.1 Environmental Setting

4.13.1.1 Noise Fundamentals

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

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

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source (USEPA 1971). Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2011). Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed (FHWA 2011).

Human Response to Noise

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

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

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10 dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Noise-Sensitive Land Uses

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

The nearest existing noise-sensitive land uses to the Project Site are a scattering of single-family residences on the surrounding county roadways, with the closest located at a 92-feet distance.

4.13.1.2 Vibration Fundamentals

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

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

4.13.1.3 Existing Ambient Noise Environment

The Project Site consists of forested mountain terrain with graded areas scattered throughout the facility and is currently being used to house an inmate population for emergency incidents, such as fires, floods, and earthquakes. The site is generally bound by Longview Lane to the north with single-family residences beyond; an access road to some wastewater retention ponds (located south of and abutting the Project Area) traversing adjacent to and east of the Project Site with a single-family residence and Reservoir Road beyond; open space wooded forest land to the west with a scattering of single-family residences and various unpaved mountain roads beyond; and a wastewater retention pond to the south with a single-family residence and Longview Lane, which for the most part encircles the Project vicinity from Reservoir Road north of the site, meandering through the scattering of single-family residences surrounding the Project Site, and returning to Reservoir Road beyond. The principle noise source in the Project Area is related to vehicular traffic on Reservoir Road and Longview Lane and the various training and operational activities associated with the Camp facilities. Other noise sources include overflights from the Georgetown Airport and agricultural activities on nearby land uses.

4.13.2 Regulatory Setting

4.13.2.1 El Dorado County General Plan

The Public Health, Safety, and Noise Element of the El Dorado County General Plan provides a basis for comprehensive local policies to control and abate environmental noise and to protect the citizens of the county from excessive noise exposure. By identifying noise-sensitive land uses and establishing compatibility guidelines for land use and noises, noise considerations will influence the general distribution, location, and intensity of future land uses. The result is that effective land use planning and mitigation can alleviate the majority of noise problems. The county defines "community regions" as areas that are appropriate for the highest intensity of self-sustaining compact urban development or suburban development. The county defines "rural centers" as areas of higher intensity development located throughout the rural areas of the county based on the availability of infrastructure, public services, existing uses, parcel size, and impacts on natural resources. The county classifies all lands not contained within the boundaries of a "community region" or a "rural center" as "rural regions". The portion of the county containing the Project site would thus be classified as a rural region and would be subject to the county standards for noise impacts associated with Project construction and operations found in Tables 4-11 and 4-12 below.

Table 4-11. Noise Level Performance Protection Standards for Noise-Sensitive Land Uses Affected by Non-Transportation Sources

Noise Level Descriptor	Daytime 7 a.m. – 7 p.m.		Evening 7 p.m. – 10 p.m.		Night 10 p.m. – 7 a.m.	
	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}, dB	55	50	50	45	45	40
Maximum level, dB	70	60	60	55	55	50

Source: El Dorado County 2019
Notes: Each of the noise levels specified above shall be lowered by five dB 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 County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.
In Community areas the exterior noise level standard shall be applied to the property line of the receiving property. In Rural Areas the exterior noise level standard shall be applied at a point 100' away from the residence. The above standards shall be measured only on property containing a noise sensitive land use as defined in Objective 6.5.1. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all effected property owners and approved by the County.

Table 4-12. Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in Rural Regions – Construction Noise

Noise Level Descriptor	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
All Residential	7 a.m. – 7 p.m.	50	60
	7 p.m. – 10 p.m.	45	55
	10 p.m. – 7 a.m.	40	50
Commercial, Recreation, and Public Facilities	7 a.m. – 7 p.m.	65	75
	7 p.m. – 7 a.m.	60	70
Rural Land, Natural Resources, Open Space, and Agricultural Lands	7 a.m. – 7 p.m.	65	75
	7 p.m. – 7 a.m.	60	70

Source: El Dorado County 2019

The Public Health, Safety, and Noise Element sets various goals and policies that would apply to projects within unincorporated rural regions of El Dorado County. The following goals are applicable to the Proposed Project:

Policy 6.5.1.1: Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the performance standards of Table 6-2 (presented as Table 4-11 in this analysis), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Policy 6.5.1.3: Where noise mitigation measures are required to achieve the standards of Table 6-2 (Table 4-11 in this analysis), the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.

Policy 6.5.1.10: To provide a comprehensive approach to noise control, the County shall:

A) Develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the project review process and, as may be determined necessary, through the building permit process.

B) Develop and employ procedures to monitor compliance with the standards of the Noise Element after completion of projects where noise mitigation measures were required.

C) The zoning ordinance shall be amended to provide that noise standards will be applied to ministerial projects with the exception of single-family residential building permits if not in areas governed by the Airport Land Use Compatibility Plan.

6.5.1.11: The standards outlined in [Table 4-12] shall not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally recognized holidays. Further, the standards outlined in [Table 4-4] shall not apply to public projects to alleviate traffic congestion and safety hazards.

4.13.2.2 El Dorado County Airport Land Use Compatibility Plan

The following Noise Compatibility policies, promulgated from the El Dorado Airport Land Use Compatibility Plan (ALUCP), are applicable to the Project:

Policy 4.2.1: *Evaluating Noise Compatibility*: The noise compatibility of proposed land uses within the influence area of each airport addressed in this Airport Land Use Compatibility Plan (ALUCP) shall be evaluated in accordance with the policies set forth in this section together with Table 1, Noise Compatibility Criteria, and the Noise Zone Policy Map for each airport provided in Chapter 6 of the ALUCP.

(A) The criteria in Table 1, Noise Compatibility Criteria, indicate the maximum acceptable noise exposure for a range of land uses that may be proposed within the airport vicinity. Within the various noise exposure ranges, each land use type is shown as being either “normally compatible,” “conditional,” or “incompatible.” The meaning of these terms is stated in the table and differs for indoor versus outdoor uses.

Policy 4.2.2: Maximum Acceptable Exterior Noise Levels: To minimize noise-sensitive development in areas exposed to significant levels of aircraft noise, new land use development shall be restricted in accordance with the following.

(A) Within the airport-related CNEL 60 dB contour, new residential development—the creation of new residential lots or increase in density on existing lots—shall be prohibited. However, a portion of a residential lot that does not contain a dwelling site may extend into the CNEL 60 dB contour. Exceptions also are provided for existing residential lots (see Policy 2.3.4).

(B) New nonresidential development shall be deemed incompatible in locations where the airport-related noise exposure would be highly disruptive to the specific land use. Applicable criteria are indicated in Table 1, Noise Compatibility Criteria [of the Compatibility Plan].

Policy 4.2.3: *Maximum Acceptable Interior Noise Levels*: To the extent that the criteria in Table 2-1, Noise Compatibility Criteria [of the Compatibility Plan], and other policies herein permit the development of land uses which interior activities may be easily disrupted by noise, shall be required to comply with the following interior noise level criteria.

(A) The maximum, aircraft-related, interior noise level that shall be considered acceptable for land uses near airports is:

(1) CNEL 45 dB in any habitable room of: Residences; Children's schools (K-12); Libraries; Long-term lodging (e.g., dormitories), congregate care facilities, and nursing homes; Hotels, motels, and other short-term lodging; Adult educational and institutional facilities; Hospitals; Places of worship, meeting halls, theaters, and mortuaries; and Miscellaneous other uses as listed in Table 1, Noise Compatibility Criteria [of the Compatibility Plan].

(2) CNEL 50 dB in: Offices and office areas of industrial facilities; Research and Development facilities; Retail centers and stores; and Personal and miscellaneous services.

(B) The noise contours depicted in Chapter 6 [of the Compatibility Plan] for each airport shall be used to calculate compliance with these criteria. The calculations should assume that windows are closed.

4.13.3 Noise (XIII) Environmental Checklist and Discussion

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

Less than Significant Impact.

4.13.3.1 Onsite Construction Noise

Construction noise associated with the Proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

The nearest existing noise-sensitive land uses are a scattering of single-family residences surrounding the Project Site, with the closest receptor located at a 92-feet distance. However, it is acknowledged that the majority of construction equipment is not situated at any one location during construction activities, but rather spread throughout the Project Site and at various distances from sensitive receptors. Therefore, this analysis employs Federal Transit Administration (FTA) guidance for calculating construction noise, which recommends measuring construction noise produced by all construction equipment from the center of the Project Site (FTA 2018), which in this case is 435 feet from the nearest sensitive receptor to the northeast. The El Dorado County's General Plan Public Health, Safety and Noise Element states construction equipment operation is exempt from county noise standards between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 5:00 p.m. on weekends and holidays. The county does not promulgate a numeric threshold pertaining to the noise associated with construction. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Additionally, construction would occur through the Project Site and would not be concentrated at one point.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptors in the Project vicinity, the construction equipment noise levels were calculated using the

Roadway Noise Construction Model for the dredging process and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure, prepared in 1998 by National Institute for Occupational Safety and Health (NIOSH). A division of the US Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3 dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby existing and future planned sensitive receptors.

The anticipated short-term construction noise levels generated for the necessary construction equipment are presented in Table 4-13.

Table 4-13. Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level at Existing Residences	Construction Noise Standards (dBA L_{eq})	Exceeds Standards?
Demolition			
Concrete/Industrial Saw	63.8	*85*	**No**
Excavators (3)	57.9 (each)	*85*	**No**
Rubber Tired Dozers (2)	58.9 (each)	*85*	**No**
Combined Demolition Equipment	**67.6**	*85*	**No**
Site Preparation			
Rubber Tired Dozers (3)	58.9 (each)	*85*	**No**
Tractors/Loaders/Backhoes (4)	61.2 (each)	*85*	**No**
Combined Site Preparation Equipment	**68.8**	*85*	**No**
Grading			
Excavators (2)	57.9 (each)	*85*	**No**
Grader	62.2	*85*	**No**
Rubber Tired Dozer	58.9	*85*	**No**
Scrapers (2)	60.8 (each)	*85*	**No**
Tractors/Loaders/Backhoes (2)	61.2 (each)	*85*	**No**
Combined Grading Equipment	69.4	*85*	**No**

Table 4-13. Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level at Existing Residences	Construction Noise Standards (dBA L_{eq})	Exceeds Standards?
Construction, Paving, Architectural Coating			
Crane	53.8	*85*	**No**
Forklifts (3)	60.6 (each)	*85*	**No**
Generator Set	58.8	*85*	**No**
Tractors/Loaders/Backhoes (3)	61.2 (each)	*85*	**No**
Trencher	58.6	*85*	**No**
Welder	51.2	*85*	**No**
Pavers (2)	55.4 (each)	*85*	**No**
Paving Equipment (2)	63.7 (each)	*85*	**No**
Rollers (2)	54.2 (each)	*85*	**No**
Air Compressor	54.9	*85*	**No**
Combined Construction, Paving, & Architectural Coating	**71.9**	*85*	**No**

Source: Construction noise levels were calculated by ECORP Consulting, Inc. using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Attachment A in *Appendix G* for Model Data Outputs.

Notes: Construction equipment used during construction derived from CalEEMod 2016.3.2. CalEEMod is designed to calculate air pollutant emissions from construction activity and contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. Consistent with FTA recommendations for calculating construction noise, construction noise was measured from the center of the Project site (FTA 2018), which is 435 feet from the nearest sensitive receptor. Additionally, Construction, Paving and Architectural Coating phases are assumed to occur simultaneously.

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

As shown in Table 4-13, no individual or cumulative pieces of construction equipment would exceed the 85 dBA significance threshold for construction noise during any phase of construction at the nearby noise-sensitive receptors.

4.13.3.2 Offsite Construction Worker Traffic Noise

Project construction would result in minimal additional traffic on adjacent roadways over the time period that construction occurs. According to the CalEEMod model, which is used to predict air pollutant emissions associated with Project construction and contains default usage parameters for typical construction projects, including the number of worker commute trips and material haul truck trips, the maximum number of construction workers and haul trucks traveling to and from the Project Site on a single day would be during the demolition phase, with 392 total daily trips (15 worker trips and 377 haul truck trips). The worker trips would largely occur within two distinct segments of the day, the morning and afternoon, while the haul trips would occur intermittently throughout the workday. According to the Caltrans *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013), doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3 dBA change is considered a just-perceivable difference). The majority of this construction-related traffic trips would access the Project via SR 193 to Longview Lane and Project construction would not result in a long-term, consistent doubling of traffic on either of these facilities. The maximum number of construction workers and haul trucks traveling to and from the Project Site on a single day would be during the demolition phase with 392 total daily trips, and it is noted that the demolition phase of construction is estimated to last approximately 20 days. For these reasons the contribution to existing traffic noise during Project construction would not be perceptible.

As discussed above, construction noise produced as a result of the Project would result in a less than significant impact.

4.13.3.3 Project Operational Noise

Noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The nearest existing noise-sensitive land uses to the Project Site are a scattering of single-family residences on the surrounding county roadways, with the closest located at a 92-feet distance.

4.13.3.4 Operational Offsite Traffic Noise

Project operations would not result in additional traffic on adjacent roadways. As stated previously, the Project proposes the demolition and replacement of existing buildings within the Camp facility and does not propose the addition of any CAL FIRE or CDCR staff that would contribute to an increase in operational traffic on adjacent roadways over current conditions. According to the Caltrans *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013), doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3 dBA change is considered a just-perceivable difference). The Project would not result in a doubling of traffic during operations and, therefore, its contribution to existing traffic noise would not be perceptible.

4.13.3.5 Project Operational-Onsite Noise Sources

The main stationary operational noise associated with the Project would be from the various activities associated with the ongoing routine inmate Program and CAL FIRE facility. As discussed hitherto, the Project proposes the demolition and replacement of over 80,000 square feet of the Camp facility. There are no new onsite noise sources proposed for the Project Site. Furthermore, the Project would be required to comply with Title 24 standards and other updated regulatory actions set forth between the time of the initial facility construction and this Project proposal, which include, but are not limited to, higher efficiency components (i.e., heating, ventilation, and air condition (HVAC) systems, generators, heavy equipment) that have since been evolving to generate fewer noise level emissions that would be experienced by the noise-sensitive receptors in the Project vicinity. Therefore, operational onsite noise sources would be lower than the existing ambient noise baseline conditions currently perceived at the Project Site.

As discussed above, operational noise produced as a result of the Project would result in a less than significant impact.

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

Less than Significant Impact.

4.13.3.6 Construction Vibration

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

Construction-related ground vibration is normally associated with impact equipment, such as pile drivers and jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is noted that pile drivers would not be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project Site and would not be concentrated at the point closest to sensitive receptors. Ground-borne vibration levels associated with typical construction equipment at 25-feet distance are summarized in Table 4-14.

Table 4-14. Representative Vibration Source Levels for Construction Equipment

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

Source: FTA 2018; Caltrans 2020b

The El Dorado County does not regulate vibrations associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans (2020) recommended standard of 0.2 inch per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings. Consistent with FTA recommendations for calculating vibration generated from construction equipment, construction vibration was measured from the center of the Project site (FTA 2018). The nearest structure of concern to the construction site, with regard to ground-borne vibrations, is an outbuilding associated with a single-family property located 536 feet east of the Project site center.

Based on the representative vibration levels presented for various construction equipment types in Table 4-14 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential Project construction vibration levels. The FTA provides the following equation:

$$[PPVequip = PPVref \times (25/D)^{1.5}]$$

Table 4-15 presents the expected Project-related vibration levels at a distance of 536 feet.

Table 4-15. Construction Vibration Levels at 177 Feet

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

Notes:
[1]Based on the Vibration Source Levels of Construction Equipment included in Table 4-14 (FTA 2018). Distance to the nearest structure of concern is approximately 536 feet measured from Project Site center.

As shown in Table 4-14, vibration as a result of construction activities would not exceed 0.2 PPV at the nearest structure. Thus, Project construction would not exceed the recommended threshold. The impact would be less than significant.

Operational Vibration

Project operations would not include the use of any large-scale stationary equipment that would result in excessive vibration levels. Therefore, the Project would not result in ground-borne vibration impacts during operations. No impact would occur.

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

No Impact.

The Project Site is located approximately 0.89 mile south of the Georgetown Airport in the unincorporated Community of Georgetown. As shown on the Georgetown Airport Land Use Compatibility Plan *Airport Noise Zones Policy Map* (El Dorado 2012), the Proposed Project lies just outside of the 55-60 dBA CNEL contour lines, and inside the Airport Influence Area contour line. According to the ALUCP's policies described previously, land uses proposed for development that fall within the Airport Influence Area are subject to policies 4.2.2 and 4.2.3. Policy 4.2.2 addresses new nonresidential development in locations where the airport-related exterior noise exposure would be highly disruptive to the specific land use, and Policy 4.2.3 limits the development of land uses that would experience aircraft-related interior noise levels that could cause disruption to activities associated with the specific land use. However, as stated above, the Project Site lies outside of the CNEL contour lines associated with aircraft-related noise levels that would exceed interior/exterior levels that could cause disruption to the specific land use and, therefore, would not expose people working or residing at the facility to excessive airport noise. Additionally, the Project proposes the demolition and replacement of the existing facility and would not be exposing new operational employees or inmates to additional airport noise above the current ambient environment experienced at the Project Site. No impact would occur.

4.13.4 Mitigation Measures

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

4.14 Population and Housing

4.14.1 Environmental Setting

The Project Site will have the same use after the completion of the Proposed Project. The population of Georgetown was approximately 2,577 in 2019. (U.S. Census Bureau 2019). Total number of households is 887 and the Census data shows the average number of persons per household is 2.8. By comparison, El Dorado County averages 2.6 persons per household across its 74,216 households countywide.

4.14.2 Population and Housing (XIV) Environmental Checklist and Discussion

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

No Impact.

The Proposed Project would not increase the number of homes or provide additional offsite infrastructure in the area. No impact would occur.

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

No Impact.

The Proposed Project would not displace any people or existing housing. CAL FIRE staff would continue to operate from the existing facility throughout construction. No impact would occur.

4.14.3 Mitigation Measures

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

4.15 Public Services

4.15.1 Environmental Setting

4.15.1.1 Police Services

The El Dorado County Sheriff's Office provides for the public safety of the community and serves as part of the emergency response for the Project Site. The County Sheriff's office has a substation located at 6101 Front Street, Suite 4, in Georgetown, CA 95633.

4.15.1.2 Fire Services

Regional

The Georgetown Fire Department is located at 6283 Main Street, Georgetown, CA. According to their website, the Fire Department's Fire District covers 96 square miles containing 2,330 parcels. The population of the district is about 6,500.

Current Fire Department staffing includes a full time Chief, a full-time Administrative Assistant, one full-time Fire Training Officer-Paramedic, one full-time Firefighter-Emergency Medical Technician (EMT), and a full-time Fire Equipment Mechanic. There are five Firefighter/Paramedics and one Firefighter/EMT assigned to the ambulance. The Firefighter/EMT also serves as the District Fire Prevention Officer. There are approximately 30 fire line volunteer firefighters on the roster.

During fire season, the district operates with seasonal firefighters in order to have at least two firefighters on each wildland engine per response. The number of seasonal firefighters employed is directly related to available funding.

Onsite

Currently, the existing fire system at the facility is served by the existing domestic water system connection. It is proposed that a new fire system will be installed and fed from the 6-inch GDPUD water main on Longview Lane. A hydrant flow test was completed on February 12, 2021, and it yielded a flow rate of 544 gpm at 20 psi residual. The Project Site requires a fire flow rate of 1625 gpm for a 3-hour duration. As GDPUD can provide 544 gpm, an additional 1,081gpm is required for three hours. This results in a storage amount of 194,580 gallons. At a minimum, it is recommended that two 100,000-gallon tanks be installed. The proposed project includes two 250,000-gallon tank, which is well above the recommended minimum.

A new onsite fire system will be installed to service the campus. This includes new hydrants and fire department connections to supply the fire sprinklers that are required in each building. The fire system will need to be supplied from a fire pump system to provide the required pressure and flow to adequately service the facility.

4.15.1.3 Schools

The Black Oak Mine Unified School District, headquartered at 6540 Wentworth Springs Rd, Georgetown, CA 95634, is home to six schools, ranging from Transitional Kindergarten through 12th grade. There are no schools within one mile of the Project Site; however, there are a few schools within two miles east of the Project Site in Georgetown.

4.15.1.4 Parks

There are a number of open space and large recreational parks to the east of the Project Site. See Section 4.16 *Recreation* for more information on parks within the Project Area.

4.15.2 Public Services (XV) Environmental Checklist and Discussion

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

No Impact.

There will be no substantial adverse impacts associated with the Proposed Project, which will replace/improve the existing Growlersburg Conservation Camp with the construction of an updated facility that would allow the Camp to continue to provide fire protection services to the region. The Proposed Project does not require an expansion of residential housing and would not induce population growth. No impact would occur to public facilities in the area.

4.15.3 Mitigation Measures

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

4.16 Recreation

4.16.1 Environmental Setting

The Georgetown Divide Recreation District manages parks within the area. Georgetown Park and Beam Field are located about one and half miles east and northeast of the Project Site.

4.16.2 Recreation (XVI) Materials Checklist

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

No Impact.

The Proposed Project would not generate an increase in the area population; therefore, it would not significantly increase the use of existing neighborhood or regional parks and recreational facilities. There would be no impact.

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

No Impact.

The Proposed Project does not include recreational facilities or require the construction or expansion of recreational facilities. There would be no impact.

4.16.3 Mitigation Measures

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

4.17 Transportation

4.17.1 Environmental Setting

The Growlersburg Conservation Camp is located on Longview Lane, which is a small two-lane collector road that dead-ends into Highway 193/Georgetown Road. Highway 193/Georgetown Road runs from Highway 49 in Cool east through Growlersburg, where it turns south and runs through Kelsey and ultimately ends at Highway 49 just north of the Highway 49/US 50 interchange. Traffic along Longview Lane is mainly composed of residents and Camp employees, visitors, and deliveries.

4.17.2 Transportation (XVII) Environmental Checklist and Discussion

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

Less than Significant Impact.

The Project Site is located near the rural community of Georgetown on a rural roadway that currently only receives traffic limited to the surrounding rural residences and the existing Camp operations. The Proposed Project is not anticipated to add or create additional vehicular traffic beyond current conditions that would result in a conflict with transportation system performance along Longview Lane or the surrounding roadways. Thus, a traffic impact analysis is not required to calculate the Project's effect on the transportation system.

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

No Impact.

El Dorado County has not yet adopted specific vehicle miles traveled (VMT) metrics or thresholds of significance for transportation studies in accordance with CEQA Guidelines Section 15064.3, subdivision (b). However, the California Office of Planning and Research (OPR) has identified projects generating less than 110 daily trips as appropriate for screening from VMT analysis. The Project is not anticipated to generate additional trips above what is currently generated by the facility and would not exceed the 110 daily net new trips and would, therefore, be exempt from VMT analysis according to the OPR recommendations.

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

Less than Significant Impact.

The onsite circulation pattern is adequate for the proposed use and the site plan provides separate pathways for pedestrian circulation. The Project would not introduce transportation hazards and related impacts are less than significant. No mitigation is required.

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

No Impact.

The Proposed Project will not block roadways or otherwise cut off emergency access. The Project itself provides fire protection and emergency response to other areas. Impacts are expected to be less than significant, and no further analysis is required on this subject.

4.17.3 Mitigation Measures

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

4.18 Tribal Cultural Resources

4.18.1 Ethnographic, Religious, and Cultural Context

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

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

The Spanish arrived on the central California coast in 1769, and by 1776 it had been explored by José Canizares. In 1833, an epidemic, most likely to be malaria, raged through the Sacramento Valley, killing an estimated 75 percent of the native population. The discovery of gold in 1848 at Sutter’s Mill, near the

Nisenan village of *Colluma* (now Coloma) on the South Fork of the American River, drew thousands of miners into the area, and led to widespread killing and the virtual destruction of traditional Native American cultures.

4.18.2 Regulatory Setting

4.18.2.1 Assembly Bill 52

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

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

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

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

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

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

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

In accordance with Section 21082.3(c)(1) of the PRC, "… information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native

American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with subdivision (r) of Section 6254 of, and Section 6254.10 of, the Government Code, and subdivision (d) of Section 15120 of Title 14 of the CCR, without the prior consent of the tribe that provided the information." Therefore, the details of tribal consultation summarized herein are provided in a confidential administrative record and not available for public disclosure without written permission from the tribes.

Summary of AB 52 Consultation

At the time CAL FIRE was ready to initiate CEQA review, it had received written requests from numerous tribes to receive Project notices. CAL FIRE determined that of these requests, the United Auburn Indian Community of Auburn Rancheria (UAIC) represented the only culturally affiliated California Native American Tribe. Therefore, on April 28, 2021, within 14 days of determining that it had a complete project description and it was prepared to begin review under CEQA, CAL FIRE sent an initial notification letter to the UAIC of the Proposed Project in accordance with AB52. The notification letter included Project information and an invitation to consult on the Project. CAL FIRE requested a response to the offer to consult within 30 days of the receipt of the letter. The close of the response period was on May 28, 2021. The UAIC has not requested AB52 consultation as of the date of this document.

Therefore, in accordance with PRC 21082.3(d)(3), CAL FIRE proceeded without tribal consultation and this CEQA document draws from other lines of evidence to determine whether or not TCRs will be impacted by the Proposed Project.

4.18.2.2 Summary of Other Tribal Consultation

Separate from AB52, CAL FIRE maintains a list of Native American tribes to be contacted for projects within El Dorado County to seek out information regarding possible Native American resources within or near the Project Area. These tribes include:

- Ione Band of Miwok Indians
- Shingle Spring Band of Miwok Indians
- UAIC
- Washoe Tribe of Nevada and California
- Wilton Rancheria

CAL FIRE sent a notification letter to the above tribes regarding the Proposed Project that contained information and a request for information about Native American resources within the Project Area. CAL FIRE requested responses to the offer to consult within 30 days of the receipt of the letter. The close of the response period was on May 28, 2021.

Anna Starkey from the UAIC responded to CAL FIRE requesting more information regarding the Project, but did not request formal consultation, nor did the tribe provide information regarding knowledge of Native American resources in the Project Area. CAL FIRE sent the requested information to UAIC, and asked if they needed more information or were requesting formal consultation. No response was received. CAL FIRE followed up again by email and by phone message to ask if the tribe was requesting any additional information or formal consultation, and no response was received to either message. No other tribes have responded to date.

Tribal Cultural Resources

In the absence of tribes wishing to consult under AB52, information about potential impacts to TCRs was drawn from the results of a search of the Sacred Lands File of the NAHC, existing ethnographic information about pre-contact lifeways and settlement patterns, and information on archaeological site records obtained from the CHRIS.

Sacred Lands File Search

A search of the NAHC Sacred Lands File was requested for the Project Area on January 26, 2021. The NAHC responded on February 12, 2021, that the Sacred Lands File search was negative, which means that no sacred lands have been recorded within the Project Area. The NAHC included a list of suggested tribal representatives to contact who are culturally affiliated with the region. The UAIC was on the list of contacts and the tribe was offered an opportunity to consult, as summarized above.

Ethnographic Information

The ethnographic information reviewed for the Project, including ethnographic maps (Wilson and Towne 1978), lists the nearest Native American village as *Siwim Pakan*, located 5 miles to the southeast of the Project Area, near Bear Creek. There is nothing in the ethnographic literature that suggests that the Project location is either known or suspected to have ethnographic villages or resources within its boundaries.

CHRIS Records Search and Pre-Contact Resources

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

4.18.3 Tribal Cultural Resources (XVIII) Environmental Checklist and Discussion

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

Less than Significant with Mitigation Incorporated.

The search of the Sacred Lands File by the NAHC did not identify sacred lands within or immediately adjacent to the Project Area. The CHRIS records search indicated there are five pre-contact Native American resources within 0.5 mile of the Project Area. Therefore, evidence suggests that there is a low to moderate potential for TCRs inside the Project Area.

No TCRs were identified within the Project Area and the Proposed Project would not cause a substantial adverse action to a known TCR. However, impacts to unknown TCRs that may be discovered during Project construction is considered a potentially significant impact. Implementation of Mitigation Measure **TCR-1** would reduce this impact to less than significant.

4.18.4 Mitigation Measures

TCR-1: **Implement Measures to Protect Unanticipated Tribal Cultural Resources Discoveries.** If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within 100 feet of the discovery. The construction foreman will notify DGS and CAL FIRE, which shall notify culturally affiliated tribe(s) and a qualified professional archaeologist. The responding tribe(s) will be afforded a reasonable opportunity to visit the discovery location to determine whether or not it is a tribal cultural resource. The following actions shall apply, depending on the nature of the find:

- If the culturally affiliated tribe(s) determines that the find does not represent a tribal cultural resource, and the qualified professional archaeologist determines that the find does not represent a potential historical resource, and CAL FIRE concurs, then work may resume immediately, and no further action is required.
- If the culturally affiliated or consulting tribe(s) determines that the find does represent a tribal cultural resource, as defined in PRC Section 21074(a) though (c) of the CEQA Guidelines, DGS and CAL FIRE shall consult with the tribe on appropriate treatment measures. Work may not resume within the no-work radius until DGS and CAL FIRE, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, the construction supervisor shall ensure reasonable protection measures are taken to protect the discovery from disturbance (Assembly Bill [AB] 2641) and shall immediately notify DGS, CAL FIRE, and the El Dorado County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC within 24 hours. The NAHC will designate a Native American MLD for the discovery (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with El Dorado County (AB 2641). Work may not resume within the no-work radius until DGS and/or CAL FIRE, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

4.19 Utilities and Service Systems

4.19.1 Water Service

There is an existing four-inch domestic water service that is fed off the GDPUD six-inch water main located at the north end of the campus off Longview Lane. This existing water service is sufficient to service the campus improvements. All onsite domestic water distribution pipe will be replaced with new pipes to meet current health code requirements.

4.19.2 Wastewater

Currently, onsite wastewater is conveyed to a large septic tank located in the field/staging area near the southern edge of the open grass field on the Project Site. Wastewater is then conveyed to the onsite Sewage Treatment Plant and into the existing treatment ponds. There also exists a tank and pump north of the shop area to allow for storage in emergency situations.

It is proposed that existing wastewater pipelines be replaced with new PVC pipe (SDR26 or SDR35). New piping will be placed throughout the campus to service the buildings. The existing septic tank, Sewage Treatment Plant, and treatment ponds are proposed to remain as there are no apparent service issues.

4.19.3 Drainage

The Project Site would maintain existing grades. Generally, the site currently slopes from north to south. A network of new storm drain piping will connect storm drain inlets and subdrains throughout the Project Area to collect anticipated runoff. All roof drains will be hard piped to the storm drain system. It is proposed that the storm drains will connect to outfalls and drain across the natural grade to the south, similar to the current discharge patterns.

4.19.4 Electricity

PG&E will continue to provide electricity for the Project Site.

4.19.5 Natural Gas

Existing propane tanks serve the site and a new tank is proposed to serve the demand of the new buildings.

4.19.6 Solid Waste

Solid waste collection is provided by El Dorado Disposal.

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

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

Less than Significant Impact.

Project implementation will not result in a substantial increase in impervious surfaces on the site. A network of new storm drain piping will connect storm drain inlets and subdrains throughout the Project Area to collect anticipated runoff. Piped drainage will discharge at the south end of the project site where it will flow in a southwesterly direction through natural drainage channels before entering one of multiple existing culverts at the south end of Longview Lane in order to discharge under the road. Downstream of the culverts the runoff continues to flow off site through existing, natural drainage channels in a southerly direction.

GDPUD will continue to provide water service for the Proposed Project. The existing septic, storage tank, and treatment ponds will remain in their current condition and will not be altered as a part of the Proposed Project. The Project would not result in the construction or relocation of new utility infrastructure having significant environmental effects. Utilities serving the site will be upgraded as part of the Proposed Project, but there will be no relocation or expanded service. Therefore, a less than significant impact would occur. No mitigation is required.

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

Less than Significant Impact.

The Project Site requires a fire flow rate of 1,625 gpm for a 3-hour duration. As GDPUD can provide 544 gpm, an additional 1,081 gpm is required for three hours. This results in a storage amount of 194,580 gallons. In order to serve proper fire suppression, at minimum, it is recommended that two 100,000 gallon tanks be installed. However, the proposed project will be installing two 250,000 gallon tanks which is well above the minimum recommended. Additionally, the Proposed Project will continue to be served for domestic water by the GDPUD and will not require additional domestic water supply. A less than significant impact would occur. No mitigation is required.

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

Less than Significant Impact.

As stated above, onsite wastewater is conveyed to a large septic tank located in the field/staging area near the southern edge of the open grass field on the Project Site. Wastewater is then conveyed to the onsite Sewage Treatment Plant and into the existing treatment ponds. There also exists a tank and pump north of the shop area to allow for storage in emergency situations.

It is proposed that existing wastewater pipelines be replaced with new PVC pipe (SDR26 or SDR35). New piping will be placed throughout the campus to service the buildings. The existing septic, storage tank, and treatment ponds are proposed to remain as there are no service issues. A less than significant impact would occur. No mitigation is required.

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

Less than Significant Impact.

The Proposed Project is not anticipated to increase the amount of existing facility usage over existing conditions. The redevelopment of the site is intended to upgrade and bring the site to modern CAL FIRE standards. The Proposed Project will not increase the number of employees over the existing staff and, therefore, would not increase the amount of solid waste generated over the current generation rate and would have a less than significant impact in this area.

A temporary increase in waste would occur during construction-related activities and is not expected to exceed the capacity of local infrastructure/landfills and would not impair the attainment of solid waste reduction goals. The new facility is replacing an existing facility, and solid waste produced from operations and maintenance would be equivalent to the amount currently produced at the existing facility. No mitigation required.

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

Less than Significant Impact.

The disposal of solid waste due to construction activities will comply with all federal, state, and applicable local statues and regulations. Impacts to solid waste statues and regulations will be less than significant. No mitigation is required.

4.19.8 Mitigation Measures

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

4.20 Wildfire

4.20.1 Environmental Setting

The Project objective is to replace the facility with the construction of a new facility that would better accommodate the existing inmate population and would continue to provide fire protection and emergency-response service to the region. The Proposed Project is in a rural residential area surrounded by forests.

Generally, California fire season extends from spring to late fall. Fire conditions arise from a combination of hot weather, an accumulation of vegetation, and low moisture content in the air. These conditions, when combined with high winds and years of drought, increase the potential for wildfire to occur. CAL FIRE provides wildland fire protection services on private, non-federal lands for the purpose of life, property, and resource protection. The U.S. Forest Service provides wildland fire protection services on federal lands in Federal Responsibility Areas for watershed and resource protection. Some areas are also identified as Local Responsibility Areas.

According to the Draft Fire Hazard Severity Zones in State or Federal Responsibility Area map published by CAL FIRE, the Project Site is located in a very high fire hazards severity zone of state responsibility in El Dorado.

The Georgetown Fire Department provides fire protection support to the site and surrounding area.

4.20.2 Wildfire (XX) Environmental Checklist and Discussion

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

No Impact.

The Proposed Project is located in an area classified as very high fire hazard severity zones. However, the Proposed Project will not impair an adopted emergency response plan or emergency evacuation plan. Additionally, the Camp's inmates are used as hand crews for fighting wild land fires. Additionally, it will not impair any adopted emergency response plans. No impact would occur.

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

Less than Significant Impact.

As stated above, the Proposed Project is located in an area classified as very high fire hazard severity zones. However, the Propose Project is a conservation camp that houses more than 130 inmates that are trained and used as hand crews for fighting wild land fires. The Project will not change the slope of the terrain and would be replacing older structures with new modern construction materials that have a lower fire risk. A less then significant impact would occur, and no mitigation is required.

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

Less than Significant Impact.

The Proposed Project is currently is use as a conservation camp and the Project is intended to upgrade the existing facility to improve public safety, including an improved fire suppression system onsite and improved ability to respond to wildfire incidents. The existing fire system at the facility is served by the existing domestic water system connection. It is proposed that a new fire system will be installed and fed from the 6-inch GDPUD water main on Longview Lane. A hydrant flow test was completed on February 12, 2021, and it yielded a flow rate of 544 gpm at 20 psi residual. The Project Site requires a fire flow rate of 1,625 gpm for a 3-hour duration. As GDPUD can provide 544 gpm, an additional 1,081gpm is required for three hours. This results in a storage amount of 194,580 gallons. At a minimum, it is recommended that two 100,000-gallon tanks be installed. However, the proposed project will be installing two 250,000 gallon tanks which is well above the minimum recommended.

A new onsite fire system will be installed to service the campus. This includes new hydrants and fire department connections to supply the fire sprinklers that are required in each building. The fire system will need to be supplied from a fire pump system to provide the required pressure and flow to adequately service the facility. Therefore, implementation of the Proposed Project would not increase the fire risks by reducing current safety and fire reduction measures on the Project Site. Implementation of the Proposed Project would not exacerbate fire risks and would, therefore, be a less then significant impact. No mitigation is required.

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

Less than Significant Impact.

The Proposed Project is located at the top of a ridge and is not likely subject to downstream flooding. Additionally, the Proposed Project would make improvements to the existing facility by rebuilding structures in the same location and with a similar footprint. The new buildings will be constructed using current fire reducing materials and methods. The site is operated by CAL FIRE and as explained above has implemented safety protocol and fire reducing measures. Construction of the facility would not create a new exposure or increase risks for fires and post-fire issues. Therefore, the Proposed Project would have a less then significant impact. No mitigation is required.

4.20.3 Mitigation Measures

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

4.21 Mandatory Findings of Significance

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

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

Less than Significant with Mitigation Incorporated.

As described in Section 4.4 *Biological Resources* of this document, biological resources on the site could be impacted by the Proposed Project. Mitigation Measures **PLANT-1, PLANT-2, BIRD-1, BAT-1,** and **OAK-1** would be implemented to ensure all potential impacts to sensitive species and their habitats, are mitigated to less than significant levels.

As indicated in Section 4.5 *Cultural Resources* and Section 4.18 *Tribal Cultural Resources*, the Proposed Project is expected to avoid direct impacts to known cultural and tribal resources. Further, implementation of Mitigation Measures **CUL-1** and **TCR-1** will ensure potential impacts to unknown cultural and tribal resources are reduced to less than significant levels. Should any cultural or tribal cultural resources or human remains be encountered during construction, all construction activities would be halted, and a professional archeologist consulted. Similarly, implementation of Mitigation Measure **GEO-1** would ensure potential impacts to unknown paleontological resources are mitigated to less than significant.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have impacts that are individually limited, but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐

Less than Significant With Mitigation Incorporated.

As described above, impacts to biological, cultural, and paleontological impacts will be reduced with implementation of listed mitigation measures. All other impacts were found to be less than significant (including traffic, air quality, noise and GHG). Therefore, cumulative would be less than significant.

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

Less than Significant Impact.

Potential impacts to human beings include increases in ambient noise during construction and increases in air emissions including PM (dust) during construction. These impacts were found to be temporary and less than significant. Implementation of the Project's Mitigation Monitoring Program will ensure compliance with related measures and would minimize impacts to the greatest extent feasible.

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APPENDIX A

Schematic Design Plans - Lionakis

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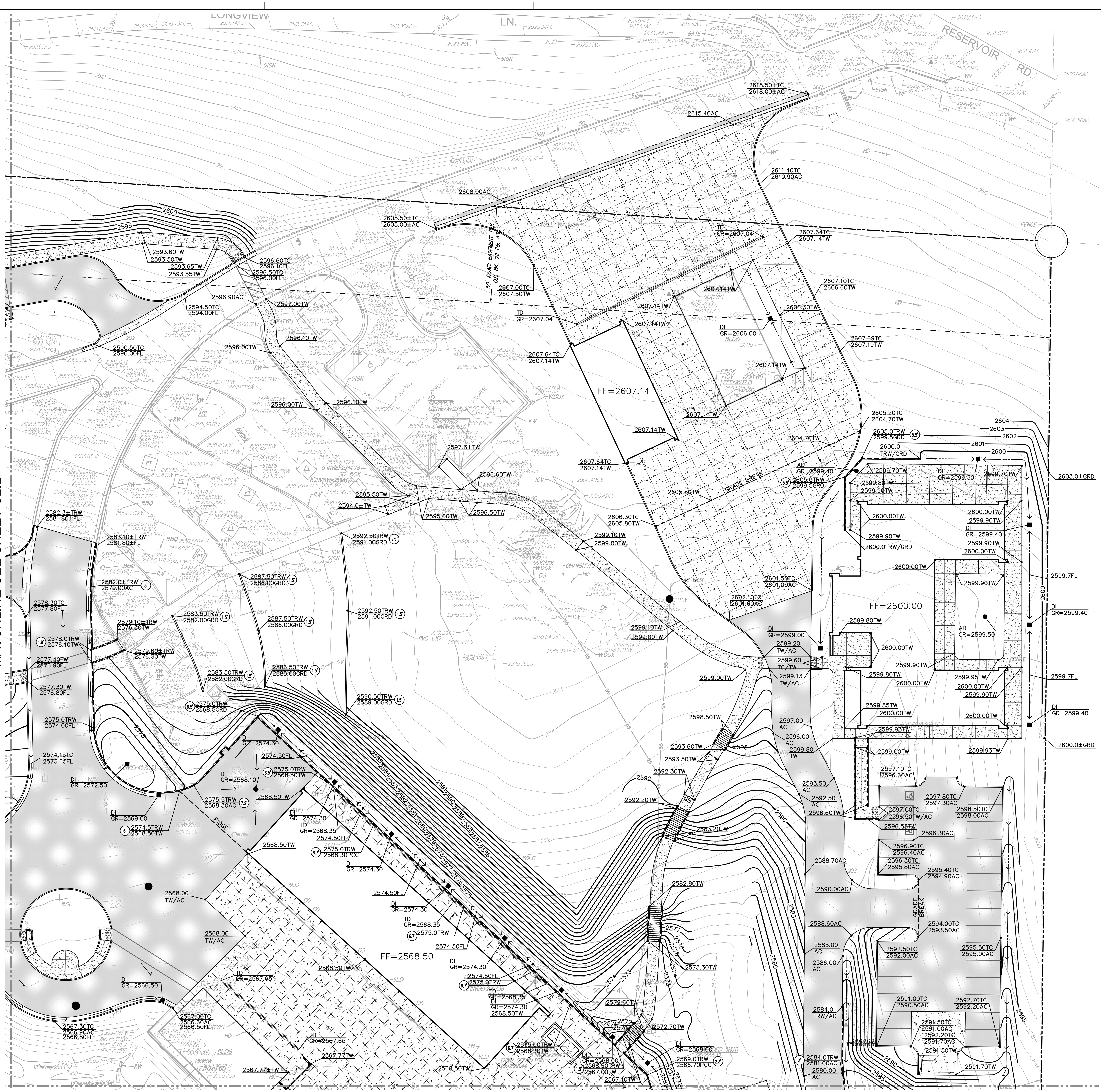

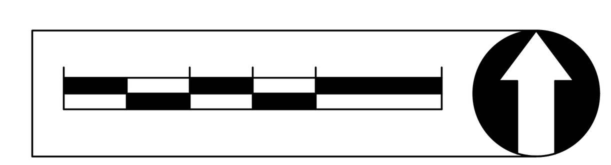

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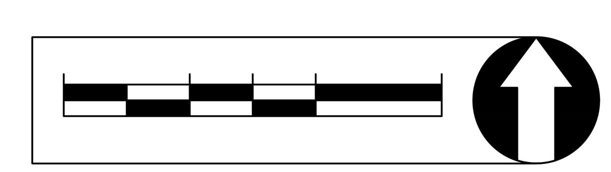

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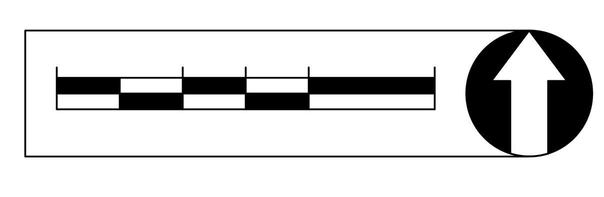

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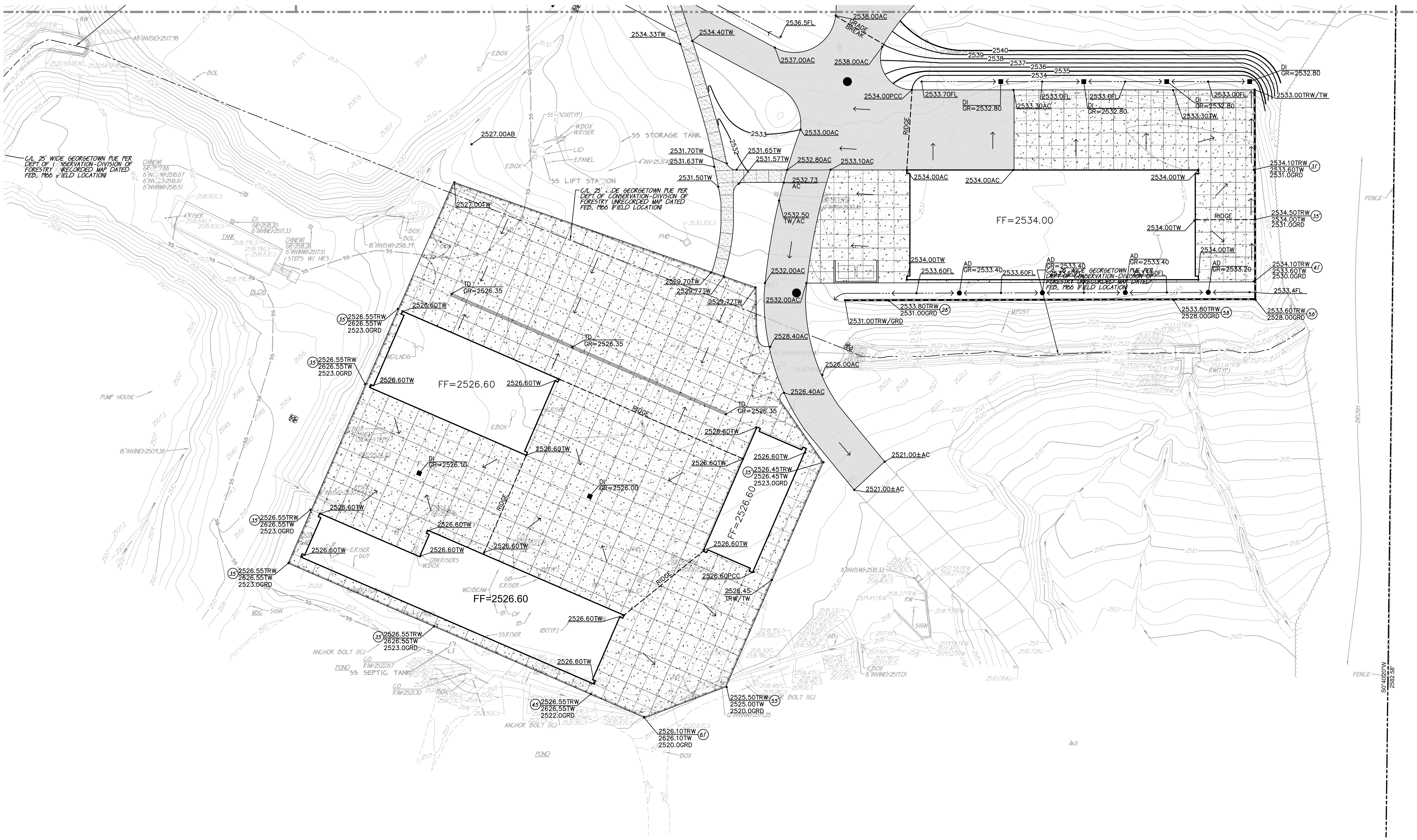

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APPENDIX B

Air Quality and Greenhouse Gas Emissions Assessment, Growlersburg Conservation Camp Replacement Project, ECORP Consulting, Inc. April 2021

Air Quality and Greenhouse Gas Emissions Assessment

Growlersburg Conservation Camp Replacement Project

El Dorado County, California

Prepared For:

CALIFORNIA DEPARTMENT OF GENERAL SERVICES

State of California Department of General Services
Real Estate Services Division
707 Third Street, Fourth Floor
West Sacramento, California 95605

April 2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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LIST OF ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
µg/m3	Micrograms per cubic meter; ppm = parts per million
1992 CO Plan	1992 Federal Attainment Plan for Carbon Monoxide
AB	Assembly Bill
AQMD	Air Quality Management District
BAAQMD	Bay Area Air Quality Management District
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	Methane
CO_2	Carbon dioxide

LIST OF ACRONYMS AND ABBREVIATIONS

CO_2e	Carbon dioxide equivalent
County	El Dorado County
DPM	Diesel particulate matter
EDCAQMD	El Dorado County Air Quality Management District
EO	Executive Order
GHG	Greenhouse gas
GWP	Global warming potential
HRA	Health Risk Assessment
IPCC	Intergovernmental Panel on Climate Change
MCAB	Mountain Counties Air Basin
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen dioxide
NO_x	Nitric oxides
O_3	Ozone
PM	Particulate matter
PM_{10}	Coarse particulate matter
$PM_{2.5}$	Fine particulate matter
ppb	Parts per billion
Project	Growlersburg Conservation Camp Replacement Project
ROGs	Reactive organic gases
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SF	Square Feet
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	Sulfur dioxide
SO_x	Sulfur oxides
SRA	State Response Area
TACs	Toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VOCs	Volatile organic compounds
VMT	Vehicle Miles Traveled

1.0 INTRODUCTION

This report documents the results of an air quality and greenhouse gas emissions assessment completed for the Growlersburg Conservation Camp Replacement Project (Project) on 80 acres and includes the demolition and replacement of 17 buildings totaling 82,819 square feet in Georgetown, California. This assessment was prepared using methodologies and assumptions recommended in the rules and regulations of the El Dorado County Air Quality Management District (EDCAQMD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations.

1.1 Project Location and Description

The Growlersburg Conservation Camp is Located on 80 acres of state-owned property, at 5540 Longview Lane in the unincorporated Community of Georgetown in the County of El Dorado (County), California. The camp is located approximately 15 miles north of Placerville and 20 miles south of Auburn. Georgetown is on the edge of the El Dorado National Forest, which consists of 786,994 acres of heavy brush and mixed conifer forests comprised of a checkerboard pattern of parcel ownership (Federal, State) intermixed with private parcels which are part of the State Response Area (SRA). The site is generally bound by Longview Lane to the north with single-family residences beyond; an access road to some waste water retention ponds (located south of and abutting to the Project site) traversing adjacent to and east of the Project site with a single-family residence and Reservoir Road beyond; open space wooded forestry land to the west with a scattering of single-family residences and various unpaved mountain roads beyond; and a wastewater retention pond to the south with a single-family residence and Longview Lane (which for the most part encircles the Project vicinity from Reservoir Road north of the site, meandering through the scattering of single-family residences surrounding the Project site, and returning back to Reservoir Road) beyond. To the west and south is an area of approximately the same size of private lands that are also SRA lands.

The proposed Project would be constructed on property currently controlled by CAL FIRE and an expansion area that is currently part of the camp property. Currently the camp has 14 permanent Cal Fire employees (1 Division Chief, 10 Fire Captains, 1 Office Tech, 1 Mechanic, and 1 Waste-Water Plant Operator), 12 permanent CDCR employees (1 Lieutenant, 2 Sergeants, 9 Officers) and up to 130 inmates.

The proposed Project consists of the replacement/upgrade of the existing Conservation Camp and associated facilities/structures. New facilities to be constructed would include an administration building, a 136-bed inmate dorm building, inmate recreation building, inmate hobby building, a 6-bed CDCR/CDF barracks building, inmate kitchen and mess hall, multipurpose facility, inmate staging area (with Restroom and showers), warehouse, carpentry shop, auto welding shop, vehicle storage building, sawmill shed, sawmill building, planer/assembly building (including dry kilns), pole barn, generator/pump/storage/building, covered vehicle rack, and vehicle wash recycling. The Project would be constructed on property currently controlled by CAL FIRE and an expansion area that is currently part of the camp property.

Existing buildings to be demolished and replaced are shown in Table 1 (square footage of existing buildings would be similar to the replacement building square footage).

Table 1-1. Proposed Replacement Facilities/Structures

Proposed Improved or New Structures	Square Feet
Building A – Administration / Multipurpose Building -The new building is designed with two wings: one wing with offices for Cal fire staffs and the other wing with offices for CDCR staffs. The building includes a lobby, conference room, a multipurpose room and a public restroom for visitors using the Program and visitation building.	5,601
Building B - Inmate Recreation and Hobby Barn Building - This new building is designed with a pool room, TV rooms, hobby workshop, finish room and an exercise room for the inmates. The building also includes a barber shop.	7,445
Building C – Mess Hall / Kitchen - This building is designed with a Dining room a kitchen, freezer, refrigerator, dry storage and Hot Storage.	8,824
Building D - Inmate Barracks - This is designed with a 136-bed dormitory. The building also has a laundry room, restroom and shower areas.	14,544
Building E – Sawmill Shed. This building is designed as an equipment storage room	1,592
Building F – Sawmill & Planer Assembly Building – This building is designed for sawing and planning of lumber. The building include office, storage room equipment room, material handling, a tools room and an assembly area.	4,756
Building G – Product Storage / Drying Building: This is designed as a storage and drying building. One side of the building is used for storing carpentry products, and the other side is used for drying wood products.	3,174
Building H – Carpentry Shop: This building is designed with assemblies, a hobby room, finish room, tool room and a storage room.	7,233
Building J1 – Fire Pump / Electrical Equipment Building: This building is designed with a pump house room on one side and an electrical equipment room on the other side.	732
Building J2 – Fuel Storage Shed: This building is designed as a fuel storage.	106
Building K – Staging Restroom: This building is designed as a multi-use restroom. The building also includes two small all gender restrooms and a laundry room.	1,280
Building L – Auto Shop: This building is designed with a 4-bay car garage. The building also includes a welding shop, saw shop, part storage, break room, an office and an all gender restroom.	7,445
Building M – Warehouse Building: This building is designed with two warehouse rooms, an equipment room, training room, office, office lockers and a fire equipment room.	7,304
Building N - Office Barracks: The new building is designed with two wings. Both wings have 6 bedrooms with two beds each wing. 4 bathrooms with one being accessible and one laundry room in each wing. The building also includes a living room, dining room, and kitchen.	7,030
Building O – 3-Bay Garage / Wash Rack: This building is designed with three wash bays.	2,919
Building P – Program / Visitation Building: This building is designed for inmate Program and visitation. Note restroom needs for this building are accommodated in the administration / Multipurpose building (see building A above).	884
Building Q – Mobile Kitchen Unit: This building is designed to store the Mobile Kitchen unit.	1,950

Other site improvements would include the following items:

- Two 250,000-gallon storage tanks for domestic water/fire suppression system and domestic booster pump
- Above ground fuel vault

- New propone tank
- New Radio Tower provided by Owner
- Grading and paving
- Underground domestic water lines, sanitary sewer, LPG distribution system, underground electrical, fire alarm, telephone/data, security, P/A system and radio feed.

2.0 AIR QUALITY

2.1 Air Quality Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, together with the current regulatory structure that applies to the Mountain Counties Air Basin (MCAB), in which the Project site is located, pursuant to the regulatory authority of the EDCAQMD. The EDCAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws.

2.1.1 *Mountain Counties Air Basin*

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The MCAB is over 11,000 square miles and is comprised of the following counties: Plumas, Sierra, Nevada, Placer (the middle portion), El Dorado (the western portion), Amador, Calaveras, Tuolumne, and Mariposa. Within the MCAB, the topography is variable; with extreme differences in altitude between the mountain peaks and valleys (EDCAQMD 2002).

Climate and Meteorology

Ambient air quality is commonly characterized by climatological conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that influence the potential for regional and local air pollutants. The following section describes pertinent characteristics of the MCAB and provides an overview of the physical conditions affecting pollutant dispersion in the Georgetown area.

The MCAB lies along the northern Sierra Nevada range, close to or contiguous with the Nevada border. The western slope of the County, from Lake Tahoe on the east to the Sacramento County boundary on the west, lies within the MCAB. Elevations range from over 10,000 feet at the Sierra crest down to several hundred feet above sea level at the Sacramento County boundary. Throughout El Dorado County, the topography is highly variable and includes rugged mountain peaks and valleys with extreme slopes and differences in altitude in the Sierras, as well as rolling foothills to the west. The general climate of the MCAB varies considerably with elevation and proximity to the Sierra ridge. In the western foothills of El Dorado County, where the Project is located, winter temperatures usually dip below freezing only at night, and precipitation is mixed as rain or light snow. In the summer, temperatures can routinely exceed 100 degrees Fahrenheit.

From an air quality perspective, the topography and meteorology of the MCAB combine such that local conditions predominate in determining the effect of emissions in the basin. Regional airflows are affected by the mountains and hills, which direct surface airflows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Inversion layers, where warm air overlays cooler air, frequently occur and trap pollutants close to the ground. During summer's longer daylight hours, stagnant air, high temperatures, an abundance of sunshine provides the conditions and energy for the photochemical reaction between reactive organic gases (ROG) and oxides of nitrogen that results in the formation of ozone. In the summer, the strong upwind valley air flowing into the basin from the Central Valley to the west is an effective transport medium for O_3 precursors and O_3 generated in the Bay Area and the Sacramento and San Joaquin valleys. These transported pollutants predominate as the cause of ozone in the MCAB and are largely responsible for the exceedances of the state and federal O_3 ambient air quality standards in the MCAB (EDCAQMD 2002).

2.1.2 *Criteria Air Pollutants*

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. O_3, PM_{10}, and $PM_{2.5}$ are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.s Summary of Common Sources and Effects

Table 2-1. Criteria Air Pollutants Summary of Common Sources and Effects

Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

2.1.3 *Carbon Monoxide*

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the MCAB are in compliance with the state and federal one- and eight-hour standards.

2.1.4 *Nitrogen Oxides*

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NO_X). Motor vehicle emissions are the main source of NO_X in urban areas. NO_X is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_X increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_X, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

2.1.5 *Ozone*

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROGs and NO_X undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. NO_X forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

2.1.6 *Particulate Matter*

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and smaller than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_X, sulfur oxides (SOx) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.7 *Toxic Air Contaminants*

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's $PM_{2.5}$ air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Diesel Exhaust

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.8 *Ambient Air Quality*

Ambient air quality in western El Dorado County can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains over 60 monitoring stations throughout California. The Cool-Highway 193 (1400 American River Trail in the town of Cool, CA 95614) seasonal air quality monitoring station, located approximately 7 miles west of the Project site, is the closest station and monitors ambient concentrations of O_3. Concentrations of PM_{10} were obtained from the Roseville-N Sunrise Boulevard monitoring station (151 N Sunrise Avenue Roseville, CA 95661) located approximately 23.75 miles southwest of the Project site. The Colfax-City Hall (33 South Main Street Colfax, CA 95713) monitoring station, located 14.15 miles north of the Project site, monitors ambient concentrations of $PM_{2.5}$. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations within the Project Area. Table 2-2 summarizes the published data concerning O_3, PM_{10} and $PM_{2.5}$ since 2017 from the Cool-Highway 193, Roseville-N Sunrise Boulevard, and Colfax-City Hall monitoring stations for each year that the monitoring data is provided.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Standards	2017	2018	2019
Ozone (O_3) (Cool-Highway 193 Air Quality Monitoring Station)			
Max 1-hour concentration (ppm)	0.11	0.12	0.09
Max 8-hour concentration (ppm) (state/federal)	0.09 / 0.08	0.11 / 0.11	0.08 / 0.08
Number of days above state 1-hr standard	4	*13*	*0*
Number of days above state/federal 8-hour standard	28 / 28	26 / 26	4 / 3
Coarse Particulate Matter (PM_{10}) (Roseville-N Sunrise Boulevard Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m3) (state/federal)	65.80 / 66.00	211.30 / 202.2	63.10 / 61.3
Number of days above state/federal standard	* / 0	* / 2	2 / *
Fine Particulate Matter ($PM_{2.5}$) (Colfax-City Hall Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m3) (state/federal)	48.80 / *	87.10 / *	20.60 / *
Number of days above federal standard	*	*	*

Source: CARB 2020a
µg/m3 = micrograms per cubic meter; ppm = parts per million
* = Insufficient data available

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10} and $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the El Dorado County portion of the MCAB is included in Table 2-3.

Table 2-3. Attainment Status for the El Dorado County Portion of the Mountain Counties Air Basin

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Unclassified	Nonattainment
CO	Unclassified	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2019

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3 and PM_{10} standards (CARB 2019).

2.2 Regulatory Framework

2.2.1 *Federal*

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide (CO_2) is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the MCAB for the criteria pollutants.

2.2.2 *State*

California Clean Air Act

The California Clean Air Act (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. SIP revisions to the EPA for approval and publication in the Federal Register.

As previously stated, the region is nonattainment for federal O_3 and $PM_{2.5}$ standards. Air districts regulating air quality in federal nonattainment areas are required, pursuant to the CAA, to prepare and submit a SIP, describing a strategy for the means to attain air quality standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs. The *2017 Sacramento Regional 2008 8-Hour Ozone Attainment and Further Reasonable Progress Plan* (including 2018 updates) and 2013 *$PM_{2.5}$ Implementation /Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area* have been prepared by the air districts in the greater Sacramento region, including the EDCAQMD, in compliance with Clean Air Act requirements.

The *Sacramento Regional 8-Hour Ozone Reasonable Further Progress Plan* (2018) includes the information and analyses to fulfill Clean Air Act requirements for demonstrating reasonable further progress toward attaining the 8-hour ozone NAAQS for the region. In addition, this plan establishes an updated emissions inventory and maintains existing motor vehicle emission budgets for transportation conformity purposes. The *$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area* (2013) attempts to fulfill requirements to re-designate the region from nonattainment to attainment of the $PM_{2.5}$ NAAQS.

Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.3 *Local*

2.2.4 *El Dorado County Air Quality Management District*

In addition to the aforementioned regional Air Quality Attainment Plans prepared by the air districts in the greater Sacramento region, the EDCAQMD has adopted rules and regulations as a means of implementing the air quality plans for the County. Additionally, EDCAQMD has also prepared the *Guide to Air Quality Assessment*, which provides quantitative emission thresholds and established protocols for the analysis of air quality impacts from projects and plans. The *Guide to Air Quality Assessment* outlines quantitative and qualitative significance criteria, methodologies for the estimation of construction and operational emissions, and mitigation measures to reduce significant impacts (EDCAQMD 2002).

The EDCAQMD rules applicable to the proposed Project include the following:

Rule 205 – Nuisance. This rule prohibits the discharge from any source such as quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property.

Rule 215 – Architectural Coatings. This rule requires manufacturers, distributors, and users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings by placing limits on the VOC content of various coating categories.

Rule 223 – Fugitive Dust. This rule governs the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. It applies to any construction or construction related activities including but not limited to, land clearing, grubbing, scraping, travel on site, and travel on access roads.

Rule 223-1 – Fugitive Dust – Construction. This rule requires a Fugitive Dust Control Plan be submitted to the Air Pollution Control Officer prior to the start of any construction activity for which a grading permit was issued by the County.

Rule 223-2 – Fugitive Dust – Asbestos Hazard Mitigation. This rule reduces the amount of asbestos PM that may be released as a result from construction related activities through the use of required actions or mitigation.

Rule 224 – Cutback and Emulsified Asphalt Paving Materials. This rule governs the use of asphalt and limits the VOC content in asphalt.

Rule 610 – Land Development Fees. To establish fees to recover the cost to the District of work related to land development, including but not limited to, fees associated with a Fugitive Dust Plan Review.

In addition, there are other EDCAQMD rules and regulations, not detailed here, which may apply to the proposed Project but are administrative or descriptive in nature. These include rules associated with fees, enforcement and penalty actions, and variance procedures.

2.2.5 *El Dorado General Plan*

The following are applicable goals and policies from the Public Health, Safety, and Noise Element of the General Plan (County of El Dorado 2019), which was updated in August 2019. The most recent goals and policies are listed below:

Goal 6.7: ***Air Quality Maintenance*** *– Strive to achieve and maintain ambient air quality standards established by the USEPA and CARB and minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.*

Policy 6.7.7.1: The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the EDCAQMD *Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act*, to analyze potential air quality impacts (e.g., short-term construction, long-term operations, toxic and odor-related emissions) and to require feasible mitigation requirements for such impacts. The County shall also consider any new information or technology that becomes available prior to periodic updates of the Guide. The County shall encourage actions (e.g., use of light-colored roofs and retention of trees) to help mitigate heat island effects on air quality.

2.3 Air Quality Emissions Impact Assessment

2.3.1 *Thresholds of Significance*

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.
2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
3) Expose sensitive receptors to substantial pollutant concentrations.
4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

The significance criteria established by the applicable air quality management or air pollution control district (EDCAQMD) may be relied upon to make the above determinations. The EDCAQMD Guide to Air Quality Assessment has identified significance thresholds for use in evaluating Project impacts under CEQA. Accordingly, the EDCAQMD-recommended thresholds of significance are used to determine whether implementation of the proposed Project would result in a significant air quality impact. Significance thresholds for evaluating construction and operational air quality impacts are listed in Table 2-4.

Table 2-4. EDCAQMD Significance Thresholds

Criteria Pollutant and Precursors	Construction Activities	Operations
	Maximum Pollutants (Maximum Pounds Per Day)	
ROG	82	82
NO_X	82	82

Source: EDCAQMD 2002

A project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for O_3, which is a nonattainment pollutant, if the Project's construction or operational emissions would exceed the EDCAQMD ROG or NO_X thresholds shown in Table 2-4. These emission-based thresholds for O_3 precursors are intended to serve as a surrogate for an "O_3 significance threshold" (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly, and the effects of an individual project's emissions of O_3 precursors (ROG and NO_X) on O_3 levels in ambient air cannot be reliably and meaningfully determined through air quality models or other quantitative methods. According to the EDCAQMD, if ROG and NO_X are less than significant during construction, then CO and PM_{10} would also be less than significant. During operations, if ROG and NO_X are less than significant, then CO, SO_2, and PM_{10} would also be less than significant.

2.3.2 *Methodology*

Air quality impacts were assessed in accordance with methodologies recommended by the EDCAQMD. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for El Dorado County.

Operational air pollutant emissions were based on the Project site plans and the CalEEMod default traffic trip generation rates for El Dorado County. For the purposes of this analysis, projected operational emissions associated with proposed operations are compared to the existing baseline, which includes more than 80,000 square feet of building and shed space.

2.3.3 *Construction-Generated Criteria Air Pollutant Emissions*

Construction associated with the Proposed Project would generate short-term emissions of criteria air pollutants, including ROG, CO, NO_X, PM_{10}, and $PM_{2.5}$. The largest amount of ROG, CO, and NO_X emissions would occur during the earthwork phase. PM_{10} and $PM_{2.5}$ emissions would occur from fugitive dust (due to earthwork and excavation) and from construction equipment exhaust. Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the Project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact.

All developments are subject to EDCAQMD rules and regulations in effect at the time of construction. As previously discussed, Rule 215 (Architectural Coatings) defines the quantities of ROG in paint permitted for use in new construction. Rule 223 (Fugitive Dust-General) limits man-made fugitive dust to the property line of the construction site. Rule 223-1 requires that a Fugitive Dust Control Plan be prepared and submitted to the EDCAQMD prior to ground-disturbing activities. Rule 224 (Cutback and Emulsified Asphalt) defines the types of cutback and emulsified asphalts permitted for use in the County. Under Rule 610 (Land Development Fees), the EDCAQMD would charge a fee to review the Fugitive Dust Control Plan required by Rule 223-1.

As stated previously, the EDCAQMD has adopted guidelines for determining potential adverse effects to air quality in the region. The EDCAQMD guidelines state that construction activities are considered a potentially significant adverse impact if such activities generate total emissions in excess of EDCAQMD established thresholds. According to the Guide to Air Quality Assessment, if identified ROG and NO_X emissions are under the construction emissions threshold of 82 pounds generated per day, and thus considered less than significant, then emissions of CO and PM would also be considered less than significant.

Table 2-5 illustrates the specific construction-related criteria and precursor emissions that would result from construction of the Proposed Project and compares them to the EDCAQMD's significance thresholds.

2.3.4 *Construction-Related Emissions*

Table 2-5. Construction-Related Emissions

Construction Year	Maximum Pollutants (Maximum Pounds Per Day)					
	ROG	NOX	CO	SO_2	PM_{10}	PM2.5
Year One Construction (2022)	13.17	44.93	53.48	0.12	19.91	11.48
Year Two Construction (2023)	12.76	40.63	52.11	0.11	5.98	2.78
EDCAQMD Potentially Significant Impact Threshold	*82*	*82*	—	—	—	—
Exceed EDCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Emissions taken from summer or winter, whichever is higher.

As demonstrated in Table 2-5, Project construction would not result in an exceedance of EDCAQMD thresholds for daily air pollutant emissions during construction activities, and no health effects from Project criteria pollutants would occur.

2.3.5 *Operational Criteria Air Pollutant Emissions*

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

The Project proposes the replacement of several existing buildings located on the Growlersburg facility with new and more modern buildings. The Project would include the demolition and replacement of 17 buildings totaling 82,819 square feet. New facilities to be constructed would include an administration/ multipurpose building, inmate recreation and hobby building, mess hall/ kitchen, 136-bed inmate barracks, sawmill shed, sawmill and planer assembly building, storage and drying building, carpentry shop, fire pump and electrical equipment building, fuel storage shed, staging restroom, auto shop, warehouse building, office barracks, 3-bay garage and wash rack building, Program/ visitation building, and a mobile kitchen unit storage building. The proposed Project would also include the installation of 250,000-gallon storage tanks for a domestic water/fire suppression system, above ground fuel vault, propane tank, radio tower, grading and paving, underground water/sewage/electrical lines, and various fire, phone, data and P/A systems. For the purposes of this analysis, projected operational emissions associated with proposed operations are compared to the existing baseline, which includes the approximately 82,819-square feet of existing facility buildings.

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as O_3 precursors such as ROG and NO_X. Project-generated increases in emissions would be predominantly associated with area sources. Table 2-6 summarizes operational emissions from the Proposed Project.

The EDCAQMD has adopted guidelines for determining potential adverse effects to air quality in the region. The EDCAQMD guidelines state that operational activities are considered potentially significant if such activities generate total emissions in excess of EDCAQMD established thresholds. As mentioned above, according to the Guide to Air Quality Assessment, if identified ROG and NO_X emissions are under the operation emissions threshold of 82 pounds generated per day, and thus considered less than significant, then emissions of CO and PM would also be considered less than significant.

Table 2-6 illustrates the maximum daily operations-related criteria and precursor emissions that would result from operation of the Project.

Table 2-6. Operations-Related Criteria Pollutant and Precursor Emissions

Operational Activities	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Baseline Emissions – Pounds per Day (Maximum)						
Area	107.36	2.07	131.40	0.23	18.17	18.17
Energy	0.04	0.38	0.31	0.00	0.03	0.03
Mobile	0.11	0.32	1.30	0.00	0.41	0.11
Total	**107.45**	**2.6**	**132.31**	**0.23**	**18.39**	**18.25**
Project Operational Emissions – Pounds per Day (Maximum)						
Area	4.20	0.90	17.6	0.05	2.58	2.58
Energy	0.04	0.36	0.29	0.00	0.03	0.03
Mobile	0.11	0.32	1.30	0.00	0.41	0.11
Total	**4.29**	**1.4**	**18.5**	**0.06**	**2.8**	**2.66**
EDCAQMD Significance Threshold	*80*	*80*	-	-	-	-
Exceed EDCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Emissions Reduction from Baseline – Pounds per Day (Maximum)						
Area	-103.16	-1.17	-113.8	-0.18	-15.59	-15.59
Energy	0.00	-0.02	-0.02	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00
Total	**-103.16**	**-1.20**	**-113.81**	**-0.17**	**-15.59**	**-15.59**
EDCAQMD Significance Threshold	*80*	*80*	-	-	-	-
Exceed EDCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.1. See Attachment A for emission model outputs. Emissions taken from Summer or Winter, whichever is higher

As shown in Table 2-6, emissions from the proposed new building operations are substantially lower than the emissions being generated by the existing buildings onsite, which are proposed for replacement.

Further, Project emissions would not exceed EDCAQMD significance thresholds for operational air pollutant emissions.

Conflict with the EDCAQMD Air Quality Attainment Plans

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the NAAQS and CAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The EDCAQMD, in collaboration with all other air districts in the greater Sacramento region, prepared the *2017 Sacramento Regional 2008 8-Hour Ozone Attainment and Further Reasonable Progress Plan* (including 2018 updates) and 2013 *$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area*. These plans collectively address the air basin's nonattainment status of the national O_3 and $PM_{2.5}$ standards by establishing a program of rules and regulations directed at reducing air pollutant emissions and achieving national air quality standards. Pollutant control strategies are based on the latest scientific and technical information and planning assumptions, updated emission inventory methodologies for various source categories, and the latest population growth projections and associated vehicle miles traveled projections for the region. The region's latest population growth forecasts were defined in consultation with local governments and with reference to local General Plans. The Project must comply with all applicable rules for construction and operation, and as such would be consistent with the emission-reduction goals of the Attainment Plans.

The Project is proposing the demolition of existing facility buildings, and the reconstruction of those buildings to house and support the existing staff and inmate population. The Project thus is consistent with the County General Plan land use designation as there are no proposed changes in land uses, and therefore would not exceed the population or job growth projections used by the EDCAQMD to develop its air quality attainment plans. Additionally, as shown in Table 2-5 and Table 2-6 above, both Project construction and Project operations would not generate emissions that would exceed EDCAQMD significance thresholds, which were established to achieve national air quality standards.

Thus, the Project would be consistent with the emission-reduction goals of the ECDAQMD Attainment Plans.

Exposure of Sensitive Receptors to Toxic Air Contaminants

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project site are a scattering of single-family residences, with the closest located 92 feet east of the Project site boundary.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Project-generated emissions of DPM, ROG, NO_X, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the MCAB which encompasses the Project site is designated as a nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3 and PM_{10} standards (CARB 2018). Thus, existing O_3, PM_{10}, and $PM_{2.5}$ levels in the MCAB are at unhealthy levels during certain periods. However, as shown in Table 2-5, the Project would not exceed the EDCAQMD construction emission thresholds, which were established to protect the public health and welfare.

The health effects associated with O_3 are generally associated with reduced lung function. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NO_X) in excess of the EDCAQMD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

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

PM_{10} and $PM_{2.5}$ contain microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. PM exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary toxic air contaminant (TAC) of concern. The potential cancer risk from the inhalation of DPM outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs. Based on the emission modeling conducted, the maximum onsite construction-related daily emissions of exhaust PM_{10}, considered a surrogate for DPM and includes emissions of exhaust $PM_{2.5}$, would be 1.99 and 1.77 pounds per day in construction years 2022 and 2023, respectively (see Attachment A). PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM . As with O_3 and NO_X, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the EDCAQMD's thresholds. Additionally, the Project would be required to comply with Rule 223 and Rule 223-1 for fugitive dust control, as described above, which limit the amount of fugitive dust generated during construction. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the Project would not result in a potentially significant contribution to regional or localized concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Operational Air Contaminants

Operation of the proposed Project would not result in the development of any substantial sources of new air toxics. As mentioned above, the Project proposes the demolition and replacement of several existing buildings, therefore there are no new stationary sources associated with the operations of the Project; nor would the Project attract additional heavy-duty trucks that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors. The maximum operation-related emissions of exhaust PM_{10}, considered a surrogate for DPM, would be 2.61 pounds per day, produced by the estimated 52 Project-generated vehicle trips per day. The majority of these emissions would be generated offsite. Therefore, the Project would not be a source of TACs and there would be no impact as a result of the Project during operations. The Project would not have a high carcinogenic or non-carcinogenic risk during operation.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. In 1993, much of the state was designated nonattainment under the CAAQS and NAAQS for CO. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration across the entire state is now designated as attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

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

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

52 trips are anticipated to be generated per day from the 14 CalFire and 12 CDCR employees, the same amount as current conditions. Thus, the proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day); there is no likelihood of the Project traffic exceeding CO values.

Odors

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

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

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

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The proposed Project does not include any uses considered to be associated with odors.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO_2, CH_4, and N_2O. Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years.[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: [1]USEPA 2016a, [2]USEPA 2016b, [3]USEPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 *Sources of Greenhouse Gas Emissions*

In 2020, CARB released the 2020 edition of the California GHG inventory covering calendar year 2018 emissions. In 2018, California emitted 425.3 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of

California's GHG emissions in 2018, accounting for approximately 30 percent of total GHG emissions in the state. This sector was followed by the industrial sector (21 percent) and the electric power sector including both in-state and out-of-state sources (15 percent) (CARB 2020b). Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. Carbon dioxide sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

3.2 Regulatory Framework

3.2.1 *State*

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlines measures to meet the 2020 GHG reduction goals. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by the end of 2020.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by Senate Bill (SB) 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of CH_4 emissions from agricultural and other wastes.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030.

Senate Bill X1-2 of 2011, Senate Bill 350 of 2015, and Senate Bill 100 of 2018

In 2018, SB 100 was signed codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The 2019 standards are a major step toward meeting Zero Net Energy. The most significant efficiency improvement to the residential Standards include the introduction of photovoltaic into the perspective package, improvements for attics, walls, water heating and lighting. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards.

3.2.2 *Local*

Sacramento Area Council of Governments

The Sacramento Area Council of Governments' (SACOG's) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) 2020 is the latest update of a long-range policy and planning program that establishes GHG emissions goals for the year 2035. CARB assigned SACOG a 19 percent GHG reduction target from 2005 levels by 2035. The GHG reduction target is the percent reduction in passenger vehicle GHG emission per capita, compared to year 2005. This change represents a reduction from just over 23 pounds per capita on a given weekday in 2005, to just under 19 pounds by 2035 (SACOG 2020).

El Dorado County Code

Section 8.43.010 of the County code requires the owners/builder of construction projects to divert (recycle) 65 percent of generated construction waste materials generated during the Project. Waste from construction, demolition, and renovation of buildings and structures represents a significant portion of the volume of waste stream generated within the County and much of this waste is particularly suitable for recycling and reuse. This requirement greatly reduces the generation of GHG emissions by reducing decomposition at landfills, which is a source of CH_4, and reducing demand for natural resources.

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 *Thresholds of Significance*

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to GHG emissions if it would:

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

The Appendix G thresholds for GHG's do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines § 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 California Code of Regulations [CCR] 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

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

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

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

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The EDCAQMD has not adopted a GHG significance threshold. As previously described, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). Thus, in the absence of any GHG emissions significance thresholds the projected emissions are compared to the GHG thresholds recommended by the Sacramento Metropolitan Air Quality Management District (SMAQMD), the air pollution control officer for Sacramento County. The SMAQMD thresholds of 1,100 metric tons of CO_2e annually for construction and 1,100 metric tons of CO_2e annually during operations are considered appropriate for the purposes of this analysis due to the proximities of Sacramento and El Dorado counties and the similarities between both geomorphic and urban patterns of the two neighboring air district jurisdictions. Therefore, the threshold used to analyze the Project is specific to the analysis herein and the lead agency retains the ability to develop and/or use different thresholds of significance for other projects in its capacity as lead agency and recognizing the need for the individual threshold to be tailored and specific to individual projects.

In Center for Biological Diversity v. Department of Fish and Wildlife (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the state that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

3.3.2 *Methodology*

Where GHG quantification was required, emissions were modeled using CalEEMod version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction-generated GHG emissions were primarily calculated using CalEEMod model defaults. Operational GHG emissions were modeled with CalEEMod based on the Project site plans and CalEEMod model defaults for El Dorado County. For the purposes of this analysis, projected operational emissions associated with proposed Project operations are compared to the existing baseline, which includes more than 80,000 square feet of building and shed space.

3.3.3 *Impact Analysis*

Contribution of Greenhouse Gas Emissions

Construction

Construction-related activities that would generate GHGs include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction-generated GHG emissions that would result from construction of the Project.

Table 3-2. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/Year)
Construction 2022	**955**
Construction 2023	**900**
Potentially Significant Impact Threshold	*1,100*
Exceed Significance Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment B for Model Data Outputs.
Notes: Building construction, paving, and architectural coating assumed to occur simultaneously.

As shown in Table 3-2, Project construction would not result in the exceedance of 1,100 metric tons of CO_2e during any year of construction. Once construction is complete, the generation of these GHG emissions would cease.

Furthermore, GHG emissions generated by the construction sector have been declining in recent years. For instance, construction equipment engine efficiency has continued to improve year after year. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower (hp) and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the USEPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the USEPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 hp and increasingly more stringent Tier 2 and Tier 3 standards for all equipment with phase-in schedules from 2000 to 2008. As a result, all off-road, diesel-fueled construction equipment manufactured in 2006 or later has been manufactured to Tier 3 standards. Tier 3 engine standards reduce precursor and subset GHG emissions such as nitrogen oxide by as much as 60 percent. On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which were phased in over the period of 2008-2015. The Tier 4 standards require that emissions of nitrogen oxide be further reduced by about 90 percent. All off-road, diesel-fueled construction equipment manufactured in 2015 or later will be manufactured to Tier 4 standards.

In addition, the California Energy Commission recently released the 2019 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code). The 2019 updates to the Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions, and alterations to existing buildings. For instance (and as previously stated), effective January 1, 2017, owners/builders of construction projects have been required to divert (recycle) 65 percent of construction waste materials generated during the project construction phase. This requirement greatly reduces the generation of GHG emissions by reducing decomposition at landfills, which is a source of CH_4, and reducing demand for natural resources.

Operations

Operation of the Project would result in a decrease in the amount of GHG emissions currently emitted under current operations. Table 3-3 summarizes all the direct and indirect annual GHG emissions associated with the Project in comparison to existing conditions.

Table 3-3. Operational Greenhouse Gas Emissions

Emission Source	CO_2e (Metric Tons/Year)
Proposed Project Operational Emissions	
Area	46
Energy	210
Mobile	67
Waste	103
Water	30
Total Baseline Emissions	**456**

Table 3-3. Operational Greenhouse Gas Emissions

Emission Source	CO_2e (Metric Tons/Year)
Existing Baseline Emissions	
Area	104
Energy	245
Mobile	67
Waste	103
Water	37
Total Project Emissions	**556**
Emissions Reduction from Baseline	
Area	-58
Energy	-35
Mobile	0
Waste	0
Water	-7
Total Reduced Emissions	**-128**
Potentially Significant Impact Threshold	*1,100*
Exceed Significance Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment B for Model Data Outputs.

As shown in Table 3-3, Project operations would result in a decrease of approximately 128 metric tons of CO_2e annually compared with existing conditions and would not exceed 1,100 metric tons annually.

Conflict with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The County does not currently have an adopted plan for the purpose of reducing GHG emissions. However, as previously described, the State of California promulgates several mandates and goals to reduce statewide GHG emissions, including the goal to reduce statewide GHG emissions to 40 percent below 1990 levels by the year 2030 (SB 32). As previously shown, Project generated GHG emissions would not exceed GHG significance thresholds, which were prepared with the purpose of complying with statewide GHG emission reduction goals. In addition, the Project would not conflict with the MTP/SCS or the County's General Plan, as shown.

2020 Metropolitan Transportation Plan/ Sustainable Communities Strategy

SACOG adopted the 2020 Metropolitan Transportation Plan/ Sustainable Communities Strategy (MTP/SCS) in 2019. The MTP/ SCS sets the GHG reduction goal of 19 percent below 2005 levels by 2035. Land use information is generally utilized to inform long-range planning documents, including the MTP/ SCS. If a given project is consistent with the land use designation, the project is generally consistent with the MTP/SCS GHG emission projections and would not increase emissions beyond what is anticipated in the MTP/SCS, or inhibit the County from reaching its reduction targets. The proposed Project is consistent with the existing land use designation of the Conservation Camp facility and is not proposing any changes to land use designations. Further, while the proposed Project would generate GHG emissions, those emissions would be less than the baseline existing conditions resulting in a decrease of emissions due to the proposed modernization of outdated facilities. Since the Project would result in a decrease of GHG emissions compared with existing conditions, the Project would not obstruct the achievement of the MTP/SCS emission reduction targets.

El Dorado County General Plan

The Project is consistent with the Land Use Element of the General Plan. As discussed previously, the Project proposes the demolition and replacement of existing buildings, with no land use changes or additional staffing or inmate population increases proposed. Therefore, the Project is consistent with this General Plan land use designation and would not exceed the population or job growth projections used by the EDCAQMD to develop its air quality attainment plans.

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LIST OF ATTACHMENTS

ATTACHMENT A

CalEEMod Output Files – Criteria Air Pollutant Emissions

Growlersberg Conservation Camp Replacement Project Existing Conditions

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.60	1000sqft	0.13	5,601.00	0
General Office Building	0.88	1000sqft	0.02	884.00	0
General Light Industry	4.76	1000sqft	0.11	4,760.00	0
General Light Industry	7.23	1000sqft	0.17	7,233.00	0
General Light Industry	7.45	1000sqft	0.17	7,445.00	0
Unrefrigerated Warehouse-No Rail	7.30	1000sqft	0.17	7,304.00	0
User Defined Industrial	2.92	User Defined Unit	0.07	2,920.00	0
User Defined Industrial	1.59	User Defined Unit	0.04	1,592.00	0
User Defined Industrial	3.17	User Defined Unit	0.07	3,174.00	0
User Defined Industrial	0.73	User Defined Unit	0.02	732.00	0
User Defined Industrial	0.11	User Defined Unit	0.00	106.00	0
User Defined Industrial	1.95	User Defined Unit	0.04	1,950.00	0
Parking Lot	70.00	Space	0.63	28,000.00	0
Health Club	7.45	1000sqft	0.17	7,445.00	0
High Turnover (Sit Down Restaurant)	8.82	1000sqft	0.20	8,824.00	0
Congregate Care (Assisted Living)	14.54	Dwelling Unit	0.91	14,544.00	136
Congregate Care (Assisted Living)	1.28	Dwelling Unit	0.08	1,280.00	4
Congregate Care (Assisted Living)	7.03	Dwelling Unit	0.44	7,030.00	24

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - General Office Bld. = Blds. A, P; Health Club = Bld. B; Sit-down Rest. = Bld. C; Congregate Care = Blds. D, K, & N population based on # of beds; Warehouse = Blds. M; General Light Industrial = Bld. F, H, L; User Defined = E, G, J1, J2, O, Q

Construction Phase - Existing conditions model run only

Off-road Equipment - Existing conditions model run only

Trips and VMT - Existing Conditions model run

Demolition -

Architectural Coating - Existing conditions model run only

Vehicle Trips - Worker trips updated to match PD (14 CalFire employees and 12 CDCR employees)

Woodstoves -

Energy Use - Using historic data to show existing conditions, User defined industrial energy usage = 1/2 the energy use of general light industrial to show conservative energy useage for storage buildings.

Water And Wastewater -

Area Coating -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	29,985.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	89,955.00	0.00
tblArchitecturalCoating	ConstArea_Parking	1,680.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	15,426.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	46,279.00	0.00

tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblEnergyUse	LightingElect	0.00	0.57
tblEnergyUse	NT24E	0.00	0.46
tblEnergyUse	NT24NG	0.00	0.08
tblEnergyUse	T24E	0.00	0.21
tblEnergyUse	T24NG	0.00	0.92
tblLandUse	LandUseSquareFeet	880.00	884.00
tblLandUse	LandUseSquareFeet	5,600.00	5,601.00
tblLandUse	LandUseSquareFeet	7,230.00	7,233.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00
tblLandUse	LandUseSquareFeet	7,300.00	7,304.00
tblLandUse	LandUseSquareFeet	0.00	106.00
tblLandUse	LandUseSquareFeet	0.00	732.00
tblLandUse	LandUseSquareFeet	0.00	1,592.00
tblLandUse	LandUseSquareFeet	0.00	1,950.00
tblLandUse	LandUseSquareFeet	0.00	2,920.00
tblLandUse	LandUseSquareFeet	0.00	3,174.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00
tblLandUse	LandUseSquareFeet	8,820.00	8,824.00
tblLandUse	LandUseSquareFeet	14,540.00	14,544.00
tblLandUse	LotAcreage	0.00	0.02
tblLandUse	LotAcreage	0.00	0.04

tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	Population	42.00	136.00
tblLandUse	Population	20.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	11.00	0.00
tblVehicleTrips	ST_TR	2.20	2.28
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	2.44	2.28
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	2.74	2.28
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	107.3593	2.0705	131.3976	0.2347		18.1667	18.1667		18.1667	18.1667	1,903.4156	801.9876	2,705.4032	1.7564	0.1498	2,793.9498
Energy	0.0421	0.3813	0.3094	2.3000e-003		0.0291	0.0291		0.0291	0.0291		459.5911	459.5911	8.8100e-003	8.4300e-003	462.3222
Mobile	0.1084	0.3150	1.3037	4.3100e-003	0.4105	3.7200e-003	0.4142	0.1096	3.4700e-003	0.1131		432.6953	432.6953	0.0119		432.9914
Total	**107.5098**	**2.7669**	**133.0107**	**0.2413**	**0.4105**	**18.1996**	**18.6100**	**0.1096**	**18.1993**	**18.3090**	**1,903.4156**	**1,694.2739**	**3,597.6895**	**1.7770**	**0.1582**	**3,689.2634**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	107.3593	2.0705	131.3976	0.2347		18.1667	18.1667		18.1667	18.1667	1,903.4156	801.9876	2,705.4032	1.7564	0.1498	2,793.9498
Energy	0.0421	0.3813	0.3094	2.3000e-003		0.0291	0.0291		0.0291	0.0291		459.5911	459.5911	8.8100e-003	8.4300e-003	462.3222
Mobile	0.1084	0.3150	1.3037	4.3100e-003	0.4105	3.7200e-003	0.4142	0.1096	3.4700e-003	0.1131		432.6953	432.6953	0.0119		432.9914
Total	**107.5098**	**2.7669**	**133.0107**	**0.2413**	**0.4105**	**18.1996**	**18.6100**	**0.1096**	**18.1993**	**18.3090**	**1,903.4156**	**1,694.2739**	**3,597.6895**	**1.7770**	**0.1582**	**3,689.2634**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/1/2022	2/28/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.63

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1084	0.3150	1.3037	4.3100e-003	0.4105	3.7200e-003	0.4142	0.1096	3.4700e-003	0.1131		432.6953	432.6953	0.0119		432.9914
Unmitigated	0.1084	0.3150	1.3037	4.3100e-003	0.4105	3.7200e-003	0.4142	0.1096	3.4700e-003	0.1131		432.6953	432.6953	0.0119		432.9914

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	33.15	33.15	33.15	123,446	123,446
Congregate Care (Assisted Living)	2.92	2.92	2.92	10,867	10,867
Congregate Care (Assisted Living)	16.03	16.03	16.03	59,685	59,685
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Total	52.10	52.10	52.10	193,999	193,999

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Health Club	14.70	6.60	6.60	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	14.70	6.60	6.60	8.50	72.50	19.00	37	20	43
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Light Industry	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Health Club	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
High Turnover (Sit Down Restaurant)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Unrefrigerated Warehouse-No Rail	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
User Defined Industrial	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0421	0.3813	0.3094	2.3000e-003		0.0291	0.0291		0.0291	0.0291		459.5911	459.5911	8.8100e-003	8.4300e-003	462.3222
NaturalGas Unmitigated	0.0421	0.3813	0.3094	2.3000e-003		0.0291	0.0291		0.0291	0.0291		459.5911	459.5911	8.8100e-003	8.4300e-003	462.3222

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	15.9833	1.7000e-004	1.4700e-003	6.3000e-004	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.8804	1.8804	4.0000e-005	3.0000e-005	1.8916
Congregate Care (Assisted Living)	181.561	1.9600e-003	0.0167	7.1200e-003	1.1000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003		21.3601	21.3601	4.1000e-004	3.9000e-004	21.4870
Congregate Care (Assisted Living)	87.7835	9.5000e-004	8.0900e-003	3.4400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004		10.3275	10.3275	2.0000e-004	1.9000e-004	10.3888
General Light Industry	51.7732	5.6000e-004	5.0800e-003	4.2600e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.0910	6.0910	1.2000e-004	1.1000e-004	6.1272
General Light Industry	78.6713	8.5000e-004	7.7100e-003	6.4800e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004		9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
General Light Industry	80.9771	8.7000e-004	7.9400e-003	6.6700e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5267	9.5267	1.8000e-004	1.7000e-004	9.5833
General Office Building	374.73	4.0400e-003	0.0367	0.0309	2.2000e-004		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003		44.0859	44.0859	8.4000e-004	8.1000e-004	44.3479
General Office Building	59.1432	6.4000e-004	5.8000e-003	4.8700e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9580	6.9580	1.3000e-004	1.3000e-004	6.9994
Health Club	80.9771	8.7000e-004	7.9400e-003	6.6700e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5267	9.5267	1.8000e-004	1.7000e-004	9.5833
High Turnover (Sit Down Restaurant)	2866.23	0.0309	0.2810	0.2360	1.6900e-003		0.0214	0.0214		0.0214	0.0214		337.2034	337.2034	6.4600e-003	6.1800e-003	339.2072
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0.290411	0.0000	3.0000e-005	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		0.0342	0.0342	0.0000	0.0000	0.0344
User Defined Industrial	2.00548	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		0.2359	0.2359	0.0000	0.0000	0.2373
User Defined Industrial	4.36164	5.0000e-005	4.3000e-004	3.6000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.5131	0.5131	1.0000e-005	1.0000e-005	0.5162

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	5.34247	6.0000e-005	5.2000e-004	4.4000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.6285	0.6285	1.0000e-005	1.0000e-005	0.6323
User Defined Industrial	8	9.0000e-005	7.8000e-004	6.6000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.9412	0.9412	2.0000e-005	2.0000e-005	0.9468
User Defined Industrial	8.69589	9.0000e-005	8.5000e-004	7.2000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		1.0231	1.0231	2.0000e-005	2.0000e-005	1.0291
Total		**0.0421**	**0.3813**	**0.3094**	**2.3000e-003**		**0.0291**	**0.0291**		**0.0291**	**0.0291**		**459.5911**	**459.5911**	**8.8000e-003**	**8.4100e-003**	**462.3222**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	0.181561	1.9600e-003	0.0167	7.1200e-003	1.1000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003		21.3601	21.3601	4.1000e-004	3.9000e-004	21.4870
Congregate Care (Assisted Living)	0.0159833	1.7000e-004	1.4700e-003	6.3000e-004	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.8804	1.8804	4.0000e-005	3.0000e-005	1.8916
Congregate Care (Assisted Living)	0.0877835	9.5000e-004	8.0900e-003	3.4400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004		10.3275	10.3275	2.0000e-004	1.9000e-004	10.3888
General Light Industry	0.0517732	5.6000e-004	5.0800e-003	4.2600e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.0910	6.0910	1.2000e-004	1.1000e-004	6.1272
General Light Industry	0.0786713	8.5000e-004	7.7100e-003	6.4800e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004		9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
General Light Industry	0.0809771	8.7000e-004	7.9400e-003	6.6700e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5267	9.5267	1.8000e-004	1.7000e-004	9.5833
General Office Building	0.0591432	6.4000e-004	5.8000e-003	4.8700e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9580	6.9580	1.3000e-004	1.3000e-004	6.9994
General Office Building	0.37473	4.0400e-003	0.0367	0.0309	2.2000e-004		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003		44.0859	44.0859	8.4000e-004	8.1000e-004	44.3479

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Health Club	0.0809771	8.7000e-004	7.9400e-003	6.6700e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5267	9.5267	1.8000e-004	1.7000e-004	9.5833
High Turnover (Sit Down Restaurant)	2.86623	0.0309	0.2810	0.2360	1.6900e-003		0.0214	0.0214		0.0214	0.0214		337.2034	337.2034	6.4600e-003	6.1800e-003	339.2072
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0.000290411	0.0000	3.0000e-005	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		0.0342	0.0342	0.0000	0.0000	0.0344
User Defined Industrial	0.00200548	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		0.2359	0.2359	0.0000	0.0000	0.2373
User Defined Industrial	0.00436164	5.0000e-005	4.3000e-004	3.6000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.5131	0.5131	1.0000e-005	1.0000e-005	0.5162
User Defined Industrial	0.00534247	6.0000e-005	5.2000e-004	4.4000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.6285	0.6285	1.0000e-005	1.0000e-005	0.6323
User Defined Industrial	0.008	9.0000e-005	7.8000e-004	6.6000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.9412	0.9412	2.0000e-005	2.0000e-005	0.9468
User Defined Industrial	0.00869589	9.0000e-005	8.5000e-004	7.2000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		1.0231	1.0231	2.0000e-005	2.0000e-005	1.0291
Total		**0.0421**	**0.3813**	**0.3094**	**2.3000e-003**		**0.0291**	**0.0291**		**0.0291**	**0.0291**		**459.5911**	**459.5911**	**8.8000e-003**	**8.4100e-003**	**462.3222**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	107.3593	2.0705	131.3976	0.2347		18.1667	18.1667		18.1667	18.1667	1,903.4156	801.9876	2,705.4032	1.7564	0.1498	2,793.9498
Unmitigated	107.3593	2.0705	131.3976	0.2347		18.1667	18.1667		18.1667	18.1667	1,903.4156	801.9876	2,705.4032	1.7564	0.1498	2,793.9498

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7824					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	104.9371	2.0487	129.5000	0.2346		18.1563	18.1563		18.1563	18.1563	1,903.4156	798.5647	2,701.9803	1.7530	0.1498	2,790.4436
Landscaping	0.0579	0.0218	1.8976	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4229	3.4229	3.3300e-003		3.5061
Total	**107.3593**	**2.0705**	**131.3976**	**0.2347**		**18.1667**	**18.1667**		**18.1667**	**18.1667**	**1,903.4156**	**801.9876**	**2,705.4032**	**1.7564**	**0.1498**	**2,793.9498**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7824					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	104.9371	2.0487	129.5000	0.2346		18.1563	18.1563		18.1563	18.1563	1,903.4156	798.5647	2,701.9803	1.7530	0.1498	2,790.4436
Landscaping	0.0579	0.0218	1.8976	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4229	3.4229	3.3300e-003		3.5061
Total	**107.3593**	**2.0705**	**131.3976**	**0.2347**		**18.1667**	**18.1667**		**18.1667**	**18.1667**	**1,903.4156**	**801.9876**	**2,705.4032**	**1.7564**	**0.1498**	**2,793.9498**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Growlersberg Conservation Camp Replacement Project Existing Conditions

El Dorado-Mountain County County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.60	1000sqft	0.13	5,601.00	0
General Office Building	0.88	1000sqft	0.02	884.00	0
General Light Industry	4.76	1000sqft	0.11	4,760.00	0
General Light Industry	7.23	1000sqft	0.17	7,233.00	0
General Light Industry	7.45	1000sqft	0.17	7,445.00	0
Unrefrigerated Warehouse-No Rail	7.30	1000sqft	0.17	7,304.00	0
User Defined Industrial	2.92	User Defined Unit	0.07	2,920.00	0
User Defined Industrial	1.59	User Defined Unit	0.04	1,592.00	0
User Defined Industrial	3.17	User Defined Unit	0.07	3,174.00	0
User Defined Industrial	0.73	User Defined Unit	0.02	732.00	0
User Defined Industrial	0.11	User Defined Unit	0.00	106.00	0
User Defined Industrial	1.95	User Defined Unit	0.04	1,950.00	0
Parking Lot	70.00	Space	0.63	28,000.00	0
Health Club	7.45	1000sqft	0.17	7,445.00	0
High Turnover (Sit Down Restaurant)	8.82	1000sqft	0.20	8,824.00	0
Congregate Care (Assisted Living)	14.54	Dwelling Unit	0.91	14,544.00	136
Congregate Care (Assisted Living)	1.28	Dwelling Unit	0.08	1,280.00	4
Congregate Care (Assisted Living)	7.03	Dwelling Unit	0.44	7,030.00	24

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - General Office Bld. = Blds. A, P; Health Club = Bld. B; Sit-down Rest. = Bld. C; Congregate Care = Blds. D, K, & N population based on # of beds; Warehouse = Blds. M; General Light Industrial = Bld. F, H, L; User Defined = E, G, J1, J2, O, Q

Construction Phase - Existing conditions model run only

Off-road Equipment - Existing conditions model run only

Trips and VMT - Existing Conditions model run

Demolition -

Architectural Coating - Existing conditions model run only

Vehicle Trips - Worker trips updated to match PD (14 CalFire employees and 12 CDCR employees)

Woodstoves -

Energy Use - Using historic data to show existing conditions, User defined industrial energy usage = 1/2 the energy use of general light industrial to show conservative energy useage for storage buildings.

Water And Wastewater -

Area Coating -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	29,985.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	89,955.00	0.00
tblArchitecturalCoating	ConstArea_Parking	1,680.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	15,426.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	46,279.00	0.00

tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblEnergyUse	LightingElect	0.00	0.57
tblEnergyUse	NT24E	0.00	0.46
tblEnergyUse	NT24NG	0.00	0.08
tblEnergyUse	T24E	0.00	0.21
tblEnergyUse	T24NG	0.00	0.92
tblLandUse	LandUseSquareFeet	880.00	884.00
tblLandUse	LandUseSquareFeet	5,600.00	5,601.00
tblLandUse	LandUseSquareFeet	7,230.00	7,233.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00
tblLandUse	LandUseSquareFeet	7,300.00	7,304.00
tblLandUse	LandUseSquareFeet	0.00	106.00
tblLandUse	LandUseSquareFeet	0.00	732.00
tblLandUse	LandUseSquareFeet	0.00	1,592.00
tblLandUse	LandUseSquareFeet	0.00	1,950.00
tblLandUse	LandUseSquareFeet	0.00	2,920.00
tblLandUse	LandUseSquareFeet	0.00	3,174.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00
tblLandUse	LandUseSquareFeet	8,820.00	8,824.00
tblLandUse	LandUseSquareFeet	14,540.00	14,544.00
tblLandUse	LotAcreage	0.00	0.02
tblLandUse	LotAcreage	0.00	0.04

tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	Population	42.00	136.00
tblLandUse	Population	20.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	11.00	0.00
tblVehicleTrips	ST_TR	2.20	2.28
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	2.44	2.28
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	2.74	2.28
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	107.3593	2.0705	131.3976	0.2347		18.1667	18.1667		18.1667	18.1667	1,903.415 6	801.9876	2,705.403 2	1.7564	0.1498	2,793.949 8
Energy	0.0421	0.3813	0.3094	2.3000e-003		0.0291	0.0291		0.0291	0.0291		459.5911	459.5911	8.8100e-003	8.4300e-003	462.3222
Mobile	0.0888	0.3451	1.2328	3.9700e-003	0.4105	3.7300e-003	0.4142	0.1096	3.4800e-003	0.1131		398.4165	398.4165	0.0115		398.7045
Total	**107.4903**	**2.7969**	**132.9398**	**0.2409**	**0.4105**	**18.1996**	**18.6100**	**0.1096**	**18.1993**	**18.3090**	**1,903.415 6**	**1,659.995 2**	**3,563.410 8**	**1.7767**	**0.1582**	**3,654.976 4**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	107.3593	2.0705	131.3976	0.2347		18.1667	18.1667		18.1667	18.1667	1,903.415 6	801.9876	2,705.403 2	1.7564	0.1498	2,793.949 8
Energy	0.0421	0.3813	0.3094	2.3000e-003		0.0291	0.0291		0.0291	0.0291		459.5911	459.5911	8.8100e-003	8.4300e-003	462.3222
Mobile	0.0888	0.3451	1.2328	3.9700e-003	0.4105	3.7300e-003	0.4142	0.1096	3.4800e-003	0.1131		398.4165	398.4165	0.0115		398.7045
Total	**107.4903**	**2.7969**	**132.9398**	**0.2409**	**0.4105**	**18.1996**	**18.6100**	**0.1096**	**18.1993**	**18.3090**	**1,903.415 6**	**1,659.995 2**	**3,563.410 8**	**1.7767**	**0.1582**	**3,654.976 4**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/1/2022	2/28/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.63

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0888	0.3451	1.2328	3.9700e-003	0.4105	3.7300e-003	0.4142	0.1096	3.4800e-003	0.1131		398.4165	398.4165	0.0115		398.7045
Unmitigated	0.0888	0.3451	1.2328	3.9700e-003	0.4105	3.7300e-003	0.4142	0.1096	3.4800e-003	0.1131		398.4165	398.4165	0.0115		398.7045

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	33.15	33.15	33.15	123,446	123,446
Congregate Care (Assisted Living)	2.92	2.92	2.92	10,867	10,867
Congregate Care (Assisted Living)	16.03	16.03	16.03	59,685	59,685
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Total	52.10	52.10	52.10	193,999	193,999

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Health Club	14.70	6.60	6.60	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	14.70	6.60	6.60	8.50	72.50	19.00	37	20	43
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Light Industry	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Health Club	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
High Turnover (Sit Down Restaurant)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Unrefrigerated Warehouse-No Rail	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
User Defined Industrial	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0421	0.3813	0.3094	2.3000e-003		0.0291	0.0291		0.0291	0.0291		459.5911	459.5911	8.8100e-003	8.4300e-003	462.3222
NaturalGas Unmitigated	0.0421	0.3813	0.3094	2.3000e-003		0.0291	0.0291		0.0291	0.0291		459.5911	459.5911	8.8100e-003	8.4300e-003	462.3222

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	15.9833	1.7000e-004	1.4700e-003	6.3000e-004	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.8804	1.8804	4.0000e-005	3.0000e-005	1.8916
Congregate Care (Assisted Living)	181.561	1.9600e-003	0.0167	7.1200e-003	1.1000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003		21.3601	21.3601	4.1000e-004	3.9000e-004	21.4870
Congregate Care (Assisted Living)	87.7835	9.5000e-004	8.0900e-003	3.4400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004		10.3275	10.3275	2.0000e-004	1.9000e-004	10.3888
General Light Industry	51.7732	5.6000e-004	5.0800e-003	4.2600e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.0910	6.0910	1.2000e-004	1.1000e-004	6.1272
General Light Industry	78.6713	8.5000e-004	7.7100e-003	6.4800e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004		9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
General Light Industry	80.9771	8.7000e-004	7.9400e-003	6.6700e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5267	9.5267	1.8000e-004	1.7000e-004	9.5833
General Office Building	374.73	4.0400e-003	0.0367	0.0309	2.2000e-004		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003		44.0859	44.0859	8.4000e-004	8.1000e-004	44.3479
General Office Building	59.1432	6.4000e-004	5.8000e-003	4.8700e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9580	6.9580	1.3000e-004	1.3000e-004	6.9994
Health Club	80.9771	8.7000e-004	7.9400e-003	6.6700e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5267	9.5267	1.8000e-004	1.7000e-004	9.5833
High Turnover (Sit Down Restaurant)	2866.23	0.0309	0.2810	0.2360	1.6900e-003		0.0214	0.0214		0.0214	0.0214		337.2034	337.2034	6.4600e-003	6.1800e-003	339.2072
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0.290411	0.0000	3.0000e-005	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		0.0342	0.0342	0.0000	0.0000	0.0344
User Defined Industrial	2.00548	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		0.2359	0.2359	0.0000	0.0000	0.2373
User Defined Industrial	4.36164	5.0000e-005	4.3000e-004	3.6000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.5131	0.5131	1.0000e-005	1.0000e-005	0.5162

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	5.34247	6.0000e-005	5.2000e-004	4.4000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.6285	0.6285	1.0000e-005	1.0000e-005	0.6323
User Defined Industrial	8	9.0000e-005	7.8000e-004	6.6000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.9412	0.9412	2.0000e-005	2.0000e-005	0.9468
User Defined Industrial	8.69589	9.0000e-005	8.5000e-004	7.2000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		1.0231	1.0231	2.0000e-005	2.0000e-005	1.0291
Total		**0.0421**	**0.3813**	**0.3094**	**2.3000e-003**		**0.0291**	**0.0291**		**0.0291**	**0.0291**		**459.5911**	**459.5911**	**8.8000e-003**	**8.4100e-003**	**462.3222**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	0.181561	1.9600e-003	0.0167	7.1200e-003	1.1000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003		21.3601	21.3601	4.1000e-004	3.9000e-004	21.4870
Congregate Care (Assisted Living)	0.0159833	1.7000e-004	1.4700e-003	6.3000e-004	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.8804	1.8804	4.0000e-005	3.0000e-005	1.8916
Congregate Care (Assisted Living)	0.0877835	9.5000e-004	8.0900e-003	3.4400e-003	5.0000e-005		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004		10.3275	10.3275	2.0000e-004	1.9000e-004	10.3888
General Light Industry	0.0517732	5.6000e-004	5.0800e-003	4.2600e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.0910	6.0910	1.2000e-004	1.1000e-004	6.1272
General Light Industry	0.0786713	8.5000e-004	7.7100e-003	6.4800e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004		9.2554	9.2554	1.8000e-004	1.7000e-004	9.3104
General Light Industry	0.0809771	8.7000e-004	7.9400e-003	6.6700e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5267	9.5267	1.8000e-004	1.7000e-004	9.5833
General Office Building	0.0591432	6.4000e-004	5.8000e-003	4.8700e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004		6.9580	6.9580	1.3000e-004	1.3000e-004	6.9994
General Office Building	0.37473	4.0400e-003	0.0367	0.0309	2.2000e-004		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003		44.0859	44.0859	8.4000e-004	8.1000e-004	44.3479

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Health Club	0.0809771	8.7000e-004	7.9400e-003	6.6700e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004		9.5267	9.5267	1.8000e-004	1.7000e-004	9.5833
High Turnover (Sit Down Restaurant)	2.86623	0.0309	0.2810	0.2360	1.6900e-003		0.0214	0.0214		0.0214	0.0214		337.2034	337.2034	6.4600e-003	6.1800e-003	339.2072
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0.000290411	0.0000	3.0000e-005	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		0.0342	0.0342	0.0000	0.0000	0.0344
User Defined Industrial	0.00200548	2.0000e-005	2.0000e-004	1.7000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		0.2359	0.2359	0.0000	0.0000	0.2373
User Defined Industrial	0.00436164	5.0000e-005	4.3000e-004	3.6000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.5131	0.5131	1.0000e-005	1.0000e-005	0.5162
User Defined Industrial	0.00534247	6.0000e-005	5.2000e-004	4.4000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.6285	0.6285	1.0000e-005	1.0000e-005	0.6323
User Defined Industrial	0.008	9.0000e-005	7.8000e-004	6.6000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.9412	0.9412	2.0000e-005	2.0000e-005	0.9468
User Defined Industrial	0.00869589	9.0000e-005	8.5000e-004	7.2000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		1.0231	1.0231	2.0000e-005	2.0000e-005	1.0291
Total		**0.0421**	**0.3813**	**0.3094**	**2.3000e-003**		**0.0291**	**0.0291**		**0.0291**	**0.0291**		**459.5911**	**459.5911**	**8.8000e-003**	**8.4100e-003**	**462.3222**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	107.3593	2.0705	131.3976	0.2347		18.1667	18.1667		18.1667	18.1667	1,903.4156	801.9876	2,705.4032	1.7564	0.1498	2,793.9498
Unmitigated	107.3593	2.0705	131.3976	0.2347		18.1667	18.1667		18.1667	18.1667	1,903.4156	801.9876	2,705.4032	1.7564	0.1498	2,793.9498

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7824					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	104.9371	2.0487	129.5000	0.2346		18.1563	18.1563		18.1563	18.1563	1,903.4156	798.5647	2,701.9803	1.7530	0.1498	2,790.4436
Landscaping	0.0579	0.0218	1.8976	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4229	3.4229	3.3300e-003		3.5061
Total	**107.3593**	**2.0705**	**131.3976**	**0.2347**		**18.1667**	**18.1667**		**18.1667**	**18.1667**	**1,903.4156**	**801.9876**	**2,705.4032**	**1.7564**	**0.1498**	**2,793.9498**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7824					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	104.9371	2.0487	129.5000	0.2346		18.1563	18.1563		18.1563	18.1563	1,903.4156	798.5647	2,701.9803	1.7530	0.1498	2,790.4436
Landscaping	0.0579	0.0218	1.8976	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4229	3.4229	3.3300e-003		3.5061
Total	**107.3593**	**2.0705**	**131.3976**	**0.2347**		**18.1667**	**18.1667**		**18.1667**	**18.1667**	**1,903.4156**	**801.9876**	**2,705.4032**	**1.7564**	**0.1498**	**2,793.9498**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Growlersberg Conservation Camp Replacement Project Construction

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.60	1000sqft	0.13	5,600.00	0
General Office Building	0.88	1000sqft	0.02	880.00	0
User Defined Industrial	2.92	User Defined Unit	0.07	2,920.00	0
User Defined Industrial	1.59	User Defined Unit	0.04	1,592.00	0
General Light Industry	4.76	1000sqft	0.11	4,760.00	0
General Light Industry	7.23	1000sqft	0.17	7,233.00	0
General Light Industry	7.45	1000sqft	0.17	7,445.00	0
User Defined Industrial	3.17	User Defined Unit	0.07	3,174.00	0
User Defined Industrial	0.73	User Defined Unit	0.02	732.00	0
User Defined Industrial	0.11	User Defined Unit	0.00	106.00	0
Unrefrigerated Warehouse-No Rail	7.30	1000sqft	0.17	7,304.00	0
User Defined Industrial	1.95	User Defined Unit	0.04	1,950.00	0
Other Non-Asphalt Surfaces	9.58	Acre	9.58	417,304.80	0
Parking Lot	70.00	Space	0.63	28,000.00	0
Health Club	7.45	1000sqft	0.17	7,450.00	0
High Turnover (Sit Down Restaurant)	8.82	1000sqft	0.20	8,820.00	0
Congregate Care (Assisted Living)	14.54	Dwelling Unit	0.91	14,540.00	136
Congregate Care (Assisted Living)	1.28	Dwelling Unit	0.08	1,280.00	4
Congregate Care (Assisted Living)	7.03	Dwelling Unit	0.44	7,030.00	24

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use - General Office Bld. = Blds. A, P; Health Club = Bld. B; Sit-down Rest. = Bld. C; Congregate Care = Blds. D, K, & N population based on # of beds;
Warehouse = Blds. M; General Light Industrial = Bld. F, H, L; User Defined = E, G, J1, J2, O, Q

Construction Phase - Construction, Paving, Architectural Coating anticipated to be conducted simultaneously

Off-road Equipment -

Off-road Equipment - Updated equipment list with Trenchers to account for underground infrastructure as per PD

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition - Square footage of building demolition updated to match total square footage of all proposed buildings per PD

Architectural Coating -

Vehicle Trips - Construction-only modeling run

Woodstoves - Construction-only modeling run

Landscape Equipment -

Energy Use - Construction-only model run

Water And Wastewater - Construction-Only model run

Solid Waste - Construction-only model run

Trips and VMT -

Area Coating - Construction only modeling run

Growlersberg Conservation Camp Replacement Project Construction - El Dorado-Mountain County County, Summer

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	0
tblAreaCoating	Area_EF_Nonresidential_Interior	250	0
tblAreaCoating	Area_EF_Parking	250	0
tblAreaCoating	Area_EF_Residential_Exterior	250	0
tblAreaCoating	Area_EF_Residential_Interior	250	0
tblAreaCoating	Area_Nonresidential_Exterior	29983	0
tblAreaCoating	Area_Nonresidential_Interior	89949	0
tblAreaCoating	Area_Parking	26718	0
tblAreaCoating	Area_Residential_Exterior	15424	0
tblAreaCoating	Area_Residential_Interior	46271	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	300.00	340.00
tblConstructionPhase	NumDays	20.00	340.00
tblConstructionPhase	NumDays	20.00	340.00
tblConstructionPhase	PhaseEndDate	7/17/2023	9/11/2023
tblConstructionPhase	PhaseEndDate	8/14/2023	9/11/2023
tblConstructionPhase	PhaseStartDate	7/18/2023	5/24/2022
tblConstructionPhase	PhaseStartDate	8/15/2023	5/24/2022
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	LightingElect	3.45	0.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	LightingElect	4.74	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24E	1.85	0.00

tblEnergyUse	NT24E	3.98	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24E	15.83	0.00
tblEnergyUse	NT24NG	1,599.00	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	NT24NG	88.55	0.00
tblEnergyUse	T24E	830.63	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24E	3.63	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24E	4.00	0.00
tblEnergyUse	T24NG	2,290.03	0.00
tblEnergyUse	T24NG	3.20	0.00
tblEnergyUse	T24NG	19.54	0.00
tblEnergyUse	T24NG	3.20	0.00
tblEnergyUse	T24NG	27.65	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	12.57	0.00
tblFireplaces	NumberNoFireplace	2.29	0.00
tblFireplaces	NumberWood	8.00	0.00
tblLandUse	LandUseSquareFeet	0.00	2,920.00
tblLandUse	LandUseSquareFeet	0.00	1,592.00
tblLandUse	LandUseSquareFeet	0.00	106.00
tblLandUse	LandUseSquareFeet	0.00	732.00

tblLandUse	LandUseSquareFeet	0.00	1,950.00
tblLandUse	LandUseSquareFeet	0.00	3,174.00
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.02
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	Population	42.00	136.00
tblLandUse	Population	20.00	24.00
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	20.85	0.00
tblSolidWaste	SolidWasteGenerationRate	24.11	0.00
tblSolidWaste	SolidWasteGenerationRate	6.03	0.00
tblSolidWaste	SolidWasteGenerationRate	42.47	0.00
tblSolidWaste	SolidWasteGenerationRate	104.96	0.00
tblSolidWaste	SolidWasteGenerationRate	6.86	0.00
tblVehicleTrips	ST_TR	2.20	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	2.44	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00

tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	2.74	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	1,488,769.49	0.00
tblWater	IndoorWaterUseRate	4,495,500.00	0.00
tblWater	IndoorWaterUseRate	1,151,714.69	0.00
tblWater	IndoorWaterUseRate	440,616.42	0.00
tblWater	IndoorWaterUseRate	2,677,167.34	0.00
tblWater	IndoorWaterUseRate	1,688,125.00	0.00
tblWater	OutdoorWaterUseRate	938,572.07	0.00
tblWater	OutdoorWaterUseRate	705,889.65	0.00
tblWater	OutdoorWaterUseRate	270,055.23	0.00
tblWater	OutdoorWaterUseRate	170,883.02	0.00
tblWoodstoves	NumberCatalytic	1.14	0.00
tblWoodstoves	NumberNoncatalytic	1.14	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	13.0155	44.5612	53.4746	0.1154	18.2962	1.9886	19.9103	9.9917	1.8538	11.4767	0.0000	11,368.1799	11,368.1799	1.9506	0.0000	11,410.3092
2023	12.6098	40.3257	52.1094	0.1136	4.2087	1.7703	5.9790	1.1277	1.6496	2.7772	0.0000	11,193.0791	11,193.0791	1.6647	0.0000	11,234.6971
Maximum	**13.0155**	**44.5612**	**53.4746**	**0.1154**	**18.2962**	**1.9886**	**19.9103**	**9.9917**	**1.8538**	**11.4767**	**0.0000**	**11,368.1799**	**11,368.1799**	**1.9506**	**0.0000**	**11,410.3092**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	13.0155	44.5612	53.4746	0.1154	18.2962	1.9886	19.9103	9.9917	1.8538	11.4767	0.0000	11,368.1799	11,368.1799	1.9506	0.0000	11,410.3092
2023	12.6098	40.3257	52.1094	0.1136	4.2087	1.7703	5.9790	1.1277	1.6496	2.7772	0.0000	11,193.0791	11,193.0791	1.6647	0.0000	11,234.6971
Maximum	**13.0155**	**44.5612**	**53.4746**	**0.1154**	**18.2962**	**1.9886**	**19.9103**	**9.9917**	**1.8538**	**11.4767**	**0.0000**	**11,368.1799**	**11,368.1799**	**1.9506**	**0.0000**	**11,410.3092**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9880	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.4250	3.4250	3.3400e-003	0.0000	3.5084
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.9880**	**0.0218**	**1.8986**	**1.0000e-004**	**0.0000**	**0.0105**	**0.0105**	**0.0000**	**0.0105**	**0.0105**	**0.0000**	**3.4250**	**3.4250**	**3.3400e-003**	**0.0000**	**3.5084**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9880	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.4250	3.4250	3.3400e-003	0.0000	3.5084
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.9880**	**0.0218**	**1.8986**	**1.0000e-004**	**0.0000**	**0.0105**	**0.0105**	**0.0000**	**0.0105**	**0.0105**	**0.0000**	**3.4250**	**3.4250**	**3.3400e-003**	**0.0000**	**3.5084**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2022	3/28/2022	5	20	
2	Site Preparation	Site Preparation	3/29/2022	4/11/2022	5	10	
3	Grading	Grading	4/12/2022	5/23/2022	5	30	
4	Building Construction	Building Construction	5/24/2022	9/11/2023	5	340	
5	Paving	Paving	5/24/2022	9/11/2023	5	340	
6	Architectural Coating	Architectural Coating	5/24/2022	9/11/2023	5	340	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 10.21

Residential Indoor: 46,271; Residential Outdoor: 15,424; Non-Residential Indoor: 89,949; Non-Residential Outdoor: 29,983; Striped Parking Area: 26,718 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Trenchers	2	8.00	78	0.50
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

<u>Trips and VMT</u>

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	377.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	228.00	85.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	46.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1400	0.0000	4.1400	0.6269	0.0000	0.6269			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.781 2	3,746.781 2	1.0524		3,773.092 0
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**4.1400**	**1.2427**	**5.3826**	**0.6269**	**1.1553**	**1.7821**		**3,746.781 2**	**3,746.781 2**	**1.0524**		**3,773.092 0**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1473	5.3554	1.6271	0.0152	0.3251	0.0203	0.3455	0.0888	0.0195	0.1082		1,587.2518	1,587.2518	0.0172		1,587.6818
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0991	0.0485	0.6633	1.8200e-003	0.1916	1.3000e-003	0.1929	0.0508	1.1900e-003	0.0520		181.2116	181.2116	4.7800e-003		181.3310
Total	**0.2464**	**5.4039**	**2.2904**	**0.0170**	**0.5167**	**0.0216**	**0.5384**	**0.1396**	**0.0206**	**0.1602**		**1,768.4634**	**1,768.4634**	**0.0220**		**1,769.0128**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1400	0.0000	4.1400	0.6269	0.0000	0.6269			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**4.1400**	**1.2427**	**5.3826**	**0.6269**	**1.1553**	**1.7821**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1473	5.3554	1.6271	0.0152	0.3251	0.0203	0.3455	0.0888	0.0195	0.1082		1,587.2518	1,587.2518	0.0172		1,587.6818
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0991	0.0485	0.6633	1.8200e-003	0.1916	1.3000e-003	0.1929	0.0508	1.1900e-003	0.0520		181.2116	181.2116	4.7800e-003		181.3310
Total	**0.2464**	**5.4039**	**2.2904**	**0.0170**	**0.5167**	**0.0216**	**0.5384**	**0.1396**	**0.0206**	**0.1602**		**1,768.4634**	**1,768.4634**	**0.0220**		**1,769.0128**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1189	0.0581	0.7960	2.1800e-003	0.2299	1.5600e-003	0.2315	0.0610	1.4300e-003	0.0624		217.4539	217.4539	5.7300e-003		217.5971
Total	**0.1189**	**0.0581**	**0.7960**	**2.1800e-003**	**0.2299**	**1.5600e-003**	**0.2315**	**0.0610**	**1.4300e-003**	**0.0624**		**217.4539**	**217.4539**	**5.7300e-003**		**217.5971**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1189	0.0581	0.7960	2.1800e-003	0.2299	1.5600e-003	0.2315	0.0610	1.4300e-003	0.0624		217.4539	217.4539	5.7300e-003		217.5971
Total	**0.1189**	**0.0581**	**0.7960**	**2.1800e-003**	**0.2299**	**1.5600e-003**	**0.2315**	**0.0610**	**1.4300e-003**	**0.0624**		**217.4539**	**217.4539**	**5.7300e-003**		**217.5971**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1321	0.0646	0.8844	2.4300e-003	0.2555	1.7300e-003	0.2572	0.0678	1.5900e-003	0.0693		241.6154	241.6154	6.3700e-003		241.7746
Total	**0.1321**	**0.0646**	**0.8844**	**2.4300e-003**	**0.2555**	**1.7300e-003**	**0.2572**	**0.0678**	**1.5900e-003**	**0.0693**		**241.6154**	**241.6154**	**6.3700e-003**		**241.7746**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1321	0.0646	0.8844	2.4300e-003	0.2555	1.7300e-003	0.2572	0.0678	1.5900e-003	0.0693		241.6154	241.6154	6.3700e-003		241.7746
Total	**0.1321**	**0.0646**	**0.8844**	**2.4300e-003**	**0.2555**	**1.7300e-003**	**0.2572**	**0.0678**	**1.5900e-003**	**0.0693**		**241.6154**	**241.6154**	**6.3700e-003**		**241.7746**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4376	22.4088	21.5873	0.0337		1.2903	1.2903		1.2040	1.2040		3,211.5019	3,211.5019	0.8245		3,232.1141
Total	**2.4376**	**22.4088**	**21.5873**	**0.0337**		**1.2903**	**1.2903**		**1.2040**	**1.2040**		**3,211.5019**	**3,211.5019**	**0.8245**		**3,232.1141**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2562	8.6856	2.7136	0.0208	0.5173	0.0237	0.5409	0.1487	0.0226	0.1714		2,176.226 9	2,176.226 9	0.0364		2,177.135 6
Worker	1.5061	0.7364	10.0822	0.0277	2.9123	0.0197	2.9320	0.7723	0.0182	0.7905		2,754.415 7	2,754.415 7	0.0726		2,756.230 5
Total	**1.7622**	**9.4220**	**12.7958**	**0.0485**	**3.4295**	**0.0434**	**3.4729**	**0.9210**	**0.0408**	**0.9618**		**4,930.642 6**	**4,930.642 6**	**0.1089**		**4,933.366 0**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4376	22.4088	21.5873	0.0337		1.2903	1.2903		1.2040	1.2040	0.0000	3,211.501 9	3,211.501 9	0.8245		3,232.114 1
Total	**2.4376**	**22.4088**	**21.5873**	**0.0337**		**1.2903**	**1.2903**		**1.2040**	**1.2040**	**0.0000**	**3,211.501 9**	**3,211.501 9**	**0.8245**		**3,232.114 1**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2562	8.6856	2.7136	0.0208	0.5173	0.0237	0.5409	0.1487	0.0226	0.1714		2,176.2269	2,176.2269	0.0364		2,177.1356
Worker	1.5061	0.7364	10.0822	0.0277	2.9123	0.0197	2.9320	0.7723	0.0182	0.7905		2,754.4157	2,754.4157	0.0726		2,756.2305
Total	**1.7622**	**9.4220**	**12.7958**	**0.0485**	**3.4295**	**0.0434**	**3.4729**	**0.9210**	**0.0408**	**0.9618**		**4,930.6426**	**4,930.6426**	**0.1089**		**4,933.3660**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2696	20.8836	21.4541	0.0337		1.1506	1.1506		1.0732	1.0732		3,212.8817	3,212.8817	0.8206		3,233.3954
Total	**2.2696**	**20.8836**	**21.4541**	**0.0337**		**1.1506**	**1.1506**		**1.0732**	**1.0732**		**3,212.8817**	**3,212.8817**	**0.8206**		**3,233.3954**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2080	7.1063	2.5203	0.0204	0.5173	0.0145	0.5318	0.1487	0.0139	0.1626		2,129.3216	2,129.3216	0.0310		2,130.0962
Worker	1.4220	0.6637	9.2617	0.0266	2.9123	0.0191	2.9314	0.7723	0.0176	0.7899		2,652.2504	2,652.2504	0.0650		2,653.8750
Total	**1.6299**	**7.7700**	**11.7820**	**0.0470**	**3.4296**	**0.0336**	**3.4632**	**0.9210**	**0.0315**	**0.9525**		**4,781.5720**	**4,781.5720**	**0.0960**		**4,783.9712**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Off-Road	2.2696	20.8836	21.4541	0.0337		1.1506	1.1506		1.0732	1.0732	0.0000	3,212.8817	3,212.8817	0.8206		3,233.3954
Total	**2.2696**	**20.8836**	**21.4541**	**0.0337**		**1.1506**	**1.1506**		**1.0732**	**1.0732**	**0.0000**	**3,212.8817**	**3,212.8817**	**0.8206**		**3,233.3954**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2080	7.1063	2.5203	0.0204	0.5173	0.0145	0.5318	0.1487	0.0139	0.1626		2,129.3216	2,129.3216	0.0310		2,130.0962
Worker	1.4220	0.6637	9.2617	0.0266	2.9123	0.0191	2.9314	0.7723	0.0176	0.7899		2,652.2504	2,652.2504	0.0650		2,653.8750
Total	**1.6299**	**7.7700**	**11.7820**	**0.0470**	**3.4296**	**0.0336**	**3.4632**	**0.9210**	**0.0315**	**0.9525**		**4,781.5720**	**4,781.5720**	**0.0960**		**4,783.9712**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.8500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1077**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0991	0.0485	0.6633	1.8200e-003	0.1916	1.3000e-003	0.1929	0.0508	1.1900e-003	0.0520		181.2116	181.2116	4.7800e-003		181.3310
Total	**0.0991**	**0.0485**	**0.6633**	**1.8200e-003**	**0.1916**	**1.3000e-003**	**0.1929**	**0.0508**	**1.1900e-003**	**0.0520**		**181.2116**	**181.2116**	**4.7800e-003**		**181.3310**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	4.8500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1077**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.660 3**	**2,207.660 3**	**0.7140**		**2,225.510 4**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0991	0.0485	0.6633	1.8200e-003	0.1916	1.3000e-003	0.1929	0.0508	1.1900e-003	0.0520		181.2116	181.2116	4.7800e-003		181.3310
Total	**0.0991**	**0.0485**	**0.6633**	**1.8200e-003**	**0.1916**	**1.3000e-003**	**0.1929**	**0.0508**	**1.1900e-003**	**0.0520**		**181.2116**	**181.2116**	**4.7800e-003**		**181.3310**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	4.8500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0376**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0936	0.0437	0.6093	1.7500e-003	0.1916	1.2600e-003	0.1929	0.0508	1.1600e-003	0.0520		174.4902	174.4902	4.2800e-003		174.5970
Total	**0.0936**	**0.0437**	**0.6093**	**1.7500e-003**	**0.1916**	**1.2600e-003**	**0.1929**	**0.0508**	**1.1600e-003**	**0.0520**		**174.4902**	**174.4902**	**4.2800e-003**		**174.5970**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	4.8500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0376**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0936	0.0437	0.6093	1.7500e-003	0.1916	1.2600e-003	0.1929	0.0508	1.1600e-003	0.0520		174.4902	174.4902	4.2800e-003		174.5970
Total	**0.0936**	**0.0437**	**0.6093**	**1.7500e-003**	**0.1916**	**1.2600e-003**	**0.1929**	**0.0508**	**1.1600e-003**	**0.0520**		**174.4902**	**174.4902**	**4.2800e-003**		**174.5970**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**7.3051**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3039	0.1486	2.0341	5.5800e-003	0.5876	3.9800e-003	0.5915	0.1558	3.6600e-003	0.1595		555.7155	555.7155	0.0147		556.0816
Total	**0.3039**	**0.1486**	**2.0341**	**5.5800e-003**	**0.5876**	**3.9800e-003**	**0.5915**	**0.1558**	**3.6600e-003**	**0.1595**		**555.7155**	**555.7155**	**0.0147**		**556.0816**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**7.3051**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3039	0.1486	2.0341	5.5800e-003	0.5876	3.9800e-003	0.5915	0.1558	3.6600e-003	0.1595		555.7155	555.7155	0.0147		556.0816
Total	**0.3039**	**0.1486**	**2.0341**	**5.5800e-003**	**0.5876**	**3.9800e-003**	**0.5915**	**0.1558**	**3.6600e-003**	**0.1595**		**555.7155**	**555.7155**	**0.0147**		**556.0816**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**7.2922**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2869	0.1339	1.8686	5.3700e-003	0.5876	3.8500e-003	0.5914	0.1558	3.5500e-003	0.1594		535.1031	535.1031	0.0131		535.4309
Total	**0.2869**	**0.1339**	**1.8686**	**5.3700e-003**	**0.5876**	**3.8500e-003**	**0.5914**	**0.1558**	**3.5500e-003**	**0.1594**		**535.1031**	**535.1031**	**0.0131**		**535.4309**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.2922**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2869	0.1339	1.8686	5.3700e-003	0.5876	3.8500e-003	0.5914	0.1558	3.5500e-003	0.1594		535.1031	535.1031	0.0131		535.4309
Total	**0.2869**	**0.1339**	**1.8686**	**5.3700e-003**	**0.5876**	**3.8500e-003**	**0.5914**	**0.1558**	**3.5500e-003**	**0.1594**		**535.1031**	**535.1031**	**0.0131**		**535.4309**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	0.00	0.00	0.00		
Congregate Care (Assisted Living)	0.00	0.00	0.00		
Congregate Care (Assisted Living)	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Health Club	14.70	6.60	6.60	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	14.70	6.60	6.60	8.50	72.50	19.00	37	20	43
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Light Industry	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Health Club	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
High Turnover (Sit Down Restaurant)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
User Defined Industrial	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Other Non-Asphalt Surfaces	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Unrefrigerated Warehouse-No Rail	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9880	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.4250	3.4250	3.3400e-003	0.0000	3.5084
Unmitigated	1.9880	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.4250	3.4250	3.3400e-003	0.0000	3.5084

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9300					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0580	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4250	3.4250	3.3400e-003		3.5084
Total	**1.9880**	**0.0218**	**1.8986**	**1.0000e-004**		**0.0105**	**0.0105**		**0.0105**	**0.0105**	**0.0000**	**3.4250**	**3.4250**	**3.3400e-003**	**0.0000**	**3.5084**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9300					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0580	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4250	3.4250	3.3400e-003		3.5084
Total	**1.9880**	**0.0218**	**1.8986**	**1.0000e-004**		**0.0105**	**0.0105**		**0.0105**	**0.0105**	**0.0000**	**3.4250**	**3.4250**	**3.3400e-003**	**0.0000**	**3.5084**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Growlersberg Conservation Camp Replacement Project Construction

El Dorado-Mountain County County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.60	1000sqft	0.13	5,600.00	0
General Office Building	0.88	1000sqft	0.02	880.00	0
User Defined Industrial	2.92	User Defined Unit	0.07	2,920.00	0
User Defined Industrial	1.59	User Defined Unit	0.04	1,592.00	0
General Light Industry	4.76	1000sqft	0.11	4,760.00	0
General Light Industry	7.23	1000sqft	0.17	7,233.00	0
General Light Industry	7.45	1000sqft	0.17	7,445.00	0
User Defined Industrial	3.17	User Defined Unit	0.07	3,174.00	0
User Defined Industrial	0.73	User Defined Unit	0.02	732.00	0
User Defined Industrial	0.11	User Defined Unit	0.00	106.00	0
Unrefrigerated Warehouse-No Rail	7.30	1000sqft	0.17	7,304.00	0
User Defined Industrial	1.95	User Defined Unit	0.04	1,950.00	0
Other Non-Asphalt Surfaces	9.58	Acre	9.58	417,304.80	0
Parking Lot	70.00	Space	0.63	28,000.00	0
Health Club	7.45	1000sqft	0.17	7,450.00	0
High Turnover (Sit Down Restaurant)	8.82	1000sqft	0.20	8,820.00	0
Congregate Care (Assisted Living)	14.54	Dwelling Unit	0.91	14,540.00	136
Congregate Care (Assisted Living)	1.28	Dwelling Unit	0.08	1,280.00	4
Congregate Care (Assisted Living)	7.03	Dwelling Unit	0.44	7,030.00	24

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use - General Office Bld. = Blds. A, P; Health Club = Bld. B; Sit-down Rest. = Bld. C; Congregate Care = Blds. D, K, & N population based on # of beds;
Warehouse = Blds. M; General Light Industrial = Bld. F, H, L; User Defined = E, G, J1, J2, O, Q

Construction Phase - Construction, Paving, Architectural Coating anticipated to be conducted simultaneously

Off-road Equipment -

Off-road Equipment - Updated equipment list with Trenchers to account for underground infrastructure as per PD

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition - Square footage of building demolition updated to match total square footage of all proposed buildings per PD

Architectural Coating -

Vehicle Trips - Construction-only modeling run

Woodstoves - Construction-only modeling run

Landscape Equipment -

Energy Use - Construction-only model run

Water And Wastewater - Construction-Only model run

Solid Waste - Construction-only model run

Trips and VMT -

Area Coating - Construction only modeling run

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	0
tblAreaCoating	Area_EF_Nonresidential_Interior	250	0
tblAreaCoating	Area_EF_Parking	250	0
tblAreaCoating	Area_EF_Residential_Exterior	250	0
tblAreaCoating	Area_EF_Residential_Interior	250	0
tblAreaCoating	Area_Nonresidential_Exterior	29983	0
tblAreaCoating	Area_Nonresidential_Interior	89949	0
tblAreaCoating	Area_Parking	26718	0
tblAreaCoating	Area_Residential_Exterior	15424	0
tblAreaCoating	Area_Residential_Interior	46271	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	300.00	340.00
tblConstructionPhase	NumDays	20.00	340.00
tblConstructionPhase	NumDays	20.00	340.00
tblConstructionPhase	PhaseEndDate	7/17/2023	9/11/2023
tblConstructionPhase	PhaseEndDate	8/14/2023	9/11/2023
tblConstructionPhase	PhaseStartDate	7/18/2023	5/24/2022
tblConstructionPhase	PhaseStartDate	8/15/2023	5/24/2022
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	LightingElect	3.45	0.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	LightingElect	4.74	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24E	1.85	0.00

tblEnergyUse	NT24E	3.98	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24E	15.83	0.00
tblEnergyUse	NT24NG	1,599.00	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	NT24NG	88.55	0.00
tblEnergyUse	T24E	830.63	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24E	3.63	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24E	4.00	0.00
tblEnergyUse	T24NG	2,290.03	0.00
tblEnergyUse	T24NG	3.20	0.00
tblEnergyUse	T24NG	19.54	0.00
tblEnergyUse	T24NG	3.20	0.00
tblEnergyUse	T24NG	27.65	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	12.57	0.00
tblFireplaces	NumberNoFireplace	2.29	0.00
tblFireplaces	NumberWood	8.00	0.00
tblLandUse	LandUseSquareFeet	0.00	2,920.00
tblLandUse	LandUseSquareFeet	0.00	1,592.00
tblLandUse	LandUseSquareFeet	0.00	106.00
tblLandUse	LandUseSquareFeet	0.00	732.00

tblLandUse	LandUseSquareFeet	0.00	1,950.00
tblLandUse	LandUseSquareFeet	0.00	3,174.00
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.02
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	Population	42.00	136.00
tblLandUse	Population	20.00	24.00
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	20.85	0.00
tblSolidWaste	SolidWasteGenerationRate	24.11	0.00
tblSolidWaste	SolidWasteGenerationRate	6.03	0.00
tblSolidWaste	SolidWasteGenerationRate	42.47	0.00
tblSolidWaste	SolidWasteGenerationRate	104.96	0.00
tblSolidWaste	SolidWasteGenerationRate	6.86	0.00
tblVehicleTrips	ST_TR	2.20	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	2.44	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00

tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	2.74	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	1,488,769.49	0.00
tblWater	IndoorWaterUseRate	4,495,500.00	0.00
tblWater	IndoorWaterUseRate	1,151,714.69	0.00
tblWater	IndoorWaterUseRate	440,616.42	0.00
tblWater	IndoorWaterUseRate	2,677,167.34	0.00
tblWater	IndoorWaterUseRate	1,688,125.00	0.00
tblWater	OutdoorWaterUseRate	938,572.07	0.00
tblWater	OutdoorWaterUseRate	705,889.65	0.00
tblWater	OutdoorWaterUseRate	270,055.23	0.00
tblWater	OutdoorWaterUseRate	170,883.02	0.00
tblWoodstoves	NumberCatalytic	1.14	0.00
tblWoodstoves	NumberNoncatalytic	1.14	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	13.1714	44.9295	52.4642	0.1116	18.2962	1.9895	19.9103	9.9917	1.8547	11.4767	0.0000	10,987.3702	10,987.3702	1.9500	0.0000	11,029.3622
2023	12.7593	40.6256	51.1059	0.1100	4.2087	1.7710	5.9797	1.1277	1.6502	2.7779	0.0000	10,825.7439	10,825.7439	1.6594	0.0000	10,867.2287
Maximum	**13.1714**	**44.9295**	**52.4642**	**0.1116**	**18.2962**	**1.9895**	**19.9103**	**9.9917**	**1.8547**	**11.4767**	**0.0000**	**10,987.3702**	**10,987.3702**	**1.9500**	**0.0000**	**11,029.3622**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	13.1714	44.9295	52.4642	0.1116	18.2962	1.9895	19.9103	9.9917	1.8547	11.4767	0.0000	10,987.3702	10,987.3702	1.9500	0.0000	11,029.3622
2023	12.7593	40.6256	51.1059	0.1100	4.2087	1.7710	5.9797	1.1277	1.6502	2.7779	0.0000	10,825.7439	10,825.7439	1.6594	0.0000	10,867.2287
Maximum	**13.1714**	**44.9295**	**52.4642**	**0.1116**	**18.2962**	**1.9895**	**19.9103**	**9.9917**	**1.8547**	**11.4767**	**0.0000**	**10,987.3702**	**10,987.3702**	**1.9500**	**0.0000**	**11,029.3622**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9880	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.4250	3.4250	3.3400e-003	0.0000	3.5084
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.9880**	**0.0218**	**1.8986**	**1.0000e-004**	**0.0000**	**0.0105**	**0.0105**	**0.0000**	**0.0105**	**0.0105**	**0.0000**	**3.4250**	**3.4250**	**3.3400e-003**	**0.0000**	**3.5084**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.9880	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.4250	3.4250	3.3400e-003	0.0000	3.5084
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.9880**	**0.0218**	**1.8986**	**1.0000e-004**	**0.0000**	**0.0105**	**0.0105**	**0.0000**	**0.0105**	**0.0105**	**0.0000**	**3.4250**	**3.4250**	**3.3400e-003**	**0.0000**	**3.5084**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2022	3/28/2022	5	20	
2	Site Preparation	Site Preparation	3/29/2022	4/11/2022	5	10	
3	Grading	Grading	4/12/2022	5/23/2022	5	30	
4	Building Construction	Building Construction	5/24/2022	9/11/2023	5	340	
5	Paving	Paving	5/24/2022	9/11/2023	5	340	
6	Architectural Coating	Architectural Coating	5/24/2022	9/11/2023	5	340	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 10.21

Residential Indoor: 46,271; Residential Outdoor: 15,424; Non-Residential Indoor: 89,949; Non-Residential Outdoor: 29,983; Striped Parking Area: 26,718 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Trenchers	2	8.00	78	0.50
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	377.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	228.00	85.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	46.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1400	0.0000	4.1400	0.6269	0.0000	0.6269			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**4.1400**	**1.2427**	**5.3826**	**0.6269**	**1.1553**	**1.7821**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1507	5.5325	1.6963	0.0150	0.3251	0.0207	0.3458	0.0888	0.0198	0.1086		1,569.4023	1,569.4023	0.0181		1,569.8547
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1064	0.0598	0.5914	1.6400e-003	0.1916	1.3000e-003	0.1929	0.0508	1.1900e-003	0.0520		163.6503	163.6503	4.3200e-003		163.7582
Total	**0.2571**	**5.5923**	**2.2877**	**0.0167**	**0.5167**	**0.0220**	**0.5387**	**0.1396**	**0.0210**	**0.1606**		**1,733.0527**	**1,733.0527**	**0.0224**		**1,733.6129**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1400	0.0000	4.1400	0.6269	0.0000	0.6269			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**4.1400**	**1.2427**	**5.3826**	**0.6269**	**1.1553**	**1.7821**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Hauling	0.1507	5.5325	1.6963	0.0150	0.3251	0.0207	0.3458	0.0888	0.0198	0.1086		1,569.4023	1,569.4023	0.0181		1,569.8547
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1064	0.0598	0.5914	1.6400e-003	0.1916	1.3000e-003	0.1929	0.0508	1.1900e-003	0.0520		163.6503	163.6503	4.3200e-003		163.7582
Total	**0.2571**	**5.5923**	**2.2877**	**0.0167**	**0.5167**	**0.0220**	**0.5387**	**0.1396**	**0.0210**	**0.1606**		**1,733.0527**	**1,733.0527**	**0.0224**		**1,733.6129**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day								lb/day		
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**		**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1277	0.0718	0.7097	1.9700e-003	0.2299	1.5600e-003	0.2315	0.0610	1.4300e-003	0.0624		196.3804	196.3804	5.1800e-003		196.5099
Total	**0.1277**	**0.0718**	**0.7097**	**1.9700e-003**	**0.2299**	**1.5600e-003**	**0.2315**	**0.0610**	**1.4300e-003**	**0.0624**		**196.3804**	**196.3804**	**5.1800e-003**		**196.5099**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
Total	**3.1701**	**33.0835**	**19.6978**	**0.0380**	**18.0663**	**1.6126**	**19.6788**	**9.9307**	**1.4836**	**11.4143**	**0.0000**	**3,686.0619**	**3,686.0619**	**1.1922**		**3,715.8655**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1277	0.0718	0.7097	1.9700e-003	0.2299	1.5600e-003	0.2315	0.0610	1.4300e-003	0.0624		196.3804	196.3804	5.1800e-003		196.5099
Total	**0.1277**	**0.0718**	**0.7097**	**1.9700e-003**	**0.2299**	**1.5600e-003**	**0.2315**	**0.0610**	**1.4300e-003**	**0.0624**		**196.3804**	**196.3804**	**5.1800e-003**		**196.5099**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1419	0.0798	0.7885	2.1900e-003	0.2555	1.7300e-003	0.2572	0.0678	1.5900e-003	0.0693		218.2005	218.2005	5.7500e-003		218.3443
Total	**0.1419**	**0.0798**	**0.7885**	**2.1900e-003**	**0.2555**	**1.7300e-003**	**0.2572**	**0.0678**	**1.5900e-003**	**0.0693**		**218.2005**	**218.2005**	**5.7500e-003**		**218.3443**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**8.6733**	**1.6349**	**10.3082**	**3.5965**	**1.5041**	**5.1006**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1419	0.0798	0.7885	2.1900e-003	0.2555	1.7300e-003	0.2572	0.0678	1.5900e-003	0.0693		218.2005	218.2005	5.7500e-003		218.3443
Total	**0.1419**	**0.0798**	**0.7885**	**2.1900e-003**	**0.2555**	**1.7300e-003**	**0.2572**	**0.0678**	**1.5900e-003**	**0.0693**		**218.2005**	**218.2005**	**5.7500e-003**		**218.3443**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4376	22.4088	21.5873	0.0337		1.2903	1.2903		1.2040	1.2040		3,211.5019	3,211.5019	0.8245		3,232.1141
Total	**2.4376**	**22.4088**	**21.5873**	**0.0337**		**1.2903**	**1.2903**		**1.2040**	**1.2040**		**3,211.5019**	**3,211.5019**	**0.8245**		**3,232.1141**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2711	8.8347	3.0886	0.0204	0.5173	0.0246	0.5418	0.1487	0.0235	0.1722		2,133.763 3	2,133.763 3	0.0397		2,134.756 6
Worker	1.6172	0.9094	8.9891	0.0250	2.9123	0.0197	2.9320	0.7723	0.0182	0.7905		2,487.485 2	2,487.485 2	0.0656		2,489.124 9
Total	**1.8883**	**9.7441**	**12.0778**	**0.0454**	**3.4295**	**0.0443**	**3.4738**	**0.9210**	**0.0417**	**0.9627**		**4,621.248 5**	**4,621.248 5**	**0.1053**		**4,623.881 5**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4376	22.4088	21.5873	0.0337		1.2903	1.2903		1.2040	1.2040	0.0000	3,211.501 9	3,211.501 9	0.8245		3,232.114 1
Total	**2.4376**	**22.4088**	**21.5873**	**0.0337**		**1.2903**	**1.2903**		**1.2040**	**1.2040**	**0.0000**	**3,211.501 9**	**3,211.501 9**	**0.8245**		**3,232.114 1**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2711	8.8347	3.0886	0.0204	0.5173	0.0246	0.5418	0.1487	0.0235	0.1722		2,133.763 3	2,133.763 3	0.0397		2,134.756 6
Worker	1.6172	0.9094	8.9891	0.0250	2.9123	0.0197	2.9320	0.7723	0.0182	0.7905		2,487.485 2	2,487.485 2	0.0656		2,489.124 9
Total	**1.8883**	**9.7441**	**12.0778**	**0.0454**	**3.4295**	**0.0443**	**3.4738**	**0.9210**	**0.0417**	**0.9627**		**4,621.248 5**	**4,621.248 5**	**0.1053**		**4,623.881 5**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2696	20.8836	21.4541	0.0337		1.1506	1.1506		1.0732	1.0732		3,212.881 7	3,212.881 7	0.8206		3,233.395 4
Total	**2.2696**	**20.8836**	**21.4541**	**0.0337**		**1.1506**	**1.1506**		**1.0732**	**1.0732**		**3,212.881 7**	**3,212.881 7**	**0.8206**		**3,233.395 4**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2210	7.2092	2.8556	0.0200	0.5173	0.0152	0.5325	0.1487	0.0146	0.1633		2,087.812 7	2,087.812 7	0.0339		2,088.660 6
Worker	1.5296	0.8191	8.2055	0.0240	2.9123	0.0191	2.9314	0.7723	0.0176	0.7899		2,395.197 1	2,395.197 1	0.0585		2,396.658 7
Total	**1.7506**	**8.0283**	**11.0611**	**0.0440**	**3.4296**	**0.0343**	**3.4639**	**0.9210**	**0.0321**	**0.9532**		**4,483.009 8**	**4,483.009 8**	**0.0924**		**4,485.319 4**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2696	20.8836	21.4541	0.0337		1.1506	1.1506		1.0732	1.0732	0.0000	3,212.881 7	3,212.881 7	0.8206		3,233.395 4
Total	**2.2696**	**20.8836**	**21.4541**	**0.0337**		**1.1506**	**1.1506**		**1.0732**	**1.0732**	**0.0000**	**3,212.881 7**	**3,212.881 7**	**0.8206**		**3,233.395 4**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2210	7.2092	2.8556	0.0200	0.5173	0.0152	0.5325	0.1487	0.0146	0.1633		2,087.8127	2,087.8127	0.0339		2,088.6606
Worker	1.5296	0.8191	8.2055	0.0240	2.9123	0.0191	2.9314	0.7723	0.0176	0.7899		2,395.1971	2,395.1971	0.0585		2,396.6587
Total	**1.7506**	**8.0283**	**11.0611**	**0.0440**	**3.4296**	**0.0343**	**3.4639**	**0.9210**	**0.0321**	**0.9532**		**4,483.0098**	**4,483.0098**	**0.0924**		**4,485.3194**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	4.8500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1077**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1064	0.0598	0.5914	1.6400e-003	0.1916	1.3000e-003	0.1929	0.0508	1.1900e-003	0.0520		163.6503	163.6503	4.3200e-003		163.7582
Total	**0.1064**	**0.0598**	**0.5914**	**1.6400e-003**	**0.1916**	**1.3000e-003**	**0.1929**	**0.0508**	**1.1900e-003**	**0.0520**		**163.6503**	**163.6503**	**4.3200e-003**		**163.7582**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.660 3	2,207.660 3	0.7140		2,225.510 4
Paving	4.8500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1077**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.660 3**	**2,207.660 3**	**0.7140**		**2,225.510 4**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1064	0.0598	0.5914	1.6400e-003	0.1916	1.3000e-003	0.1929	0.0508	1.1900e-003	0.0520		163.6503	163.6503	4.3200e-003		163.7582
Total	**0.1064**	**0.0598**	**0.5914**	**1.6400e-003**	**0.1916**	**1.3000e-003**	**0.1929**	**0.0508**	**1.1900e-003**	**0.0520**		**163.6503**	**163.6503**	**4.3200e-003**		**163.7582**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	4.8500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0376**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1006	0.0539	0.5398	1.5800e-003	0.1916	1.2600e-003	0.1929	0.0508	1.1600e-003	0.0520		157.5788	157.5788	3.8500e-003		157.6749
Total	**0.1006**	**0.0539**	**0.5398**	**1.5800e-003**	**0.1916**	**1.2600e-003**	**0.1929**	**0.0508**	**1.1600e-003**	**0.0520**		**157.5788**	**157.5788**	**3.8500e-003**		**157.6749**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	4.8500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0376**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1006	0.0539	0.5398	1.5800e-003	0.1916	1.2600e-003	0.1929	0.0508	1.1600e-003	0.0520		157.5788	157.5788	3.8500e-003		157.6749
Total	**0.1006**	**0.0539**	**0.5398**	**1.5800e-003**	**0.1916**	**1.2600e-003**	**0.1929**	**0.0508**	**1.1600e-003**	**0.0520**		**157.5788**	**157.5788**	**3.8500e-003**		**157.6749**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**7.3051**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3263	0.1835	1.8136	5.0400e-003	0.5876	3.9800e-003	0.5915	0.1558	3.6600e-003	0.1595		501.8611	501.8611	0.0132		502.1919
Total	**0.3263**	**0.1835**	**1.8136**	**5.0400e-003**	**0.5876**	**3.9800e-003**	**0.5915**	**0.1558**	**3.6600e-003**	**0.1595**		**501.8611**	**501.8611**	**0.0132**		**502.1919**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**7.3051**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3263	0.1835	1.8136	5.0400e-003	0.5876	3.9800e-003	0.5915	0.1558	3.6600e-003	0.1595		501.8611	501.8611	0.0132		502.1919
Total	**0.3263**	**0.1835**	**1.8136**	**5.0400e-003**	**0.5876**	**3.9800e-003**	**0.5915**	**0.1558**	**3.6600e-003**	**0.1595**		**501.8611**	**501.8611**	**0.0132**		**502.1919**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**7.2922**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3086	0.1653	1.6555	4.8500e-003	0.5876	3.8500e-003	0.5914	0.1558	3.5500e-003	0.1594		483.2415	483.2415	0.0118		483.5364
Total	**0.3086**	**0.1653**	**1.6555**	**4.8500e-003**	**0.5876**	**3.8500e-003**	**0.5914**	**0.1558**	**3.5500e-003**	**0.1594**		**483.2415**	**483.2415**	**0.0118**		**483.5364**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.1006					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**7.2922**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3086	0.1653	1.6555	4.8500e-003	0.5876	3.8500e-003	0.5914	0.1558	3.5500e-003	0.1594		483.2415	483.2415	0.0118		483.5364
Total	**0.3086**	**0.1653**	**1.6555**	**4.8500e-003**	**0.5876**	**3.8500e-003**	**0.5914**	**0.1558**	**3.5500e-003**	**0.1594**		**483.2415**	**483.2415**	**0.0118**		**483.5364**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	0.00	0.00	0.00		
Congregate Care (Assisted Living)	0.00	0.00	0.00		
Congregate Care (Assisted Living)	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Health Club	14.70	6.60	6.60	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	14.70	6.60	6.60	8.50	72.50	19.00	37	20	43
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Light Industry	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Health Club	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
High Turnover (Sit Down Restaurant)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
User Defined Industrial	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Other Non-Asphalt Surfaces	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Unrefrigerated Warehouse-No Rail	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9880	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.4250	3.4250	3.3400e-003	0.0000	3.5084
Unmitigated	1.9880	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105	0.0000	3.4250	3.4250	3.3400e-003	0.0000	3.5084

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9300					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0580	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4250	3.4250	3.3400e-003		3.5084
Total	**1.9880**	**0.0218**	**1.8986**	**1.0000e-004**		**0.0105**	**0.0105**		**0.0105**	**0.0105**	**0.0000**	**3.4250**	**3.4250**	**3.3400e-003**	**0.0000**	**3.5084**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9300					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0580	0.0218	1.8986	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4250	3.4250	3.3400e-003		3.5084
Total	**1.9880**	**0.0218**	**1.8986**	**1.0000e-004**		**0.0105**	**0.0105**		**0.0105**	**0.0105**	**0.0000**	**3.4250**	**3.4250**	**3.3400e-003**	**0.0000**	**3.5084**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Growlersberg Conservation Camp Replacement Project Operations

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.60	1000sqft	0.13	5,601.00	0
General Office Building	0.88	1000sqft	0.02	884.00	0
General Light Industry	4.76	1000sqft	0.11	4,760.00	0
General Light Industry	7.23	1000sqft	0.17	7,233.00	0
General Light Industry	7.45	1000sqft	0.17	7,445.00	0
Unrefrigerated Warehouse-No Rail	7.30	1000sqft	0.17	7,304.00	0
User Defined Industrial	2.92	User Defined Unit	0.07	2,920.00	0
User Defined Industrial	1.59	User Defined Unit	0.04	1,592.00	0
User Defined Industrial	3.17	User Defined Unit	0.07	3,174.00	0
User Defined Industrial	0.73	User Defined Unit	0.02	732.00	0
User Defined Industrial	0.11	User Defined Unit	0.00	106.00	0
User Defined Industrial	1.95	User Defined Unit	0.04	1,950.00	0
Parking Lot	70.00	Space	0.63	28,000.00	0
Health Club	7.45	1000sqft	0.17	7,445.00	0
High Turnover (Sit Down Restaurant)	8.82	1000sqft	0.20	8,824.00	0
Congregate Care (Assisted Living)	14.54	Dwelling Unit	0.91	14,544.00	136
Congregate Care (Assisted Living)	1.28	Dwelling Unit	0.08	1,280.00	4
Congregate Care (Assisted Living)	7.03	Dwelling Unit	0.44	7,030.00	24

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - General Office Bld. = Blds. A, P; Health Club = Bld. B; Sit-down Rest. = Bld. C; Congregate Care = Blds. D, K, & N population based on # of beds; Warehouse = Blds. M; General Light Industrial = Bld. F, H, L; User Defined = E, G, J1, J2, O, Q

Construction Phase - Existing conditions model run only

Off-road Equipment - Existing conditions model run only

Trips and VMT - Existing Conditions model run

Demolition -

Architectural Coating - Existing conditions model run only

Vehicle Trips - Worker trips updated to match PD (14 CalFire employees and 12 CDCR employees)

Woodstoves - No wood fireplaces allowed in new construction

Energy Use - Using historic data to show existing conditions, User defined industrial energy usage = 1/2 the energy use of general light industrial to show conservative energy useage for storage buildings (per square foot).

Water And Wastewater -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	29,985.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	89,955.00	0.00
tblArchitecturalCoating	ConstArea_Parking	1,680.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	15,426.00	0.00

tblArchitecturalCoating	ConstArea_Residential_Interior	46,279.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblEnergyUse	LightingElect	0.00	0.45
tblEnergyUse	NT24E	0.00	0.46
tblEnergyUse	NT24NG	0.00	0.08
tblEnergyUse	T24E	0.00	0.15
tblEnergyUse	T24NG	0.00	0.80
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberNoFireplace	2.29	0.00
tblFireplaces	NumberWood	8.00	0.00
tblLandUse	LandUseSquareFeet	880.00	884.00
tblLandUse	LandUseSquareFeet	5,600.00	5,601.00
tblLandUse	LandUseSquareFeet	7,230.00	7,233.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00
tblLandUse	LandUseSquareFeet	7,300.00	7,304.00
tblLandUse	LandUseSquareFeet	0.00	106.00
tblLandUse	LandUseSquareFeet	0.00	732.00
tblLandUse	LandUseSquareFeet	0.00	1,592.00
tblLandUse	LandUseSquareFeet	0.00	1,950.00
tblLandUse	LandUseSquareFeet	0.00	2,920.00
tblLandUse	LandUseSquareFeet	0.00	3,174.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00

tblLandUse	LandUseSquareFeet	8,820.00	8,824.00
tblLandUse	LandUseSquareFeet	14,540.00	14,544.00
tblLandUse	LotAcreage	0.00	0.02
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	Population	42.00	136.00
tblLandUse	Population	20.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	11.00	0.00
tblVehicleTrips	ST_TR	2.20	2.28
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	2.44	2.28
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	2.74	2.28
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00

tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.1954	0.8992	17.6019	0.0545		2.5795	2.5795		2.5795	2.5795	371.7239	801.9876	1,173.711 5	1.7564	0.0146	1,221.983 6
Energy	0.0397	0.3597	0.2929	2.1700e-003		0.0275	0.0275		0.0275	0.0275		433.3623	433.3623	8.3100e-003	7.9400e-003	435.9375
Mobile	0.1084	0.3150	1.3037	4.3100e-003	0.4105	3.7200e-003	0.4142	0.1096	3.4700e-003	0.1131		432.6953	432.6953	0.0119		432.9914
Total	**4.3435**	**1.5740**	**19.1984**	**0.0609**	**0.4105**	**2.6107**	**3.0211**	**0.1096**	**2.6104**	**2.7201**	**371.7239**	**1,668.045 2**	**2,039.769 1**	**1.7765**	**0.0226**	**2,090.912 5**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.1954	0.8992	17.6019	0.0545		2.5795	2.5795		2.5795	2.5795	371.7239	801.9876	1,173.711 5	1.7564	0.0146	1,221.983 6
Energy	0.0351	0.3183	0.2597	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.3285	383.3285	7.3500e-003	7.0300e-003	385.6065
Mobile	0.1084	0.3150	1.3037	4.3100e-003	0.4105	3.7200e-003	0.4142	0.1096	3.4700e-003	0.1131		432.6953	432.6953	0.0119		432.9914
Total	**4.3389**	**1.5325**	**19.1653**	**0.0607**	**0.4105**	**2.6075**	**3.0180**	**0.1096**	**2.6073**	**2.7169**	**371.7239**	**1,618.011 4**	**1,989.735 3**	**1.7756**	**0.0217**	**2,040.581 5**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.11	2.63	0.17	0.41	0.00	0.12	0.10	0.00	0.12	0.12	0.00	3.00	2.45	0.05	4.03	2.41

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/1/2022	2/28/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.63

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1084	0.3150	1.3037	4.3100e-003	0.4105	3.7200e-003	0.4142	0.1096	3.4700e-003	0.1131		432.6953	432.6953	0.0119		432.9914
Unmitigated	0.1084	0.3150	1.3037	4.3100e-003	0.4105	3.7200e-003	0.4142	0.1096	3.4700e-003	0.1131		432.6953	432.6953	0.0119		432.9914

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	33.15	33.15	33.15	123,446	123,446
Congregate Care (Assisted Living)	2.92	2.92	2.92	10,867	10,867
Congregate Care (Assisted Living)	16.03	16.03	16.03	59,685	59,685
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Total	52.10	52.10	52.10	193,999	193,999

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Health Club	14.70	6.60	6.60	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	14.70	6.60	6.60	8.50	72.50	19.00	37	20	43
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Light Industry	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Health Club	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
High Turnover (Sit Down Restaurant)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Unrefrigerated Warehouse-No Rail	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
User Defined Industrial	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0351	0.3183	0.2597	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.3285	383.3285	7.3500e-003	7.0300e-003	385.6065
NaturalGas Unmitigated	0.0397	0.3597	0.2929	2.1700e-003		0.0275	0.0275		0.0275	0.0275		433.3623	433.3623	8.3100e-003	7.9400e-003	435.9375

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	13.6382	1.5000e-004	1.2600e-003	5.3000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6045	1.6045	3.0000e-005	3.0000e-005	1.6140
Congregate Care (Assisted Living)	154.922	1.6700e-003	0.0143	6.0800e-003	9.0000e-005		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003		18.2261	18.2261	3.5000e-004	3.3000e-004	18.3344
Congregate Care (Assisted Living)	74.9038	8.1000e-004	6.9000e-003	2.9400e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8122	8.8122	1.7000e-004	1.6000e-004	8.8646
General Light Industry	45.7742	4.9000e-004	4.4900e-003	3.7700e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		5.3852	5.3852	1.0000e-004	1.0000e-004	5.4172
General Light Industry	69.5557	7.5000e-004	6.8200e-003	5.7300e-003	4.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004		8.1830	8.1830	1.6000e-004	1.5000e-004	8.2317
General Light Industry	71.5944	7.7000e-004	7.0200e-003	5.9000e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.4229	8.4229	1.6000e-004	1.5000e-004	8.4729
General Office Building	299.845	3.2300e-003	0.0294	0.0247	1.8000e-004		2.2300e-003	2.2300e-003		2.2300e-003	2.2300e-003		35.2759	35.2759	6.8000e-004	6.5000e-004	35.4856
General Office Building	47.3243	5.1000e-004	4.6400e-003	3.9000e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		5.5676	5.5676	1.1000e-004	1.0000e-004	5.6007
Health Club	71.5944	7.7000e-004	7.0200e-003	5.9000e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.4229	8.4229	1.6000e-004	1.5000e-004	8.4729
High Turnover (Sit Down Restaurant)	2809.17	0.0303	0.2754	0.2313	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.4912	330.4912	6.3300e-003	6.0600e-003	332.4551
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0.255562	0.0000	3.0000e-005	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		0.0301	0.0301	0.0000	0.0000	0.0302
User Defined Industrial	1.76482	2.0000e-005	1.7000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		0.2076	0.2076	0.0000	0.0000	0.2089

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	3.83825	4.0000e-005	3.8000e-004	3.2000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.4516	0.4516	1.0000e-005	1.0000e-005	0.4542
User Defined Industrial	4.70137	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5531	0.5531	1.0000e-005	1.0000e-005	0.5564
User Defined Industrial	7.04	8.0000e-005	6.9000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.8282	0.8282	2.0000e-005	2.0000e-005	0.8332
User Defined Industrial	7.65238	8.0000e-005	7.5000e-004	6.3000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.9003	0.9003	2.0000e-005	2.0000e-005	0.9056
Total		**0.0397**	**0.3597**	**0.2929**	**2.1500e-003**		**0.0274**	**0.0274**		**0.0274**	**0.0274**		**433.3623**	**433.3623**	**8.3100e-003**	**7.9400e-003**	**435.9376**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	0.127554	1.3800e-003	0.0118	5.0000e-003	8.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004		15.0064	15.0064	2.9000e-004	2.8000e-004	15.0956
Congregate Care (Assisted Living)	0.011229	1.2000e-004	1.0300e-003	4.4000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.3211	1.3211	3.0000e-005	2.0000e-005	1.3289
Congregate Care (Assisted Living)	0.0616718	6.7000e-004	5.6800e-003	2.4200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		7.2555	7.2555	1.4000e-004	1.3000e-004	7.2986
General Light Industry	0.0332548	3.6000e-004	3.2600e-003	2.7400e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		3.9123	3.9123	7.0000e-005	7.0000e-005	3.9356
General Light Industry	0.0505319	5.4000e-004	4.9500e-003	4.1600e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004		5.9449	5.9449	1.1000e-004	1.1000e-004	5.9803
General Light Industry	0.052013	5.6000e-004	5.1000e-003	4.2800e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.1192	6.1192	1.2000e-004	1.1000e-004	6.1555
General Office Building	0.033127	3.6000e-004	3.2500e-003	2.7300e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		3.8973	3.8973	7.0000e-005	7.0000e-005	3.9205

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.209892	2.2600e-003	0.0206	0.0173	1.2000e-004		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003		24.6931	24.6931	4.7000e-004	4.5000e-004	24.8399
Health Club	0.052013	5.6000e-004	5.1000e-003	4.2800e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.1192	6.1192	1.2000e-004	1.1000e-004	6.1555
High Turnover (Sit Down Restaurant)	2.60864	0.0281	0.2558	0.2148	1.5300e-003		0.0194	0.0194		0.0194	0.0194		306.8989	306.8989	5.8800e-003	5.6300e-003	308.7226
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0.000185863	0.0000	2.0000e-005	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		0.0219	0.0219	0.0000	0.0000	0.0220
User Defined Industrial	0.00128351	1.0000e-005	1.3000e-004	1.1000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		0.1510	0.1510	0.0000	0.0000	0.1519
User Defined Industrial	0.00279145	3.0000e-005	2.7000e-004	2.3000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3284	0.3284	1.0000e-005	1.0000e-005	0.3304
User Defined Industrial	0.00341918	4.0000e-005	3.4000e-004	2.8000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.4023	0.4023	1.0000e-005	1.0000e-005	0.4047
User Defined Industrial	0.00512	6.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.6024	0.6024	1.0000e-005	1.0000e-005	0.6059
User Defined Industrial	0.00556537	6.0000e-005	5.5000e-004	4.6000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.6548	0.6548	1.0000e-005	1.0000e-005	0.6586
Total		**0.0351**	**0.3183**	**0.2597**	**1.9100e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**383.3285**	**383.3285**	**7.3400e-003**	**7.0200e-003**	**385.6065**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.1954	0.8992	17.6019	0.0545		2.5795	2.5795		2.5795	2.5795	371.7239	801.9876	1,173.7115	1.7564	0.0146	1,221.9836
Unmitigated	4.1954	0.8992	17.6019	0.0545		2.5795	2.5795		2.5795	2.5795	371.7239	801.9876	1,173.7115	1.7564	0.0146	1,221.9836

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7824					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7732	0.8774	15.7043	0.0544		2.5690	2.5690		2.5690	2.5690	371.7239	798.5647	1,170.2886	1.7530	0.0146	1,218.4774
Landscaping	0.0579	0.0218	1.8976	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4229	3.4229	3.3300e-003		3.5061
Total	**4.1954**	**0.8992**	**17.6019**	**0.0545**		**2.5795**	**2.5795**		**2.5795**	**2.5795**	**371.7239**	**801.9876**	**1,173.7115**	**1.7564**	**0.0146**	**1,221.9836**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7824					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7732	0.8774	15.7043	0.0544		2.5690	2.5690		2.5690	2.5690	371.7239	798.5647	1,170.2886	1.7530	0.0146	1,218.4774
Landscaping	0.0579	0.0218	1.8976	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4229	3.4229	3.3300e-003		3.5061
Total	**4.1954**	**0.8992**	**17.6019**	**0.0545**		**2.5795**	**2.5795**		**2.5795**	**2.5795**	**371.7239**	**801.9876**	**1,173.7115**	**1.7564**	**0.0146**	**1,221.9836**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Growlersberg Conservation Camp Replacement Project Operations

El Dorado-Mountain County County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.60	1000sqft	0.13	5,601.00	0
General Office Building	0.88	1000sqft	0.02	884.00	0
General Light Industry	4.76	1000sqft	0.11	4,760.00	0
General Light Industry	7.23	1000sqft	0.17	7,233.00	0
General Light Industry	7.45	1000sqft	0.17	7,445.00	0
Unrefrigerated Warehouse-No Rail	7.30	1000sqft	0.17	7,304.00	0
User Defined Industrial	2.92	User Defined Unit	0.07	2,920.00	0
User Defined Industrial	1.59	User Defined Unit	0.04	1,592.00	0
User Defined Industrial	3.17	User Defined Unit	0.07	3,174.00	0
User Defined Industrial	0.73	User Defined Unit	0.02	732.00	0
User Defined Industrial	0.11	User Defined Unit	0.00	106.00	0
User Defined Industrial	1.95	User Defined Unit	0.04	1,950.00	0
Parking Lot	70.00	Space	0.63	28,000.00	0
Health Club	7.45	1000sqft	0.17	7,445.00	0
High Turnover (Sit Down Restaurant)	8.82	1000sqft	0.20	8,824.00	0
Congregate Care (Assisted Living)	14.54	Dwelling Unit	0.91	14,544.00	136
Congregate Care (Assisted Living)	1.28	Dwelling Unit	0.08	1,280.00	4
Congregate Care (Assisted Living)	7.03	Dwelling Unit	0.44	7,030.00	24

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - General Office Bld. = Blds. A, P; Health Club = Bld. B; Sit-down Rest. = Bld. C; Congregate Care = Blds. D, K, & N population based on # of beds; Warehouse = Blds. M; General Light Industrial = Bld. F, H, L; User Defined = E, G, J1, J2, O, Q

Construction Phase - Existing conditions model run only

Off-road Equipment - Existing conditions model run only

Trips and VMT - Existing Conditions model run

Demolition -

Architectural Coating - Existing conditions model run only

Vehicle Trips - Worker trips updated to match PD (14 CalFire employees and 12 CDCR employees)

Woodstoves - No wood fireplaces allowed in new construction

Energy Use - Using historic data to show existing conditions, User defined industrial energy usage = 1/2 the energy use of general light industrial to show conservative energy useage for storage buildings (per square foot).

Water And Wastewater -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	29,985.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	89,955.00	0.00
tblArchitecturalCoating	ConstArea_Parking	1,680.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	15,426.00	0.00

tblArchitecturalCoating	ConstArea_Residential_Interior	46,279.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblEnergyUse	LightingElect	0.00	0.45
tblEnergyUse	NT24E	0.00	0.46
tblEnergyUse	NT24NG	0.00	0.08
tblEnergyUse	T24E	0.00	0.15
tblEnergyUse	T24NG	0.00	0.80
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberNoFireplace	2.29	0.00
tblFireplaces	NumberWood	8.00	0.00
tblLandUse	LandUseSquareFeet	880.00	884.00
tblLandUse	LandUseSquareFeet	5,600.00	5,601.00
tblLandUse	LandUseSquareFeet	7,230.00	7,233.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00
tblLandUse	LandUseSquareFeet	7,300.00	7,304.00
tblLandUse	LandUseSquareFeet	0.00	106.00
tblLandUse	LandUseSquareFeet	0.00	732.00
tblLandUse	LandUseSquareFeet	0.00	1,592.00
tblLandUse	LandUseSquareFeet	0.00	1,950.00
tblLandUse	LandUseSquareFeet	0.00	2,920.00
tblLandUse	LandUseSquareFeet	0.00	3,174.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00

tblLandUse	LandUseSquareFeet	8,820.00	8,824.00
tblLandUse	LandUseSquareFeet	14,540.00	14,544.00
tblLandUse	LotAcreage	0.00	0.02
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	Population	42.00	136.00
tblLandUse	Population	20.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	11.00	0.00
tblVehicleTrips	ST_TR	2.20	2.28
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	2.44	2.28
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	2.74	2.28
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00

tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.1954	0.8992	17.6019	0.0545		2.5795	2.5795		2.5795	2.5795	371.7239	801.9876	1,173.7115	1.7564	0.0146	1,221.9836
Energy	0.0397	0.3597	0.2929	2.1700e-003		0.0275	0.0275		0.0275	0.0275		433.3623	433.3623	8.3100e-003	7.9400e-003	435.9375
Mobile	0.0888	0.3451	1.2328	3.9700e-003	0.4105	3.7300e-003	0.4142	0.1096	3.4800e-003	0.1131		398.4165	398.4165	0.0115		398.7045
Total	**4.3239**	**1.6040**	**19.1276**	**0.0606**	**0.4105**	**2.6107**	**3.0212**	**0.1096**	**2.6105**	**2.7201**	**371.7239**	**1,633.7664**	**2,005.4903**	**1.7762**	**0.0226**	**2,056.6256**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.1954	0.8992	17.6019	0.0545		2.5795	2.5795		2.5795	2.5795	371.7239	801.9876	1,173.7115	1.7564	0.0146	1,221.9836
Energy	0.0351	0.3183	0.2597	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.3285	383.3285	7.3500e-003	7.0300e-003	385.6065
Mobile	0.0888	0.3451	1.2328	3.9700e-003	0.4105	3.7300e-003	0.4142	0.1096	3.4800e-003	0.1131		398.4165	398.4165	0.0115		398.7045
Total	**4.3194**	**1.5626**	**19.0944**	**0.0604**	**0.4105**	**2.6075**	**3.0180**	**0.1096**	**2.6073**	**2.7169**	**371.7239**	**1,583.7326**	**1,955.4565**	**1.7752**	**0.0217**	**2,006.2945**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.11	2.58	0.17	0.41	0.00	0.12	0.10	0.00	0.12	0.12	0.00	3.06	2.49	0.05	4.03	2.45

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/1/2022	2/28/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.63

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0888	0.3451	1.2328	3.9700e-003	0.4105	3.7300e-003	0.4142	0.1096	3.4800e-003	0.1131		398.4165	398.4165	0.0115		398.7045
Unmitigated	0.0888	0.3451	1.2328	3.9700e-003	0.4105	3.7300e-003	0.4142	0.1096	3.4800e-003	0.1131		398.4165	398.4165	0.0115		398.7045

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	33.15	33.15	33.15	123,446	123,446
Congregate Care (Assisted Living)	2.92	2.92	2.92	10,867	10,867
Congregate Care (Assisted Living)	16.03	16.03	16.03	59,685	59,685
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Total	52.10	52.10	52.10	193,999	193,999

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Health Club	14.70	6.60	6.60	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	14.70	6.60	6.60	8.50	72.50	19.00	37	20	43
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Light Industry	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Health Club	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
High Turnover (Sit Down Restaurant)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Unrefrigerated Warehouse-No Rail	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
User Defined Industrial	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0351	0.3183	0.2597	1.9200e-003		0.0243	0.0243		0.0243	0.0243		383.3285	383.3285	7.3500e-003	7.0300e-003	385.6065
NaturalGas Unmitigated	0.0397	0.3597	0.2929	2.1700e-003		0.0275	0.0275		0.0275	0.0275		433.3623	433.3623	8.3100e-003	7.9400e-003	435.9375

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	13.6382	1.5000e-004	1.2600e-003	5.3000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6045	1.6045	3.0000e-005	3.0000e-005	1.6140
Congregate Care (Assisted Living)	154.922	1.6700e-003	0.0143	6.0800e-003	9.0000e-005		1.1500e-003	1.1500e-003		1.1500e-003	1.1500e-003		18.2261	18.2261	3.5000e-004	3.3000e-004	18.3344
Congregate Care (Assisted Living)	74.9038	8.1000e-004	6.9000e-003	2.9400e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004		8.8122	8.8122	1.7000e-004	1.6000e-004	8.8646
General Light Industry	45.7742	4.9000e-004	4.4900e-003	3.7700e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		5.3852	5.3852	1.0000e-004	1.0000e-004	5.4172
General Light Industry	69.5557	7.5000e-004	6.8200e-003	5.7300e-003	4.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004		8.1830	8.1830	1.6000e-004	1.5000e-004	8.2317
General Light Industry	71.5944	7.7000e-004	7.0200e-003	5.9000e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.4229	8.4229	1.6000e-004	1.5000e-004	8.4729
General Office Building	299.845	3.2300e-003	0.0294	0.0247	1.8000e-004		2.2300e-003	2.2300e-003		2.2300e-003	2.2300e-003		35.2759	35.2759	6.8000e-004	6.5000e-004	35.4856
General Office Building	47.3243	5.1000e-004	4.6400e-003	3.9000e-003	3.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004		5.5676	5.5676	1.1000e-004	1.0000e-004	5.6007
Health Club	71.5944	7.7000e-004	7.0200e-003	5.9000e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.4229	8.4229	1.6000e-004	1.5000e-004	8.4729
High Turnover (Sit Down Restaurant)	2809.17	0.0303	0.2754	0.2313	1.6500e-003		0.0209	0.0209		0.0209	0.0209		330.4912	330.4912	6.3300e-003	6.0600e-003	332.4551
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0.255562	0.0000	3.0000e-005	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		0.0301	0.0301	0.0000	0.0000	0.0302
User Defined Industrial	1.76482	2.0000e-005	1.7000e-004	1.5000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		0.2076	0.2076	0.0000	0.0000	0.2089

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	3.83825	4.0000e-005	3.8000e-004	3.2000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.4516	0.4516	1.0000e-005	1.0000e-005	0.4542
User Defined Industrial	4.70137	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.5531	0.5531	1.0000e-005	1.0000e-005	0.5564
User Defined Industrial	7.04	8.0000e-005	6.9000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.8282	0.8282	2.0000e-005	2.0000e-005	0.8332
User Defined Industrial	7.65238	8.0000e-005	7.5000e-004	6.3000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.9003	0.9003	2.0000e-005	2.0000e-005	0.9056
Total		**0.0397**	**0.3597**	**0.2929**	**2.1500e-003**		**0.0274**	**0.0274**		**0.0274**	**0.0274**		**433.3623**	**433.3623**	**8.3100e-003**	**7.9400e-003**	**435.9376**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Congregate Care (Assisted Living)	0.127554	1.3800e-003	0.0118	5.0000e-003	8.0000e-005		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004		15.0064	15.0064	2.9000e-004	2.8000e-004	15.0956
Congregate Care (Assisted Living)	0.011229	1.2000e-004	1.0300e-003	4.4000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		1.3211	1.3211	3.0000e-005	2.0000e-005	1.3289
Congregate Care (Assisted Living)	0.0616718	6.7000e-004	5.6800e-003	2.4200e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		7.2555	7.2555	1.4000e-004	1.3000e-004	7.2986
General Light Industry	0.0332548	3.6000e-004	3.2600e-003	2.7400e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		3.9123	3.9123	7.0000e-005	7.0000e-005	3.9356
General Light Industry	0.0505319	5.4000e-004	4.9500e-003	4.1600e-003	3.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004		5.9449	5.9449	1.1000e-004	1.1000e-004	5.9803
General Light Industry	0.052013	5.6000e-004	5.1000e-003	4.2800e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.1192	6.1192	1.2000e-004	1.1000e-004	6.1555
General Office Building	0.033127	3.6000e-004	3.2500e-003	2.7300e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004		3.8973	3.8973	7.0000e-005	7.0000e-005	3.9205

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.209892	2.2600e-003	0.0206	0.0173	1.2000e-004		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003		24.6931	24.6931	4.7000e-004	4.5000e-004	24.8399
Health Club	0.052013	5.6000e-004	5.1000e-003	4.2800e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.1192	6.1192	1.2000e-004	1.1000e-004	6.1555
High Turnover (Sit Down Restaurant)	2.60864	0.0281	0.2558	0.2148	1.5300e-003		0.0194	0.0194		0.0194	0.0194		306.8989	306.8989	5.8800e-003	5.6300e-003	308.7226
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0.000185863	0.0000	2.0000e-005	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		0.0219	0.0219	0.0000	0.0000	0.0220
User Defined Industrial	0.00128351	1.0000e-005	1.3000e-004	1.1000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		0.1510	0.1510	0.0000	0.0000	0.1519
User Defined Industrial	0.00279145	3.0000e-005	2.7000e-004	2.3000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.3284	0.3284	1.0000e-005	1.0000e-005	0.3304
User Defined Industrial	0.00341918	4.0000e-005	3.4000e-004	2.8000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.4023	0.4023	1.0000e-005	1.0000e-005	0.4047
User Defined Industrial	0.00512	6.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.6024	0.6024	1.0000e-005	1.0000e-005	0.6059
User Defined Industrial	0.00556537	6.0000e-005	5.5000e-004	4.6000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.6548	0.6548	1.0000e-005	1.0000e-005	0.6586
Total		**0.0351**	**0.3183**	**0.2597**	**1.9100e-003**		**0.0243**	**0.0243**		**0.0243**	**0.0243**		**383.3285**	**383.3285**	**7.3400e-003**	**7.0200e-003**	**385.6065**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.1954	0.8992	17.6019	0.0545		2.5795	2.5795		2.5795	2.5795	371.7239	801.9876	1,173.7115	1.7564	0.0146	1,221.9836
Unmitigated	4.1954	0.8992	17.6019	0.0545		2.5795	2.5795		2.5795	2.5795	371.7239	801.9876	1,173.7115	1.7564	0.0146	1,221.9836

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7824					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7732	0.8774	15.7043	0.0544		2.5690	2.5690		2.5690	2.5690	371.7239	798.5647	1,170.2886	1.7530	0.0146	1,218.4774
Landscaping	0.0579	0.0218	1.8976	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4229	3.4229	3.3300e-003		3.5061
Total	**4.1954**	**0.8992**	**17.6019**	**0.0545**		**2.5795**	**2.5795**		**2.5795**	**2.5795**	**371.7239**	**801.9876**	**1,173.7115**	**1.7564**	**0.0146**	**1,221.9836**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5820					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.7824					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7732	0.8774	15.7043	0.0544		2.5690	2.5690		2.5690	2.5690	371.7239	798.5647	1,170.288 6	1.7530	0.0146	1,218.477 4
Landscaping	0.0579	0.0218	1.8976	1.0000e-004		0.0105	0.0105		0.0105	0.0105		3.4229	3.4229	3.3300e-003		3.5061
Total	**4.1954**	**0.8992**	**17.6019**	**0.0545**		**2.5795**	**2.5795**		**2.5795**	**2.5795**	**371.7239**	**801.9876**	**1,173.711 5**	**1.7564**	**0.0146**	**1,221.983 6**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

CalEEMod Output Files – Greenhouse Gas Emissions

Growlersberg Conservation Camp Replacement Project Existing Conditions

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.60	1000sqft	0.13	5,601.00	0
General Office Building	0.88	1000sqft	0.02	884.00	0
General Light Industry	4.76	1000sqft	0.11	4,760.00	0
General Light Industry	7.23	1000sqft	0.17	7,233.00	0
General Light Industry	7.45	1000sqft	0.17	7,445.00	0
Unrefrigerated Warehouse-No Rail	7.30	1000sqft	0.17	7,304.00	0
User Defined Industrial	2.92	User Defined Unit	0.07	2,920.00	0
User Defined Industrial	1.59	User Defined Unit	0.04	1,592.00	0
User Defined Industrial	3.17	User Defined Unit	0.07	3,174.00	0
User Defined Industrial	0.73	User Defined Unit	0.02	732.00	0
User Defined Industrial	0.11	User Defined Unit	0.00	106.00	0
User Defined Industrial	1.95	User Defined Unit	0.04	1,950.00	0
Parking Lot	70.00	Space	0.63	28,000.00	0
Health Club	7.45	1000sqft	0.17	7,445.00	0
High Turnover (Sit Down Restaurant)	8.82	1000sqft	0.20	8,824.00	0
Congregate Care (Assisted Living)	14.54	Dwelling Unit	0.91	14,544.00	136
Congregate Care (Assisted Living)	1.28	Dwelling Unit	0.08	1,280.00	4
Congregate Care (Assisted Living)	7.03	Dwelling Unit	0.44	7,030.00	24

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - General Office Bld. = Blds. A, P; Health Club = Bld. B; Sit-down Rest. = Bld. C; Congregate Care = Blds. D, K, & N population based on # of beds; Warehouse = Blds. M; General Light Industrial = Bld. F, H, L; User Defined = E, G, J1, J2, O, Q

Construction Phase - Existing conditions model run only

Off-road Equipment - Existing conditions model run only

Trips and VMT - Existing Conditions model run

Demolition -

Architectural Coating - Existing conditions model run only

Vehicle Trips - Worker trips updated to match PD (14 CalFire employees and 12 CDCR employees)

Woodstoves -

Energy Use - Using historic data to show existing conditions, User defined industrial energy usage = 1/2 the energy use of general light industrial to show conservative energy useage for storage buildings.

Water And Wastewater -

Area Coating -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	29,985.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	89,955.00	0.00
tblArchitecturalCoating	ConstArea_Parking	1,680.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	15,426.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	46,279.00	0.00

tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblEnergyUse	LightingElect	0.00	0.57
tblEnergyUse	NT24E	0.00	0.46
tblEnergyUse	NT24NG	0.00	0.08
tblEnergyUse	T24E	0.00	0.21
tblEnergyUse	T24NG	0.00	0.92
tblLandUse	LandUseSquareFeet	880.00	884.00
tblLandUse	LandUseSquareFeet	5,600.00	5,601.00
tblLandUse	LandUseSquareFeet	7,230.00	7,233.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00
tblLandUse	LandUseSquareFeet	7,300.00	7,304.00
tblLandUse	LandUseSquareFeet	0.00	106.00
tblLandUse	LandUseSquareFeet	0.00	732.00
tblLandUse	LandUseSquareFeet	0.00	1,592.00
tblLandUse	LandUseSquareFeet	0.00	1,950.00
tblLandUse	LandUseSquareFeet	0.00	2,920.00
tblLandUse	LandUseSquareFeet	0.00	3,174.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00
tblLandUse	LandUseSquareFeet	8,820.00	8,824.00
tblLandUse	LandUseSquareFeet	14,540.00	14,544.00
tblLandUse	LotAcreage	0.00	0.02
tblLandUse	LotAcreage	0.00	0.04

tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	Population	42.00	136.00
tblLandUse	Population	20.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	11.00	0.00
tblVehicleTrips	ST_TR	2.20	2.28
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	2.44	2.28
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	2.74	2.28
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7391	0.0860	5.4803	9.6300e-003		0.7454	0.7454		0.7454	0.7454	70.7967	29.9817	100.7785	0.0655	5.5700e-003	104.0756
Energy	7.6900e-003	0.0696	0.0565	4.2000e-004		5.3100e-003	5.3100e-003		5.3100e-003	5.3100e-003	0.0000	243.6033	243.6033	9.0300e-003	2.9600e-003	244.7119
Mobile	0.0165	0.0610	0.2207	7.3000e-004	0.0716	6.8000e-004	0.0723	0.0192	6.3000e-004	0.0198	0.0000	66.8646	66.8646	1.8900e-003	0.0000	66.9119
Waste						0.0000	0.0000		0.0000	0.0000	41.6700	0.0000	41.6700	2.4626	0.0000	103.2356
Water						0.0000	0.0000		0.0000	0.0000	3.7886	20.9213	24.7099	0.3901	9.3800e-003	37.2582
Total	**4.7634**	**0.2166**	**5.7575**	**0.0108**	**0.0716**	**0.7513**	**0.8230**	**0.0192**	**0.7513**	**0.7705**	**116.2553**	**361.3710**	**477.6263**	**2.9291**	**0.0179**	**556.1931**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7391	0.0860	5.4803	9.6300e-003		0.7454	0.7454		0.7454	0.7454	70.7967	29.9817	100.7785	0.0655	5.5700e-003	104.0756
Energy	7.6900e-003	0.0696	0.0565	4.2000e-004		5.3100e-003	5.3100e-003		5.3100e-003	5.3100e-003	0.0000	243.6033	243.6033	9.0300e-003	2.9600e-003	244.7119
Mobile	0.0165	0.0610	0.2207	7.3000e-004	0.0716	6.8000e-004	0.0723	0.0192	6.3000e-004	0.0198	0.0000	66.8646	66.8646	1.8900e-003	0.0000	66.9119
Waste						0.0000	0.0000		0.0000	0.0000	41.6700	0.0000	41.6700	2.4626	0.0000	103.2356
Water						0.0000	0.0000		0.0000	0.0000	3.7886	20.9213	24.7099	0.3901	9.3800e-003	37.2582
Total	**4.7634**	**0.2166**	**5.7575**	**0.0108**	**0.0716**	**0.7513**	**0.8230**	**0.0192**	**0.7513**	**0.7705**	**116.2553**	**361.3710**	**477.6263**	**2.9291**	**0.0179**	**556.1931**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/1/2022	2/28/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.63

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0165	0.0610	0.2207	7.3000e-004	0.0716	6.8000e-004	0.0723	0.0192	6.3000e-004	0.0198	0.0000	66.8646	66.8646	1.8900e-003	0.0000	66.9119
Unmitigated	0.0165	0.0610	0.2207	7.3000e-004	0.0716	6.8000e-004	0.0723	0.0192	6.3000e-004	0.0198	0.0000	66.8646	66.8646	1.8900e-003	0.0000	66.9119

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	33.15	33.15	33.15	123,446	123,446
Congregate Care (Assisted Living)	2.92	2.92	2.92	10,867	10,867
Congregate Care (Assisted Living)	16.03	16.03	16.03	59,685	59,685
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Total	52.10	52.10	52.10	193,999	193,999

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Health Club	14.70	6.60	6.60	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	14.70	6.60	6.60	8.50	72.50	19.00	37	20	43
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Light Industry	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Health Club	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
High Turnover (Sit Down Restaurant)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Unrefrigerated Warehouse-No Rail	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
User Defined Industrial	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	167.5129	167.5129	7.5700e-003	1.5700e-003	168.1692
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	167.5129	167.5129	7.5700e-003	1.5700e-003	168.1692
NaturalGas Mitigated	7.6900e-003	0.0696	0.0565	4.2000e-004		5.3100e-003	5.3100e-003		5.3100e-003	5.3100e-003	0.0000	76.0905	76.0905	1.4600e-003	1.3900e-003	76.5426
NaturalGas Unmitigated	7.6900e-003	0.0696	0.0565	4.2000e-004		5.3100e-003	5.3100e-003		5.3100e-003	5.3100e-003	0.0000	76.0905	76.0905	1.4600e-003	1.3900e-003	76.5426

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Congregate Care (Assisted Living)	32041	1.7000e-004	1.4800e-003	6.3000e-004	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7098	1.7098	3.0000e-005	3.0000e-005	1.7200
Congregate Care (Assisted Living)	5833.92	3.0000e-005	2.7000e-004	1.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3113	0.3113	1.0000e-005	1.0000e-005	0.3132
Congregate Care (Assisted Living)	66269.7	3.6000e-004	3.0500e-003	1.3000e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.5364	3.5364	7.0000e-005	6.0000e-005	3.5574
General Light Industry	18897.2	1.0000e-004	9.3000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0084	1.0084	2.0000e-005	2.0000e-005	1.0144
General Light Industry	28715	1.5000e-004	1.4100e-003	1.1800e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5323	1.5323	3.0000e-005	3.0000e-005	1.5415

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	29556.7	1.6000e-004	1.4500e-003	1.2200e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5773	1.5773	3.0000e-005	3.0000e-005	1.5866
General Office Building	136776	7.4000e-004	6.7000e-003	5.6300e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.2989	7.2989	1.4000e-004	1.3000e-004	7.3423
General Office Building	21587.3	1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1520	1.1520	2.0000e-005	2.0000e-005	1.1588
Health Club	29556.7	1.6000e-004	1.4500e-003	1.2200e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5773	1.5773	3.0000e-005	3.0000e-005	1.5866
High Turnover (Sit Down Restaurant)	1.04617e+006	5.6400e-003	0.0513	0.0431	3.1000e-004		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	55.8278	55.8278	1.0700e-003	1.0200e-003	56.1596
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	106	0.0000	1.0000e-005	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.6600e-003	5.6600e-003	0.0000	0.0000	5.6900e-003
User Defined Industrial	1592	1.0000e-005	8.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0850	0.0850	0.0000	0.0000	0.0855
User Defined Industrial	1950	1.0000e-005	1.0000e-004	8.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1041	0.1041	0.0000	0.0000	0.1047
User Defined Industrial	2920	2.0000e-005	1.4000e-004	1.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1558	0.1558	0.0000	0.0000	0.1568
User Defined Industrial	3174	2.0000e-005	1.6000e-004	1.3000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1694	0.1694	0.0000	0.0000	0.1704
User Defined Industrial	732	0.0000	4.0000e-005	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0391	0.0391	0.0000	0.0000	0.0393
Total		**7.6900e-003**	**0.0696**	**0.0565**	**4.3000e-004**		**5.3200e-003**	**5.3200e-003**		**5.3200e-003**	**5.3200e-003**	**0.0000**	**76.0905**	**76.0905**	**1.4500e-003**	**1.3800e-003**	**76.5426**

5.2 Energy by Land Use - NaturalGas

Mitigated

Growlersberg Conservation Camp Replacement Project Existing Conditions - El Dorado-Mountain County County, Annual

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Congregate Care (Assisted Living)	32041	1.7000e-004	1.4800e-003	6.3000e-004	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7098	1.7098	3.0000e-005	3.0000e-005	1.7200
Congregate Care (Assisted Living)	5833.92	3.0000e-005	2.7000e-004	1.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3113	0.3113	1.0000e-005	1.0000e-005	0.3132
Congregate Care (Assisted Living)	66269.7	3.6000e-004	3.0500e-003	1.3000e-003	2.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.5364	3.5364	7.0000e-005	6.0000e-005	3.5574
General Light Industry	18897.2	1.0000e-004	9.3000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0084	1.0084	2.0000e-005	2.0000e-005	1.0144
General Light Industry	28715	1.5000e-004	1.4100e-003	1.1800e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5323	1.5323	3.0000e-005	3.0000e-005	1.5415
General Light Industry	29556.7	1.6000e-004	1.4500e-003	1.2200e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5773	1.5773	3.0000e-005	3.0000e-005	1.5866
General Office Building	136776	7.4000e-004	6.7000e-003	5.6300e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.2989	7.2989	1.4000e-004	1.3000e-004	7.3423
General Office Building	21587.3	1.2000e-004	1.0600e-003	8.9000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.1520	1.1520	2.0000e-005	2.0000e-005	1.1588
Health Club	29556.7	1.6000e-004	1.4500e-003	1.2200e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5773	1.5773	3.0000e-005	3.0000e-005	1.5866
High Turnover (Sit Down Restaurant)	1.04617e+006	5.6400e-003	0.0513	0.0431	3.1000e-004		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	55.8278	55.8278	1.0700e-003	1.0200e-003	56.1596
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	106	0.0000	1.0000e-005	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.6600e-003	5.6600e-003	0.0000	0.0000	5.6900e-003
User Defined Industrial	1592	1.0000e-005	8.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0850	0.0850	0.0000	0.0000	0.0855
User Defined Industrial	1950	1.0000e-005	1.0000e-004	8.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1041	0.1041	0.0000	0.0000	0.1047
User Defined Industrial	2920	2.0000e-005	1.4000e-004	1.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1558	0.1558	0.0000	0.0000	0.1568
User Defined Industrial	3174	2.0000e-005	1.6000e-004	1.3000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1694	0.1694	0.0000	0.0000	0.1704
User Defined Industrial	732	0.0000	4.0000e-005	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0391	0.0391	0.0000	0.0000	0.0393

Total		**7.6900e-003**	**0.0696**	**0.0565**	**4.3000e-004**		**5.3200e-003**	**5.3200e-003**		**5.3200e-003**	**5.3200e-003**	**0.0000**	**76.0905**	**76.0905**	**1.4500e-003**	**1.3800e-003**	**76.5426**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	25140.2	7.3136	3.3000e-004	7.0000e-005	7.3422
Congregate Care (Assisted Living)	4577.45	1.3316	6.0000e-005	1.0000e-005	1.3369
Congregate Care (Assisted Living)	51996.9	15.1265	6.8000e-004	1.4000e-004	15.1858
General Light Industry	23609.6	6.8683	3.1000e-004	6.0000e-005	6.8952
General Light Industry	35875.7	10.4367	4.7000e-004	1.0000e-004	10.4775
General Light Industry	36927.2	10.7426	4.9000e-004	1.0000e-004	10.7846
General Office Building	11704.2	3.4049	1.5000e-004	3.0000e-005	3.4182
General Office Building	74157.2	21.5732	9.8000e-004	2.0000e-004	21.6577
Health Club	36927.2	10.7426	4.9000e-004	1.0000e-004	10.7846
High Turnover (Sit Down Restaurant)	237277	69.0267	3.1200e-003	6.5000e-004	69.2972
Parking Lot	24640	7.1681	3.2000e-004	7.0000e-005	7.1962
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	131.44	0.0382	0.0000	0.0000	0.0384

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	1974.08	0.5743	3.0000e-005	1.0000e-005	0.5765
User Defined Industrial	2418	0.7034	3.0000e-005	1.0000e-005	0.7062
User Defined Industrial	3620.8	1.0533	5.0000e-005	1.0000e-005	1.0575
User Defined Industrial	3935.76	1.1450	5.0000e-005	1.0000e-005	1.1494
User Defined Industrial	907.68	0.2641	1.0000e-005	0.0000	0.2651
Total		**167.5129**	**7.5700e-003**	**1.5700e-003**	**168.1692**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	25140.2	7.3136	3.3000e-004	7.0000e-005	7.3422
Congregate Care (Assisted Living)	4577.45	1.3316	6.0000e-005	1.0000e-005	1.3369
Congregate Care (Assisted Living)	51996.9	15.1265	6.8000e-004	1.4000e-004	15.1858
General Light Industry	23609.6	6.8683	3.1000e-004	6.0000e-005	6.8952
General Light Industry	35875.7	10.4367	4.7000e-004	1.0000e-004	10.4775
General Light Industry	36927.2	10.7426	4.9000e-004	1.0000e-004	10.7846

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	11704.2	3.4049	1.5000e-004	3.0000e-005	3.4182
General Office Building	74157.2	21.5732	9.8000e-004	2.0000e-004	21.6577
Health Club	36927.2	10.7426	4.9000e-004	1.0000e-004	10.7846
High Turnover (Sit Down Restaurant)	237277	69.0267	3.1200e-003	6.5000e-004	69.2972
Parking Lot	24640	7.1681	3.2000e-004	7.0000e-005	7.1962
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	131.44	0.0382	0.0000	0.0000	0.0384
User Defined Industrial	1974.08	0.5743	3.0000e-005	1.0000e-005	0.5765
User Defined Industrial	2418	0.7034	3.0000e-005	1.0000e-005	0.7062
User Defined Industrial	3620.8	1.0533	5.0000e-005	1.0000e-005	1.0575
User Defined Industrial	3935.76	1.1450	5.0000e-005	1.0000e-005	1.1494
User Defined Industrial	907.68	0.2641	1.0000e-005	0.0000	0.2651
Total		**167.5129**	**7.5700e-003**	**1.5700e-003**	**168.1692**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.7391	0.0860	5.4803	9.6300e-003		0.7454	0.7454		0.7454	0.7454	70.7967	29.9817	100.7785	0.0655	5.5700e-003	104.0756
Unmitigated	4.7391	0.0860	5.4803	9.6300e-003		0.7454	0.7454		0.7454	0.7454	70.7967	29.9817	100.7785	0.0655	5.5700e-003	104.0756

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1062					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.3024	0.0840	5.3095	9.6200e-003		0.7444	0.7444		0.7444	0.7444	70.7967	29.7023	100.4990	0.0652	5.5700e-003	103.7894
Landscaping	5.2100e-003	1.9600e-003	0.1708	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2795	0.2795	2.7000e-004	0.0000	0.2863
Total	**4.7391**	**0.0860**	**5.4803**	**9.6300e-003**		**0.7454**	**0.7454**		**0.7454**	**0.7454**	**70.7967**	**29.9817**	**100.7785**	**0.0655**	**5.5700e-003**	**104.0756**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1062					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.3024	0.0840	5.3095	9.6200e-003		0.7444	0.7444		0.7444	0.7444	70.7967	29.7023	100.4990	0.0652	5.5700e-003	103.7894
Landscaping	5.2100e-003	1.9600e-003	0.1708	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2795	0.2795	2.7000e-004	0.0000	0.2863
Total	**4.7391**	**0.0860**	**5.4803**	**9.6300e-003**		**0.7454**	**0.7454**		**0.7454**	**0.7454**	**70.7967**	**29.9817**	**100.7785**	**0.0655**	**5.5700e-003**	**104.0756**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	24.7099	0.3901	9.3800e-003	37.2582
Unmitigated	24.7099	0.3901	9.3800e-003	37.2582

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	1.48877 / 0.938572	3.7715	0.0487	1.1800e-003	5.3385
General Light Industry	4.4955 / 0	8.5027	0.1468	3.5300e-003	13.2233
General Office Building	1.15171 / 0.70589	2.8971	0.0376	9.1000e-004	4.1093
Health Club	0.440616 / 0.270055	1.1083	0.0144	3.5000e-004	1.5721
High Turnover (Sit Down Restaurant)	2.67717 / 0.170883	5.2375	0.0874	2.1000e-003	8.0494
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.68813 / 0	3.1929	0.0551	1.3200e-003	4.9655
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**24.7100**	**0.3901**	**9.3900e-003**	**37.2582**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	1.48877 / 0.938572	3.7715	0.0487	1.1800e-003	5.3385
General Light Industry	4.4955 / 0	8.5027	0.1468	3.5300e-003	13.2233
General Office Building	1.15171 / 0.70589	2.8971	0.0376	9.1000e-004	4.1093
Health Club	0.440616 / 0.270055	1.1083	0.0144	3.5000e-004	1.5721
High Turnover (Sit Down Restaurant)	2.67717 / 0.170883	5.2375	0.0874	2.1000e-003	8.0494
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.68813 / 0	3.1929	0.0551	1.3200e-003	4.9655
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**24.7100**	**0.3901**	**9.3900e-003**	**37.2582**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	41.6700	2.4626	0.0000	103.2356
Unmitigated	41.6700	2.4626	0.0000	103.2356

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	20.85	4.2324	0.2501	0.0000	10.4855
General Light Industry	24.11	4.8941	0.2892	0.0000	12.1250
General Office Building	6.03	1.2240	0.0723	0.0000	3.0325
Health Club	42.47	8.6210	0.5095	0.0000	21.3582
High Turnover (Sit Down Restaurant)	104.96	21.3059	1.2591	0.0000	52.7845
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	6.86	1.3925	0.0823	0.0000	3.4499
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**41.6700**	**2.4626**	**0.0000**	**103.2356**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	20.85	4.2324	0.2501	0.0000	10.4855
General Light Industry	24.11	4.8941	0.2892	0.0000	12.1250
General Office Building	6.03	1.2240	0.0723	0.0000	3.0325
Health Club	42.47	8.6210	0.5095	0.0000	21.3582
High Turnover (Sit Down Restaurant)	104.96	21.3059	1.2591	0.0000	52.7845
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	6.86	1.3925	0.0823	0.0000	3.4499
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**41.6700**	**2.4626**	**0.0000**	**103.2356**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Growlersberg Conservation Camp Replacement Project Construction

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.60	1000sqft	0.13	5,600.00	0
General Office Building	0.88	1000sqft	0.02	880.00	0
User Defined Industrial	2.92	User Defined Unit	0.07	2,920.00	0
User Defined Industrial	1.59	User Defined Unit	0.04	1,592.00	0
General Light Industry	4.76	1000sqft	0.11	4,760.00	0
General Light Industry	7.23	1000sqft	0.17	7,233.00	0
General Light Industry	7.45	1000sqft	0.17	7,445.00	0
User Defined Industrial	3.17	User Defined Unit	0.07	3,174.00	0
User Defined Industrial	0.73	User Defined Unit	0.02	732.00	0
User Defined Industrial	0.11	User Defined Unit	0.00	106.00	0
Unrefrigerated Warehouse-No Rail	7.30	1000sqft	0.17	7,304.00	0
User Defined Industrial	1.95	User Defined Unit	0.04	1,950.00	0
Other Non-Asphalt Surfaces	9.58	Acre	9.58	417,304.80	0
Parking Lot	70.00	Space	0.63	28,000.00	0
Health Club	7.45	1000sqft	0.17	7,450.00	0
High Turnover (Sit Down Restaurant)	8.82	1000sqft	0.20	8,820.00	0
Congregate Care (Assisted Living)	14.54	Dwelling Unit	0.91	14,540.00	136
Congregate Care (Assisted Living)	1.28	Dwelling Unit	0.08	1,280.00	4
Congregate Care (Assisted Living)	7.03	Dwelling Unit	0.44	7,030.00	24

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land Use - General Office Bld. = Blds. A, P; Health Club = Bld. B; Sit-down Rest. = Bld. C; Congregate Care = Blds. D, K, & N population based on # of beds;
Warehouse = Blds. M; General Light Industrial = Bld. F, H, L; User Defined = E, G, J1, J2, O, Q

Construction Phase - Construction, Paving, Architectural Coating anticipated to be conducted simultaneously

Off-road Equipment -

Off-road Equipment - Updated equipment list with Trenchers to account for underground infrastructure as per PD

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition - Square footage of building demolition updated to match total square footage of all proposed buildings per PD

Architectural Coating -

Vehicle Trips - Construction-only modeling run

Woodstoves - Construction-only modeling run

Landscape Equipment -

Energy Use - Construction-only model run

Water And Wastewater - Construction-Only model run

Solid Waste - Construction-only model run

Trips and VMT -

Area Coating - Construction only modeling run

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	0
tblAreaCoating	Area_EF_Nonresidential_Interior	250	0
tblAreaCoating	Area_EF_Parking	250	0
tblAreaCoating	Area_EF_Residential_Exterior	250	0
tblAreaCoating	Area_EF_Residential_Interior	250	0
tblAreaCoating	Area_Nonresidential_Exterior	29983	0
tblAreaCoating	Area_Nonresidential_Interior	89949	0
tblAreaCoating	Area_Parking	26718	0
tblAreaCoating	Area_Residential_Exterior	15424	0
tblAreaCoating	Area_Residential_Interior	46271	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	300.00	340.00
tblConstructionPhase	NumDays	20.00	340.00
tblConstructionPhase	NumDays	20.00	340.00
tblConstructionPhase	PhaseEndDate	7/17/2023	9/11/2023
tblConstructionPhase	PhaseEndDate	8/14/2023	9/11/2023
tblConstructionPhase	PhaseStartDate	7/18/2023	5/24/2022
tblConstructionPhase	PhaseStartDate	8/15/2023	5/24/2022
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	LightingElect	3.45	0.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	LightingElect	4.74	0.00
tblEnergyUse	LightingElect	0.35	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24E	1.85	0.00

tblEnergyUse	NT24E	3.98	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24E	15.83	0.00
tblEnergyUse	NT24NG	1,599.00	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	NT24NG	88.55	0.00
tblEnergyUse	T24E	830.63	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24E	3.63	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24E	4.00	0.00
tblEnergyUse	T24NG	2,290.03	0.00
tblEnergyUse	T24NG	3.20	0.00
tblEnergyUse	T24NG	19.54	0.00
tblEnergyUse	T24NG	3.20	0.00
tblEnergyUse	T24NG	27.65	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	12.57	0.00
tblFireplaces	NumberNoFireplace	2.29	0.00
tblFireplaces	NumberWood	8.00	0.00
tblLandUse	LandUseSquareFeet	0.00	2,920.00
tblLandUse	LandUseSquareFeet	0.00	1,592.00
tblLandUse	LandUseSquareFeet	0.00	106.00
tblLandUse	LandUseSquareFeet	0.00	732.00

tblLandUse	LandUseSquareFeet	0.00	1,950.00
tblLandUse	LandUseSquareFeet	0.00	3,174.00
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.02
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	Population	42.00	136.00
tblLandUse	Population	20.00	24.00
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	20.85	0.00
tblSolidWaste	SolidWasteGenerationRate	24.11	0.00
tblSolidWaste	SolidWasteGenerationRate	6.03	0.00
tblSolidWaste	SolidWasteGenerationRate	42.47	0.00
tblSolidWaste	SolidWasteGenerationRate	104.96	0.00
tblSolidWaste	SolidWasteGenerationRate	6.86	0.00
tblVehicleTrips	ST_TR	2.20	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	2.44	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00

tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	2.74	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	1,488,769.49	0.00
tblWater	IndoorWaterUseRate	4,495,500.00	0.00
tblWater	IndoorWaterUseRate	1,151,714.69	0.00
tblWater	IndoorWaterUseRate	440,616.42	0.00
tblWater	IndoorWaterUseRate	2,677,167.34	0.00
tblWater	IndoorWaterUseRate	1,688,125.00	0.00
tblWater	OutdoorWaterUseRate	938,572.07	0.00
tblWater	OutdoorWaterUseRate	705,889.65	0.00
tblWater	OutdoorWaterUseRate	270,055.23	0.00
tblWater	OutdoorWaterUseRate	170,883.02	0.00
tblWoodstoves	NumberCatalytic	1.14	0.00
tblWoodstoves	NumberNoncatalytic	1.14	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	1.1290	4.6287	4.9372	0.0107	0.5925	0.2034	0.7959	0.1988	0.1892	0.3880	0.0000	951.3709	951.3709	0.1628	0.0000	955.4417
2023	1.1334	3.6709	4.6154	0.0100	0.3654	0.1602	0.5256	0.0982	0.1493	0.2476	0.0000	896.1113	896.1113	0.1362	0.0000	899.5171
Maximum	**1.1334**	**4.6287**	**4.9372**	**0.0107**	**0.5925**	**0.2034**	**0.7959**	**0.1988**	**0.1892**	**0.3880**	**0.0000**	**951.3709**	**951.3709**	**0.1628**	**0.0000**	**955.4417**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	1.1290	4.6287	4.9372	0.0107	0.5925	0.2034	0.7959	0.1988	0.1892	0.3880	0.0000	951.3703	951.3703	0.1628	0.0000	955.4411
2023	1.1334	3.6709	4.6154	0.0100	0.3654	0.1602	0.5256	0.0982	0.1493	0.2476	0.0000	896.1108	896.1108	0.1362	0.0000	899.5165
Maximum	**1.1334**	**4.6287**	**4.9372**	**0.0107**	**0.5925**	**0.2034**	**0.7959**	**0.1988**	**0.1892**	**0.3880**	**0.0000**	**951.3703**	**951.3703**	**0.1628**	**0.0000**	**955.4411**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2022	5-31-2022	1.3287	1.3287
2	6-1-2022	8-31-2022	1.8918	1.8918
3	9-1-2022	11-30-2022	1.8827	1.8827
4	12-1-2022	2-28-2023	1.7682	1.7682
5	3-1-2023	5-31-2023	1.7443	1.7443
6	6-1-2023	8-31-2023	1.7393	1.7393
7	9-1-2023	9-30-2023	0.2080	0.2080
		Highest	1.8918	1.8918

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3574	1.9700e-003	0.1709	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2796	0.2796	2.7000e-004	0.0000	0.2865
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3574**	**1.9700e-003**	**0.1709**	**1.0000e-005**	**0.0000**	**9.4000e-004**	**9.4000e-004**	**0.0000**	**9.4000e-004**	**9.4000e-004**	**0.0000**	**0.2796**	**0.2796**	**2.7000e-004**	**0.0000**	**0.2865**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3574	1.9700e-003	0.1709	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2796	0.2796	2.7000e-004	0.0000	0.2865
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.3574**	**1.9700e-003**	**0.1709**	**1.0000e-005**	**0.0000**	**9.4000e-004**	**9.4000e-004**	**0.0000**	**9.4000e-004**	**9.4000e-004**	**0.0000**	**0.2796**	**0.2796**	**2.7000e-004**	**0.0000**	**0.2865**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2022	3/28/2022	5	20	
2	Site Preparation	Site Preparation	3/29/2022	4/11/2022	5	10	
3	Grading	Grading	4/12/2022	5/23/2022	5	30	
4	Building Construction	Building Construction	5/24/2022	9/11/2023	5	340	
5	Paving	Paving	5/24/2022	9/11/2023	5	340	
6	Architectural Coating	Architectural Coating	5/24/2022	9/11/2023	5	340	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 10.21

Residential Indoor: 46,271; Residential Outdoor: 15,424; Non-Residential Indoor: 89,949; Non-Residential Outdoor: 29,983; Striped Parking Area: 26,718 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Trenchers	2	8.00	78	0.50
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	377.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	228.00	85.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	46.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0414	0.0000	0.0414	6.2700e-003	0.0000	6.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**	**0.0414**	**0.0124**	**0.0538**	**6.2700e-003**	**0.0116**	**0.0178**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

3.2 Demolition - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0552	0.0166	1.5000e-004	3.1300e-003	2.0000e-004	3.3400e-003	8.6000e-004	2.0000e-004	1.0500e-003	0.0000	14.3313	14.3313	1.6000e-004	0.0000	14.3353
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	5.5000e-004	5.9300e-003	2.0000e-005	1.8400e-003	1.0000e-005	1.8500e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5164	1.5164	4.0000e-005	0.0000	1.5174
Total	**2.4300e-003**	**0.0557**	**0.0225**	**1.7000e-004**	**4.9700e-003**	**2.1000e-004**	**5.1900e-003**	**1.3500e-003**	**2.1000e-004**	**1.5500e-003**	**0.0000**	**15.8477**	**15.8477**	**2.0000e-004**	**0.0000**	**15.8527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0414	0.0000	0.0414	6.2700e-003	0.0000	6.2700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**	**0.0414**	**0.0124**	**0.0538**	**6.2700e-003**	**0.0116**	**0.0178**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

3.2 Demolition - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0552	0.0166	1.5000e-004	3.1300e-003	2.0000e-004	3.3400e-003	8.6000e-004	2.0000e-004	1.0500e-003	0.0000	14.3313	14.3313	1.6000e-004	0.0000	14.3353
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	5.5000e-004	5.9300e-003	2.0000e-005	1.8400e-003	1.0000e-005	1.8500e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5164	1.5164	4.0000e-005	0.0000	1.5174
Total	**2.4300e-003**	**0.0557**	**0.0225**	**1.7000e-004**	**4.9700e-003**	**2.1000e-004**	**5.1900e-003**	**1.3500e-003**	**2.1000e-004**	**1.5500e-003**	**0.0000**	**15.8477**	**15.8477**	**2.0000e-004**	**0.0000**	**15.8527**

3.3 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0903**	**8.0600e-003**	**0.0984**	**0.0497**	**7.4200e-003**	**0.0571**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

3.3 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	3.3000e-004	3.5600e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9099	0.9099	2.0000e-005	0.0000	0.9104
Total	**5.6000e-004**	**3.3000e-004**	**3.5600e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9099**	**0.9099**	**2.0000e-005**	**0.0000**	**0.9104**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0903**	**8.0600e-003**	**0.0984**	**0.0497**	**7.4200e-003**	**0.0571**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

3.3 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	3.3000e-004	3.5600e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9099	0.9099	2.0000e-005	0.0000	0.9104
Total	**5.6000e-004**	**3.3000e-004**	**3.5600e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9099**	**0.9099**	**2.0000e-005**	**0.0000**	**0.9104**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8019	81.8019	0.0265	0.0000	82.4633
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.1301**	**0.0245**	**0.1546**	**0.0540**	**0.0226**	**0.0765**	**0.0000**	**81.8019**	**81.8019**	**0.0265**	**0.0000**	**82.4633**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8800e-003	1.1100e-003	0.0119	3.0000e-005	3.6700e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	3.0328	3.0328	8.0000e-005	0.0000	3.0348
Total	**1.8800e-003**	**1.1100e-003**	**0.0119**	**3.0000e-005**	**3.6700e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**3.0328**	**3.0328**	**8.0000e-005**	**0.0000**	**3.0348**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8018	81.8018	0.0265	0.0000	82.4632
Total	**0.0544**	**0.5827**	**0.4356**	**9.3000e-004**	**0.1301**	**0.0245**	**0.1546**	**0.0540**	**0.0226**	**0.0765**	**0.0000**	**81.8018**	**81.8018**	**0.0265**	**0.0000**	**82.4632**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8800e-003	1.1100e-003	0.0119	3.0000e-005	3.6700e-003	3.0000e-005	3.7000e-003	9.8000e-004	2.0000e-005	1.0000e-003	0.0000	3.0328	3.0328	8.0000e-005	0.0000	3.0348
Total	**1.8800e-003**	**1.1100e-003**	**0.0119**	**3.0000e-005**	**3.6700e-003**	**3.0000e-005**	**3.7000e-003**	**9.8000e-004**	**2.0000e-005**	**1.0000e-003**	**0.0000**	**3.0328**	**3.0328**	**8.0000e-005**	**0.0000**	**3.0348**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1938	1.7815	1.7162	2.6800e-003		0.1026	0.1026		0.0957	0.0957	0.0000	231.6173	231.6173	0.0595	0.0000	233.1039
Total	**0.1938**	**1.7815**	**1.7162**	**2.6800e-003**		**0.1026**	**0.1026**		**0.0957**	**0.0957**	**0.0000**	**231.6173**	**231.6173**	**0.0595**	**0.0000**	**233.1039**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0208	0.7036	0.2316	1.6400e-003	0.0397	1.9100e-003	0.0416	0.0115	1.8300e-003	0.0133	0.0000	155.6650	155.6650	2.7500e-003	0.0000	155.7336
Worker	0.1136	0.0668	0.7164	2.0300e-003	0.2219	1.5700e-003	0.2234	0.0590	1.4400e-003	0.0605	0.0000	183.2433	183.2433	4.8100e-003	0.0000	183.3635
Total	**0.1345**	**0.7705**	**0.9480**	**3.6700e-003**	**0.2616**	**3.4800e-003**	**0.2651**	**0.0705**	**3.2700e-003**	**0.0738**	**0.0000**	**338.9083**	**338.9083**	**7.5600e-003**	**0.0000**	**339.0971**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1938	1.7815	1.7162	2.6800e-003		0.1026	0.1026		0.0957	0.0957	0.0000	231.6171	231.6171	0.0595	0.0000	233.1036
Total	**0.1938**	**1.7815**	**1.7162**	**2.6800e-003**		**0.1026**	**0.1026**		**0.0957**	**0.0957**	**0.0000**	**231.6171**	**231.6171**	**0.0595**	**0.0000**	**233.1036**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0208	0.7036	0.2316	1.6400e-003	0.0397	1.9100e-003	0.0416	0.0115	1.8300e-003	0.0133	0.0000	155.6650	155.6650	2.7500e-003	0.0000	155.7336
Worker	0.1136	0.0668	0.7164	2.0300e-003	0.2219	1.5700e-003	0.2234	0.0590	1.4400e-003	0.0605	0.0000	183.2433	183.2433	4.8100e-003	0.0000	183.3635
Total	**0.1345**	**0.7705**	**0.9480**	**3.6700e-003**	**0.2616**	**3.4800e-003**	**0.2651**	**0.0705**	**3.2700e-003**	**0.0738**	**0.0000**	**338.9083**	**338.9083**	**7.5600e-003**	**0.0000**	**339.0971**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2054	1.8900	1.9416	3.0500e-003		0.1041	0.1041		0.0971	0.0971	0.0000	263.7783	263.7783	0.0674	0.0000	265.4625
Total	**0.2054**	**1.8900**	**1.9416**	**3.0500e-003**		**0.1041**	**0.1041**		**0.0971**	**0.0971**	**0.0000**	**263.7783**	**263.7783**	**0.0674**	**0.0000**	**265.4625**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0193	0.6538	0.2444	1.8300e-003	0.0452	1.3400e-003	0.0466	0.0131	1.2800e-003	0.0144	0.0000	173.3855	173.3855	2.6700e-003	0.0000	173.4522
Worker	0.1222	0.0685	0.7460	2.2200e-003	0.2526	1.7300e-003	0.2543	0.0672	1.5900e-003	0.0688	0.0000	200.8589	200.8589	4.8900e-003	0.0000	200.9811
Total	**0.1415**	**0.7223**	**0.9904**	**4.0500e-003**	**0.2978**	**3.0700e-003**	**0.3009**	**0.0803**	**2.8700e-003**	**0.0831**	**0.0000**	**374.2444**	**374.2444**	**7.5600e-003**	**0.0000**	**374.4333**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2054	1.8900	1.9416	3.0500e-003		0.1041	0.1041		0.0971	0.0971	0.0000	263.7780	263.7780	0.0674	0.0000	265.4622
Total	**0.2054**	**1.8900**	**1.9416**	**3.0500e-003**		**0.1041**	**0.1041**		**0.0971**	**0.0971**	**0.0000**	**263.7780**	**263.7780**	**0.0674**	**0.0000**	**265.4622**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0193	0.6538	0.2444	1.8300e-003	0.0452	1.3400e-003	0.0466	0.0131	1.2800e-003	0.0144	0.0000	173.3855	173.3855	2.6700e-003	0.0000	173.4522
Worker	0.1222	0.0685	0.7460	2.2200e-003	0.2526	1.7300e-003	0.2543	0.0672	1.5900e-003	0.0688	0.0000	200.8589	200.8589	4.8900e-003	0.0000	200.9811
Total	**0.1415**	**0.7223**	**0.9904**	**4.0500e-003**	**0.2978**	**3.0700e-003**	**0.3009**	**0.0803**	**2.8700e-003**	**0.0831**	**0.0000**	**374.2444**	**374.2444**	**7.5600e-003**	**0.0000**	**374.4333**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0877	0.8844	1.1592	1.8100e-003		0.0452	0.0452		0.0415	0.0415	0.0000	159.2191	159.2191	0.0515	0.0000	160.5065
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0881**	**0.8844**	**1.1592**	**1.8100e-003**		**0.0452**	**0.0452**		**0.0415**	**0.0415**	**0.0000**	**159.2191**	**159.2191**	**0.0515**	**0.0000**	**160.5065**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4800e-003	4.4000e-003	0.0471	1.3000e-004	0.0146	1.0000e-004	0.0147	3.8800e-003	9.0000e-005	3.9800e-003	0.0000	12.0555	12.0555	3.2000e-004	0.0000	12.0634
Total	**7.4800e-003**	**4.4000e-003**	**0.0471**	**1.3000e-004**	**0.0146**	**1.0000e-004**	**0.0147**	**3.8800e-003**	**9.0000e-005**	**3.9800e-003**	**0.0000**	**12.0555**	**12.0555**	**3.2000e-004**	**0.0000**	**12.0634**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0877	0.8844	1.1592	1.8100e-003		0.0452	0.0452		0.0415	0.0415	0.0000	159.2189	159.2189	0.0515	0.0000	160.5063
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0881**	**0.8844**	**1.1592**	**1.8100e-003**		**0.0452**	**0.0452**		**0.0415**	**0.0415**	**0.0000**	**159.2189**	**159.2189**	**0.0515**	**0.0000**	**160.5063**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4800e-003	4.4000e-003	0.0471	1.3000e-004	0.0146	1.0000e-004	0.0147	3.8800e-003	9.0000e-005	3.9800e-003	0.0000	12.0555	12.0555	3.2000e-004	0.0000	12.0634
Total	**7.4800e-003**	**4.4000e-003**	**0.0471**	**1.3000e-004**	**0.0146**	**1.0000e-004**	**0.0147**	**3.8800e-003**	**9.0000e-005**	**3.9800e-003**	**0.0000**	**12.0555**	**12.0555**	**3.2000e-004**	**0.0000**	**12.0634**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0935	0.9223	1.3199	2.0600e-003		0.0462	0.0462		0.0425	0.0425	0.0000	181.2431	181.2431	0.0586	0.0000	182.7086
Paving	4.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0939**	**0.9223**	**1.3199**	**2.0600e-003**		**0.0462**	**0.0462**		**0.0425**	**0.0425**	**0.0000**	**181.2431**	**181.2431**	**0.0586**	**0.0000**	**182.7086**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0400e-003	4.5100e-003	0.0491	1.5000e-004	0.0166	1.1000e-004	0.0167	4.4200e-003	1.0000e-004	4.5300e-003	0.0000	13.2144	13.2144	3.2000e-004	0.0000	13.2224
Total	**8.0400e-003**	**4.5100e-003**	**0.0491**	**1.5000e-004**	**0.0166**	**1.1000e-004**	**0.0167**	**4.4200e-003**	**1.0000e-004**	**4.5300e-003**	**0.0000**	**13.2144**	**13.2144**	**3.2000e-004**	**0.0000**	**13.2224**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0935	0.9223	1.3199	2.0600e-003		0.0462	0.0462		0.0425	0.0425	0.0000	181.2429	181.2429	0.0586	0.0000	182.7084
Paving	4.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0939**	**0.9223**	**1.3199**	**2.0600e-003**		**0.0462**	**0.0462**		**0.0425**	**0.0425**	**0.0000**	**181.2429**	**181.2429**	**0.0586**	**0.0000**	**182.7084**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0400e-003	4.5100e-003	0.0491	1.5000e-004	0.0166	1.1000e-004	0.0167	4.4200e-003	1.0000e-004	4.5300e-003	0.0000	13.2144	13.2144	3.2000e-004	0.0000	13.2224
Total	**8.0400e-003**	**4.5100e-003**	**0.0491**	**1.5000e-004**	**0.0166**	**1.1000e-004**	**0.0167**	**4.4200e-003**	**1.0000e-004**	**4.5300e-003**	**0.0000**	**13.2144**	**13.2144**	**3.2000e-004**	**0.0000**	**13.2224**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5645					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1120	0.1442	2.4000e-004		6.5000e-003	6.5000e-003		6.5000e-003	6.5000e-003	0.0000	20.2984	20.2984	1.3200e-003	0.0000	20.3314
Total	**0.5808**	**0.1120**	**0.1442**	**2.4000e-004**		**6.5000e-003**	**6.5000e-003**		**6.5000e-003**	**6.5000e-003**	**0.0000**	**20.2984**	**20.2984**	**1.3200e-003**	**0.0000**	**20.3314**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0229	0.0135	0.1445	4.1000e-004	0.0448	3.2000e-004	0.0451	0.0119	2.9000e-004	0.0122	0.0000	36.9701	36.9701	9.7000e-004	0.0000	36.9944
Total	**0.0229**	**0.0135**	**0.1445**	**4.1000e-004**	**0.0448**	**3.2000e-004**	**0.0451**	**0.0119**	**2.9000e-004**	**0.0122**	**0.0000**	**36.9701**	**36.9701**	**9.7000e-004**	**0.0000**	**36.9944**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5645					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1120	0.1442	2.4000e-004		6.5000e-003	6.5000e-003		6.5000e-003	6.5000e-003	0.0000	20.2983	20.2983	1.3200e-003	0.0000	20.3314
Total	**0.5808**	**0.1120**	**0.1442**	**2.4000e-004**		**6.5000e-003**	**6.5000e-003**		**6.5000e-003**	**6.5000e-003**	**0.0000**	**20.2983**	**20.2983**	**1.3200e-003**	**0.0000**	**20.3314**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0229	0.0135	0.1445	4.1000e-004	0.0448	3.2000e-004	0.0451	0.0119	2.9000e-004	0.0122	0.0000	36.9701	36.9701	9.7000e-004	0.0000	36.9944
Total	**0.0229**	**0.0135**	**0.1445**	**4.1000e-004**	**0.0448**	**3.2000e-004**	**0.0451**	**0.0119**	**2.9000e-004**	**0.0122**	**0.0000**	**36.9701**	**36.9701**	**9.7000e-004**	**0.0000**	**36.9944**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6426					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0174	0.1179	0.1639	2.7000e-004		6.4100e-003	6.4100e-003		6.4100e-003	6.4100e-003	0.0000	23.1070	23.1070	1.3800e-003	0.0000	23.1415
Total	**0.6600**	**0.1179**	**0.1639**	**2.7000e-004**		**6.4100e-003**	**6.4100e-003**		**6.4100e-003**	**6.4100e-003**	**0.0000**	**23.1070**	**23.1070**	**1.3800e-003**	**0.0000**	**23.1415**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0138	0.1505	4.5000e-004	0.0510	3.5000e-004	0.0513	0.0136	3.2000e-004	0.0139	0.0000	40.5242	40.5242	9.9000e-004	0.0000	40.5488
Total	**0.0247**	**0.0138**	**0.1505**	**4.5000e-004**	**0.0510**	**3.5000e-004**	**0.0513**	**0.0136**	**3.2000e-004**	**0.0139**	**0.0000**	**40.5242**	**40.5242**	**9.9000e-004**	**0.0000**	**40.5488**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6426					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0174	0.1179	0.1639	2.7000e-004		6.4100e-003	6.4100e-003		6.4100e-003	6.4100e-003	0.0000	23.1069	23.1069	1.3800e-003	0.0000	23.1415
Total	**0.6600**	**0.1179**	**0.1639**	**2.7000e-004**		**6.4100e-003**	**6.4100e-003**		**6.4100e-003**	**6.4100e-003**	**0.0000**	**23.1069**	**23.1069**	**1.3800e-003**	**0.0000**	**23.1415**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0138	0.1505	4.5000e-004	0.0510	3.5000e-004	0.0513	0.0136	3.2000e-004	0.0139	0.0000	40.5242	40.5242	9.9000e-004	0.0000	40.5488
Total	**0.0247**	**0.0138**	**0.1505**	**4.5000e-004**	**0.0510**	**3.5000e-004**	**0.0513**	**0.0136**	**3.2000e-004**	**0.0139**	**0.0000**	**40.5242**	**40.5242**	**9.9000e-004**	**0.0000**	**40.5488**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	0.00	0.00	0.00		
Congregate Care (Assisted Living)	0.00	0.00	0.00		
Congregate Care (Assisted Living)	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Health Club	14.70	6.60	6.60	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	14.70	6.60	6.60	8.50	72.50	19.00	37	20	43
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Light Industry	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Health Club	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
High Turnover (Sit Down Restaurant)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
User Defined Industrial	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Other Non-Asphalt Surfaces	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Unrefrigerated Warehouse-No Rail	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3574	1.9700e-003	0.1709	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2796	0.2796	2.7000e-004	0.0000	0.2865
Unmitigated	0.3574	1.9700e-003	0.1709	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2796	0.2796	2.7000e-004	0.0000	0.2865

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3522					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.2200e-003	1.9700e-003	0.1709	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2796	0.2796	2.7000e-004	0.0000	0.2865
Total	**0.3574**	**1.9700e-003**	**0.1709**	**1.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**0.2796**	**0.2796**	**2.7000e-004**	**0.0000**	**0.2865**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3522					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.2200e-003	1.9700e-003	0.1709	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2796	0.2796	2.7000e-004	0.0000	0.2865
Total	**0.3574**	**1.9700e-003**	**0.1709**	**1.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**0.2796**	**0.2796**	**2.7000e-004**	**0.0000**	**0.2865**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	0 / 0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	0 / 0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0 / 0	0.0000	0.0000	0.0000	0.0000
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	0	0.0000	0.0000	0.0000	0.0000
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
General Office Building	0	0.0000	0.0000	0.0000	0.0000
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Growlersberg Conservation Camp Replacement Project Operations

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.60	1000sqft	0.13	5,601.00	0
General Office Building	0.88	1000sqft	0.02	884.00	0
General Light Industry	4.76	1000sqft	0.11	4,760.00	0
General Light Industry	7.23	1000sqft	0.17	7,233.00	0
General Light Industry	7.45	1000sqft	0.17	7,445.00	0
Unrefrigerated Warehouse-No Rail	7.30	1000sqft	0.17	7,304.00	0
User Defined Industrial	2.92	User Defined Unit	0.07	2,920.00	0
User Defined Industrial	1.59	User Defined Unit	0.04	1,592.00	0
User Defined Industrial	3.17	User Defined Unit	0.07	3,174.00	0
User Defined Industrial	0.73	User Defined Unit	0.02	732.00	0
User Defined Industrial	0.11	User Defined Unit	0.00	106.00	0
User Defined Industrial	1.95	User Defined Unit	0.04	1,950.00	0
Parking Lot	70.00	Space	0.63	28,000.00	0
Health Club	7.45	1000sqft	0.17	7,445.00	0
High Turnover (Sit Down Restaurant)	8.82	1000sqft	0.20	8,824.00	0
Congregate Care (Assisted Living)	14.54	Dwelling Unit	0.91	14,544.00	136
Congregate Care (Assisted Living)	1.28	Dwelling Unit	0.08	1,280.00	4
Congregate Care (Assisted Living)	7.03	Dwelling Unit	0.44	7,030.00	24

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - General Office Bld. = Blds. A, P; Health Club = Bld. B; Sit-down Rest. = Bld. C; Congregate Care = Blds. D, K, & N population based on # of beds; Warehouse = Blds. M; General Light Industrial = Bld. F, H, L; User Defined = E, G, J1, J2, O, Q

Construction Phase - Existing conditions model run only

Off-road Equipment - Existing conditions model run only

Trips and VMT - Existing Conditions model run

Demolition -

Architectural Coating - Existing conditions model run only

Vehicle Trips - Worker trips updated to match PD (14 CalFire employees and 12 CDCR employees)

Woodstoves - No wood fireplaces allowed in new construction

Energy Use - Using historic data to show existing conditions, User defined industrial energy usage = 1/2 the energy use of general light industrial to show conservative energy useage for storage buildings (per square foot).

Water And Wastewater -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	29,985.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	89,955.00	0.00
tblArchitecturalCoating	ConstArea_Parking	1,680.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	15,426.00	0.00

tblArchitecturalCoating	ConstArea_Residential_Interior	46,279.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblConstructionPhase	NumDays	18.00	0.00
tblEnergyUse	LightingElect	0.00	0.45
tblEnergyUse	NT24E	0.00	0.46
tblEnergyUse	NT24NG	0.00	0.08
tblEnergyUse	T24E	0.00	0.15
tblEnergyUse	T24NG	0.00	0.80
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberNoFireplace	2.29	0.00
tblFireplaces	NumberWood	8.00	0.00
tblLandUse	LandUseSquareFeet	880.00	884.00
tblLandUse	LandUseSquareFeet	5,600.00	5,601.00
tblLandUse	LandUseSquareFeet	7,230.00	7,233.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00
tblLandUse	LandUseSquareFeet	7,300.00	7,304.00
tblLandUse	LandUseSquareFeet	0.00	106.00
tblLandUse	LandUseSquareFeet	0.00	732.00
tblLandUse	LandUseSquareFeet	0.00	1,592.00
tblLandUse	LandUseSquareFeet	0.00	1,950.00
tblLandUse	LandUseSquareFeet	0.00	2,920.00
tblLandUse	LandUseSquareFeet	0.00	3,174.00
tblLandUse	LandUseSquareFeet	7,450.00	7,445.00

tblLandUse	LandUseSquareFeet	8,820.00	8,824.00
tblLandUse	LandUseSquareFeet	14,540.00	14,544.00
tblLandUse	LotAcreage	0.00	0.02
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.04
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	LotAcreage	0.00	0.07
tblLandUse	Population	42.00	136.00
tblLandUse	Population	20.00	24.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	11.00	0.00
tblVehicleTrips	ST_TR	2.20	2.28
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	158.37	0.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	2.44	2.28
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	131.84	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	2.74	2.28
tblVehicleTrips	WD_TR	6.97	0.00
tblVehicleTrips	WD_TR	11.03	0.00

tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	127.15	0.00
tblVehicleTrips	WD_TR	1.68	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5094	0.0379	0.8147	2.2400e-003		0.1063	0.1063		0.1063	0.1063	13.8261	29.9817	43.8079	0.0655	5.4000e-004	45.6070
Energy	7.2500e-003	0.0657	0.0535	4.0000e-004		5.0100e-003	5.0100e-003		5.0100e-003	5.0100e-003	0.0000	225.9891	225.9891	8.3500e-003	2.7600e-003	227.0198
Mobile	0.0165	0.0610	0.2207	7.3000e-004	0.0716	6.8000e-004	0.0723	0.0192	6.3000e-004	0.0198	0.0000	66.8646	66.8646	1.8900e-003	0.0000	66.9119
Waste						0.0000	0.0000		0.0000	0.0000	41.6700	0.0000	41.6700	2.4626	0.0000	103.2356
Water						0.0000	0.0000		0.0000	0.0000	3.7886	20.9213	24.7099	0.3901	9.3800e-003	37.2582
Total	**0.5332**	**0.1646**	**1.0888**	**3.3700e-003**	**0.0716**	**0.1120**	**0.1836**	**0.0192**	**0.1119**	**0.1311**	**59.2847**	**343.7567**	**403.0414**	**2.9284**	**0.0127**	**480.0325**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5094	0.0379	0.8147	2.2400e-003		0.1063	0.1063		0.1063	0.1063	13.8261	29.9817	43.8079	0.0655	5.4000e-004	45.6070
Energy	6.4100e-003	0.0581	0.0474	3.5000e-004		4.4300e-003	4.4300e-003		4.4300e-003	4.4300e-003	0.0000	209.3224	209.3224	7.8100e-003	2.5300e-003	210.2710
Mobile	0.0165	0.0610	0.2207	7.3000e-004	0.0716	6.8000e-004	0.0723	0.0192	6.3000e-004	0.0198	0.0000	66.8646	66.8646	1.8900e-003	0.0000	66.9119
Waste						0.0000	0.0000		0.0000	0.0000	41.6700	0.0000	41.6700	2.4626	0.0000	103.2356
Water						0.0000	0.0000		0.0000	0.0000	3.0309	16.7371	19.7680	0.3121	7.5100e-003	29.8065
Total	**0.5324**	**0.1570**	**1.0828**	**3.3200e-003**	**0.0716**	**0.1114**	**0.1830**	**0.0192**	**0.1113**	**0.1305**	**58.5270**	**322.9058**	**381.4327**	**2.8499**	**0.0106**	**455.8321**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.16**	**4.60**	**0.56**	**1.48**	**0.00**	**0.52**	**0.32**	**0.00**	**0.52**	**0.44**	**1.28**	**6.07**	**5.36**	**2.68**	**16.56**	**5.04**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/1/2022	2/28/2022	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.63

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0165	0.0610	0.2207	7.3000e-004	0.0716	6.8000e-004	0.0723	0.0192	6.3000e-004	0.0198	0.0000	66.8646	66.8646	1.8900e-003	0.0000	66.9119
Unmitigated	0.0165	0.0610	0.2207	7.3000e-004	0.0716	6.8000e-004	0.0723	0.0192	6.3000e-004	0.0198	0.0000	66.8646	66.8646	1.8900e-003	0.0000	66.9119

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	33.15	33.15	33.15	123,446	123,446
Congregate Care (Assisted Living)	2.92	2.92	2.92	10,867	10,867
Congregate Care (Assisted Living)	16.03	16.03	16.03	59,685	59,685
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Light Industry	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
User Defined Industrial	0.00	0.00	0.00		
Total	52.10	52.10	52.10	193,999	193,999

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
Congregate Care (Assisted Living)	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Health Club	14.70	6.60	6.60	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	14.70	6.60	6.60	8.50	72.50	19.00	37	20	43
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	14.70	6.60	6.60	59.00	0.00	41.00	92	5	3
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Congregate Care (Assisted Living)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Light Industry	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Health Club	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
High Turnover (Sit Down Restaurant)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Unrefrigerated Warehouse-No Rail	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
User Defined Industrial	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	145.8581	145.8581	6.6000e-003	1.3600e-003	146.4296
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	154.2411	154.2411	6.9700e-003	1.4400e-003	154.8455
NaturalGas Mitigated	6.4100e-003	0.0581	0.0474	3.5000e-004		4.4300e-003	4.4300e-003		4.4300e-003	4.4300e-003	0.0000	63.4643	63.4643	1.2200e-003	1.1600e-003	63.8415
NaturalGas Unmitigated	7.2500e-003	0.0657	0.0535	4.0000e-004		5.0100e-003	5.0100e-003		5.0100e-003	5.0100e-003	0.0000	71.7480	71.7480	1.3800e-003	1.3200e-003	72.1744

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Congregate Care (Assisted Living)	27339.9	1.5000e-004	1.2600e-003	5.4000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4590	1.4590	3.0000e-005	3.0000e-005	1.4676
Congregate Care (Assisted Living)	4977.96	3.0000e-005	2.3000e-004	1.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2656	0.2656	1.0000e-005	0.0000	0.2672
Congregate Care (Assisted Living)	56546.5	3.0000e-004	2.6100e-003	1.1100e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0175	3.0175	6.0000e-005	6.0000e-005	3.0355
General Light Industry	16707.6	9.0000e-005	8.2000e-004	6.9000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8916	0.8916	2.0000e-005	2.0000e-005	0.8969
General Light Industry	25387.8	1.4000e-004	1.2400e-003	1.0500e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.3548	1.3548	3.0000e-005	2.0000e-005	1.3628

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	26132	1.4000e-004	1.2800e-003	1.0800e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3945	1.3945	3.0000e-005	3.0000e-005	1.4028
General Office Building	109444	5.9000e-004	5.3600e-003	4.5100e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	5.8403	5.8403	1.1000e-004	1.1000e-004	5.8750
General Office Building	17273.4	9.0000e-005	8.5000e-004	7.1000e-004	1.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.9218	0.9218	2.0000e-005	2.0000e-005	0.9273
Health Club	26132	1.4000e-004	1.2800e-003	1.0800e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3945	1.3945	3.0000e-005	3.0000e-005	1.4028
High Turnover (Sit Down Restaurant)	1.02535e+006	5.5300e-003	0.0503	0.0422	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.7165	54.7165	1.0500e-003	1.0000e-003	55.0417
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	1400.96	1.0000e-005	7.0000e-005	6.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0748	0.0748	0.0000	0.0000	0.0752
User Defined Industrial	1716	1.0000e-005	8.0000e-005	7.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0916	0.0916	0.0000	0.0000	0.0921
User Defined Industrial	2569.6	1.0000e-005	1.3000e-004	1.1000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1371	0.1371	0.0000	0.0000	0.1379
User Defined Industrial	2793.12	2.0000e-005	1.4000e-004	1.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1491	0.1491	0.0000	0.0000	0.1499
User Defined Industrial	644.16	0.0000	3.0000e-005	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0344	0.0344	0.0000	0.0000	0.0346
User Defined Industrial	93.28	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.9800e-003	4.9800e-003	0.0000	0.0000	5.0100e-003
Total		**7.2500e-003**	**0.0656**	**0.0535**	**4.0000e-004**		**5.0100e-003**	**5.0100e-003**		**5.0100e-003**	**5.0100e-003**	**0.0000**	**71.7480**	**71.7480**	**1.3900e-003**	**1.3200e-003**	**72.1744**

5.2 Energy by Land Use - NaturalGas

Mitigated

Growlersberg Conservation Camp Replacement Project Operations - El Dorado-Mountain County County, Annual

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Congregate Care (Assisted Living)	22510.2	1.2000e-004	1.0400e-003	4.4000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.2012	1.2012	2.0000e-005	2.0000e-005	1.2084
Congregate Care (Assisted Living)	4098.59	2.0000e-005	1.9000e-004	8.0000e-005	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2187	0.2187	0.0000	0.0000	0.2200
Congregate Care (Assisted Living)	46557.4	2.5000e-004	2.1500e-003	9.1000e-004	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.4845	2.4845	5.0000e-005	5.0000e-005	2.4992
General Light Industry	12138	7.0000e-005	5.9000e-004	5.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6477	0.6477	1.0000e-005	1.0000e-005	0.6516
General Light Industry	18444.1	1.0000e-004	9.0000e-004	7.6000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9843	0.9843	2.0000e-005	2.0000e-005	0.9901
General Light Industry	18984.8	1.0000e-004	9.3000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0131	1.0131	2.0000e-005	2.0000e-005	1.0191
General Office Building	12091.4	7.0000e-005	5.9000e-004	5.0000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6452	0.6452	1.0000e-005	1.0000e-005	0.6491
General Office Building	76610.5	4.1000e-004	3.7600e-003	3.1500e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.0882	4.0882	8.0000e-005	7.0000e-005	4.1125
Health Club	18984.8	1.0000e-004	9.3000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0131	1.0131	2.0000e-005	2.0000e-005	1.0191
High Turnover (Sit Down Restaurant)	952154	5.1300e-003	0.0467	0.0392	2.8000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	50.8106	50.8106	9.7000e-004	9.3000e-004	51.1125
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	1018.88	1.0000e-005	5.0000e-005	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0544	0.0544	0.0000	0.0000	0.0547
User Defined Industrial	1248	1.0000e-005	6.0000e-005	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0666	0.0666	0.0000	0.0000	0.0670
User Defined Industrial	1868.8	1.0000e-005	9.0000e-005	8.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.0997	0.0997	0.0000	0.0000	0.1003
User Defined Industrial	2031.36	1.0000e-005	1.0000e-004	8.0000e-005	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1084	0.1084	0.0000	0.0000	0.1091
User Defined Industrial	468.48	0.0000	2.0000e-005	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0250	0.0250	0.0000	0.0000	0.0252
User Defined Industrial	67.84	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6200e-003	3.6200e-003	0.0000	0.0000	3.6400e-003

Total		6.4100e-003	0.0581	0.0474	3.5000e-004		4.4400e-003	4.4400e-003		4.4400e-003	4.4400e-003	0.0000	63.4644	63.4644	1.2000e-003	1.1500e-003	63.8415

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	32522	9.4610	4.3000e-004	9.0000e-005	9.4981
Congregate Care (Assisted Living)	5921.5	1.7226	8.0000e-005	2.0000e-005	1.7294
Congregate Care (Assisted Living)	67264.5	19.5680	8.8000e-004	1.8000e-004	19.6447
General Light Industry	20372.8	5.9267	2.7000e-004	6.0000e-005	5.9499
General Light Industry	30957.2	9.0058	4.1000e-004	8.0000e-005	9.0411
General Light Industry	31864.6	9.2698	4.2000e-004	9.0000e-005	9.3061
General Office Building	61947.1	18.0211	8.1000e-004	1.7000e-004	18.0917
General Office Building	9777.04	2.8443	1.3000e-004	3.0000e-005	2.8554
Health Club	31864.6	9.2698	4.2000e-004	9.0000e-005	9.3061
High Turnover (Sit Down Restaurant)	216806	63.0713	2.8500e-003	5.9000e-004	63.3184
Parking Lot	9800	2.8509	1.3000e-004	3.0000e-005	2.8621
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	112.36	0.0327	0.0000	0.0000	0.0328

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	1687.52	0.4909	2.0000e-005	0.0000	0.4928
User Defined Industrial	2067	0.6013	3.0000e-005	1.0000e-005	0.6037
User Defined Industrial	3095.2	0.9004	4.0000e-005	1.0000e-005	0.9040
User Defined Industrial	3364.44	0.9788	4.0000e-005	1.0000e-005	0.9826
User Defined Industrial	775.92	0.2257	1.0000e-005	0.0000	0.2266
Total		**154.2411**	**6.9700e-003**	**1.4600e-003**	**154.8455**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	30770.2	8.9514	4.0000e-004	8.0000e-005	8.9865
Congregate Care (Assisted Living)	5602.54	1.6298	7.0000e-005	2.0000e-005	1.6362
Congregate Care (Assisted Living)	63641.3	18.5140	8.4000e-004	1.7000e-004	18.5865
General Light Industry	19487.4	5.6691	2.6000e-004	5.0000e-005	5.6913
General Light Industry	29611.9	8.6144	3.9000e-004	8.0000e-005	8.6482
General Light Industry	30479.8	8.8669	4.0000e-004	8.0000e-005	8.9017

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	55847.6	16.2467	7.3000e-004	1.5000e-004	16.3104
General Office Building	8814.36	2.5642	1.2000e-004	2.0000e-005	2.5743
Health Club	30479.8	8.8669	4.0000e-004	8.0000e-005	8.9017
High Turnover (Sit Down Restaurant)	206217	59.9909	2.7100e-003	5.6000e-004	60.2259
Parking Lot	9800	2.8509	1.3000e-004	3.0000e-005	2.8621
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
User Defined Industrial	107.59	0.0313	0.0000	0.0000	0.0314
User Defined Industrial	1615.88	0.4701	2.0000e-005	0.0000	0.4719
User Defined Industrial	1979.25	0.5758	3.0000e-005	1.0000e-005	0.5780
User Defined Industrial	2963.8	0.8622	4.0000e-005	1.0000e-005	0.8656
User Defined Industrial	3221.61	0.9372	4.0000e-005	1.0000e-005	0.9409
User Defined Industrial	742.98	0.2161	1.0000e-005	0.0000	0.2170
Total		**145.8580**	**6.5900e-003**	**1.3500e-003**	**146.4296**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5094	0.0379	0.8147	2.2400e-003		0.1063	0.1063		0.1063	0.1063	13.8261	29.9817	43.8079	0.0655	5.4000e-004	45.6070
Unmitigated	0.5094	0.0379	0.8147	2.2400e-003		0.1063	0.1063		0.1063	0.1063	13.8261	29.9817	43.8079	0.0655	5.4000e-004	45.6070

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1062					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0727	0.0360	0.6439	2.2300e-003		0.1053	0.1053		0.1053	0.1053	13.8261	29.7023	43.5284	0.0652	5.4000e-004	45.3208
Landscaping	5.2100e-003	1.9600e-003	0.1708	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2795	0.2795	2.7000e-004	0.0000	0.2863
Total	**0.5094**	**0.0379**	**0.8147**	**2.2400e-003**		**0.1063**	**0.1063**		**0.1063**	**0.1063**	**13.8261**	**29.9817**	**43.8079**	**0.0655**	**5.4000e-004**	**45.6070**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1062					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3253					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0727	0.0360	0.6439	2.2300e-003		0.1053	0.1053		0.1053	0.1053	13.8261	29.7023	43.5284	0.0652	5.4000e-004	45.3208
Landscaping	5.2100e-003	1.9600e-003	0.1708	1.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	0.2795	0.2795	2.7000e-004	0.0000	0.2863
Total	**0.5094**	**0.0379**	**0.8147**	**2.2400e-003**		**0.1063**	**0.1063**		**0.1063**	**0.1063**	**13.8261**	**29.9817**	**43.8079**	**0.0655**	**5.4000e-004**	**45.6070**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	19.7680	0.3121	7.5100e-003	29.8065
Unmitigated	24.7099	0.3901	9.3800e-003	37.2582

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	1.48877 / 0.938572	3.7715	0.0487	1.1800e-003	5.3385
General Light Industry	4.4955 / 0	8.5027	0.1468	3.5300e-003	13.2233
General Office Building	1.15171 / 0.70589	2.8971	0.0376	9.1000e-004	4.1093
Health Club	0.440616 / 0.270055	1.1083	0.0144	3.5000e-004	1.5721
High Turnover (Sit Down Restaurant)	2.67717 / 0.170883	5.2375	0.0874	2.1000e-003	8.0494
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.68813 / 0	3.1929	0.0551	1.3200e-003	4.9655
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**24.7100**	**0.3901**	**9.3900e-003**	**37.2582**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	1.19102 / 0.750858	3.0172	0.0389	9.4000e-004	4.2708
General Light Industry	3.5964 / 0	6.8021	0.1174	2.8200e-003	10.5786
General Office Building	0.921372 / 0.564712	2.3176	0.0301	7.3000e-004	3.2874
Health Club	0.352493 / 0.216044	0.8867	0.0115	2.8000e-004	1.2577
High Turnover (Sit Down Restaurant)	2.14173 / 0.136706	4.1900	0.0700	1.6800e-003	6.4395
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	1.3505 / 0	2.5543	0.0441	1.0600e-003	3.9724
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**19.7679**	**0.3121**	**7.5100e-003**	**29.8065**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	41.6700	2.4626	0.0000	103.2356
Unmitigated	41.6700	2.4626	0.0000	103.2356

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	20.85	4.2324	0.2501	0.0000	10.4855
General Light Industry	24.11	4.8941	0.2892	0.0000	12.1250
General Office Building	6.03	1.2240	0.0723	0.0000	3.0325
Health Club	42.47	8.6210	0.5095	0.0000	21.3582
High Turnover (Sit Down Restaurant)	104.96	21.3059	1.2591	0.0000	52.7845
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	6.86	1.3925	0.0823	0.0000	3.4499
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**41.6700**	**2.4626**	**0.0000**	**103.2356**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	20.85	4.2324	0.2501	0.0000	10.4855
General Light Industry	24.11	4.8941	0.2892	0.0000	12.1250
General Office Building	6.03	1.2240	0.0723	0.0000	3.0325
Health Club	42.47	8.6210	0.5095	0.0000	21.3582
High Turnover (Sit Down Restaurant)	104.96	21.3059	1.2591	0.0000	52.7845
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	6.86	1.3925	0.0823	0.0000	3.4499
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**41.6700**	**2.4626**	**0.0000**	**103.2356**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

Biological Resources Assessment, Growlersburg Conservation Camp Project, El Dorado County, California , ECORP Consulting, Inc. CLIENT REVIEW DRAFT.

Biological Resources Assessment

Growlersburg Conservation Camp Project

El Dorado County, California

Prepared For:

State of California, Real Estate Service Division

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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LIST OF ACRONYMS AND ABBREVIATIONS

BA	Biological Assessment
BCC	Birds of Conservation Concern
BO	Biological Opinion
BRA	Biological Resources Assessment
CAL FIRE	California Department of Forestry and Fire Protection
CDCR	California Department of Corrections and Rehabilitation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ESA	Endangered Species Act
F	Fahrenheit
LSA	Lake or Streambed Alteration
MBTA	Migratory Bird Treaty Act
MSL	Mean sea level
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
ORMP	Oak Resources Management Plan
Project	Growlersburg Conservation Camp Project
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
Study Area	Environmental Study Limits
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service
WBWG	Western Bat Working Group

1.0 INTRODUCTION

On behalf of the State of California, Real Estate Service Division, ECORP Consulting, Inc. conducted a Biological Resources Assessment (BRA) for the Growlersburg Conservation Camp Project (Project) located in El Dorado County. For this BRA, the Environmental Study Limits (Study Area) is 22.6 acres. The purpose of the assessment was to collect information on the biological resources present and evaluate the potential for special-status species and their habitats to occur in the Study Area, assess potential biological impacts related to Project activities, and identify potential mitigation measures to inform the Project's California Environmental Quality Act (CEQA) documentation for biological resources.

1.1 Project Location

The Study Area is located in Section 9 of Township 12 North, Range 10 East, (Mount Diablo Base and Meridian) of the Georgetown, California 7.5' topographic quadrangle (U.S. Geological Survey [USGS] 1949, photorevised 1973) (Figure 1. *Study Area Location and Vicinity*). The Study Area is located at the intersection of Reservoir Road and Longview Lane, approximately 1.5 miles west of the town of Georgetown. The approximate center of the Study Area is located at NAD83 coordinates 38.90366° latitude and -120.869963° longitude within the South Fork American Watershed (Hydrologic Unit Code #18020129; Natural Resources Conservation Service [NRCS] et al. 2016).

1.2 Purpose of this Biological Resources Assessment

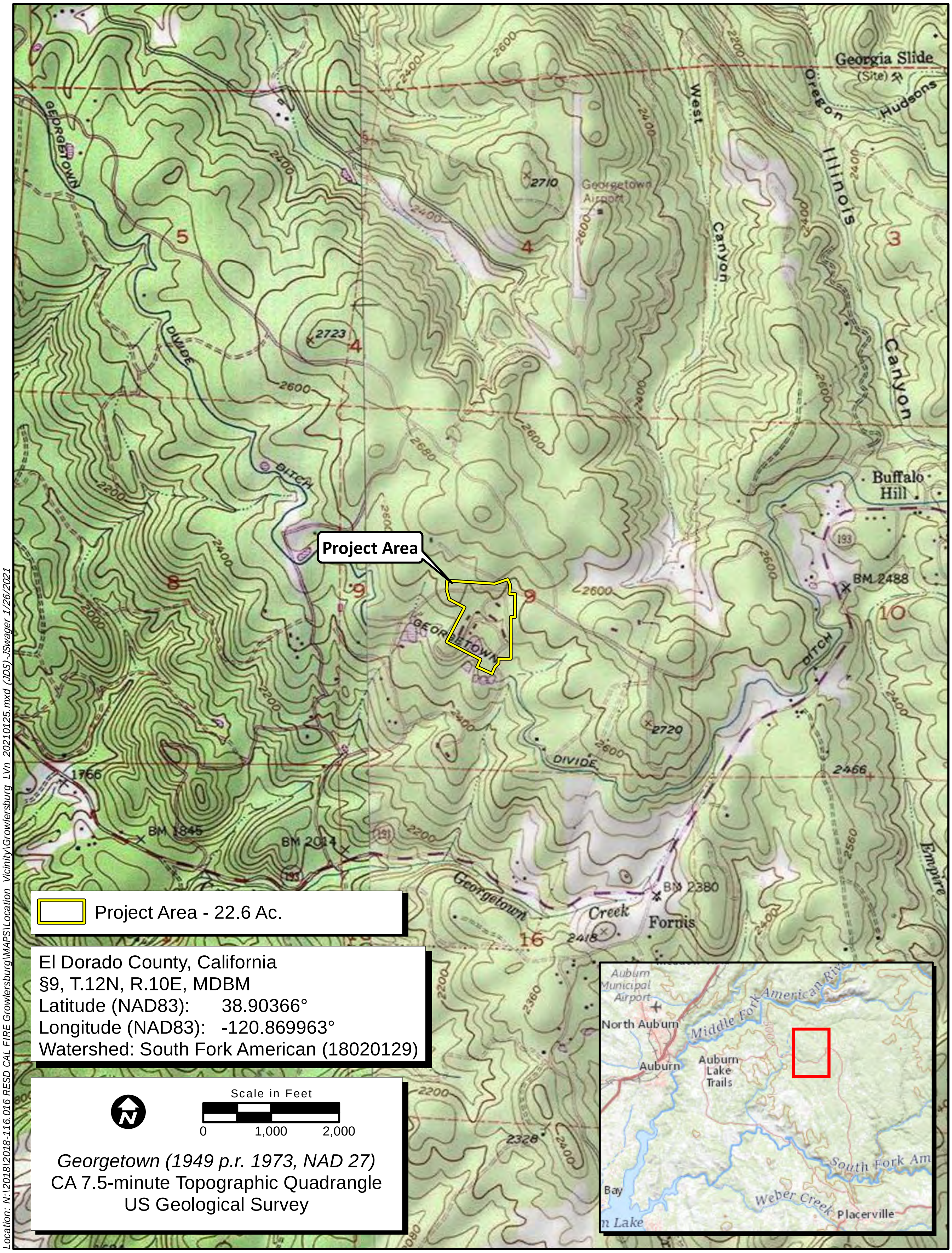
The purpose of this BRA is to assess the potential for occurrence of special-status plant and animal species or their habitats and sensitive habitats such as wetlands, riparian communities, and sensitive natural communities within the Study Area.

This assessment includes information generated from assessment-level and determinate surveys of the Study Area, including a burrowing owl survey and habitat assessment, a California tiger salamander habitat assessment, a dry season survey for federally listed large branchiopods, and an aquatic resources delineation. This BRA does not include determinate field surveys for other wildlife or plant species.

This assessment includes a preliminary analysis of impacts on biological resources anticipated to result from the Project, as presently defined. The mitigation recommendations presented in this assessment are based on the preliminary analysis, a review of existing literature, and the results of site reconnaissance surveys.

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under Section 15380 of the CEQA Guidelines;



Location: N:\2018\2018-116.016 RESD CAL FIRE Growlersburg\MAPS\Location_Vicinity\Growlersburg_LVn_20210125.mxd (JDS)-JSwager 1/26/2021

Map Date: 1/26/2021

Sources: ESRI, USGS, WCE

Figure 1. Study Area Location and Vicinity

2018-116.016 RESD CAL FIRE Growlersburg

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- are identified as a species of special concern (SSC) by the California Department of Fish and Wildlife (CDFW);
- are birds identified as birds of conservation concern (BCC) by the U.S. Fish and Wildlife Service (USFWS);
- are plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" [California Rare Plant Rank (CRPR) 1 and 2] ", "plants about which more information is needed" (i.e., species with a CRPR of 3), or "plants of limited distribution – a watch list" (i.e., species with a CRPR of 4);
- are plants listed as rare under the California Native Plant Protection Act (NPPA, California Fish and Game Code, § 1900 et seq.); or
- are fully protected in California in accordance with the California Fish and Game Code, §§ 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes).

Only species that fall into one of the above-listed groups were considered for this assessment. While other species (i.e., special-status lichens, California Natural Diversity Database (CNDDB) tracked species with no special status) are sometimes found in database searches or within the literature, these species were not included within this analysis.

1.3 Project Description

The proposed Project includes the replacement/upgrade of the existing Conservation Camp and associated facilities/structures. Facilities to be replaced and/or constructed would include an administration building, inmate dorm building, inmate recreation building, inmate hobby building, California Department of Corrections and Rehabilitation (CDCR)/California Department of Forestry and Fire Protection (CAL FIRE) barracks building, inmate kitchen and mess hall, multipurpose facility, inmate staging area (with restroom and showers), warehouse, carpentry shop, auto welding shop, vehicle storage building, sawmill shed, sawmill building, planer/assembly building (including dry kilns), pole barn, generate/pump/storage/building, covered vehicle rack, and vehicle wash recycling. The Proposed Project would be constructed on property currently controlled by CAL FIRE and an expansion area that is currently part of the camp property.

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The ESA protects plants and animals that are listed as endangered or threatened by the USFWS and the National Marine Fisheries Service (NMFS). Section 9 of ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S. Code 1538). Under Section 7 of ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion (BO), the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan is developed.

2.1.1.1 Section 7

Section 7 of ESA mandates that all federal agencies consult with USFWS and/or NMFS to ensure that federal agencies' actions do not jeopardize the continued existence of a listed species or adversely modify Critical Habitat for listed species. If direct and/or indirect effects will occur to Critical Habitat that appreciably diminish the value of Critical Habitat for both the survival and recovery of a species, the adverse modifications will require formal consultation with USFWS or NMFS. If adverse effects are likely, the applicant must conduct a biological assessment (BA) for the purpose of analyzing the potential effects of the project on listed species and critical habitat to establish and justify an "effect determination." The federal agency reviews the BA; if it concludes that the project may adversely affect a listed species or its habitat, it prepares a BO, which may recommend "reasonable and prudent alternatives" to the project to avoid jeopardizing or adversely modifying habitat.

2.1.1.2 Critical Habitat and Essential Habitat

Critical Habitat is defined in Section 3 of the ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and

2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential lifecycle needs of the species. These include but are not limited to the following:

1. Space for individual and population growth and for normal behavior;

2. Food, water, air, light, minerals, or other nutritional or physiological requirements;

3. Cover or shelter;

4. Sites for breeding, reproduction, or rearing (or development) of offspring;

5. Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species;

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized under the MBTA, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13 General Permit Procedures and 50 CFR Part 21 Migratory Bird Permits. The State of California has incorporated the protection of non-game birds in § 3800, migratory birds in § 3513, and birds of prey in § 3503.5 of the California Fish and Game Code.

2.1.3 Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into "Waters of the United States" without a permit from the U.S. Army Corps of Engineers (USACE). The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). The U.S. Environmental Protection Agency also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; in California, this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

2.2 State or Local Regulations

2.2.1 California Endangered Species Act

The California ESA (California Fish and Game Code §§ 2050-2116) protects species of fish, wildlife, and plants listed by the State as endangered or threatened. Species identified as candidates for listing may also receive protection. Section 2080 of the California ESA prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for take incidental to otherwise lawful projects under permits issued by CDFW.

2.2.2 Fully Protected Species

The State of California first began to designate species as "fully protected" prior to the creation of the federal and the California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. Fully protected species are identified in the California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish.

These sections of the California Fish and Game Code provide that fully protected species may not be taken or possessed at any time, including prohibition of CDFW from issuing incidental take permits for fully protected species under the California ESA. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan within which such species are covered.

2.2.3 Native Plant Protection Act

The NPPA of 1977 (California Fish and Game Code §§ 1900-1913) was established with the intent to "preserve, protect and enhance rare and endangered plants in this state." The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as "endangered" or "rare." The NPPA prohibits the take of plants listed under the NPPA, but the NPPA contains a number of exemptions to this prohibition that have not been clarified by regulation or judicial rule. In 1984, the California ESA brought under its protection all plants previously listed as endangered under NPPA. Plants listed as rare under NPPA are not protected under the California ESA but are still protected under the provisions of NPPA. The Fish and Game Commission no longer lists plants under NPPA, reserving all listings to the California ESA.

2.2.4 California Fish and Game Code Special Protections for Birds

In addition to protections contained within the California ESA and California Fish and Game Code § 3511 described above, the California Fish and Game Code includes a number of sections that specifically protect certain birds:

- Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.
- Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.
- Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests.

- Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic nonnative species, or any part of these birds.
- Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

2.2.5 Lake or Streambed Alteration Agreements

Section 1602 of the California Fish and Game Code requires individuals or agencies to provide a Notification of Lake or Streambed Alteration (LSA) to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." CDFW reviews the proposed actions and, if necessary, proposed measures to protect affected fish and wildlife resources. The final proposal mutually agreed upon by CDFW and the applicant is the LSA Agreement.

2.2.6 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the state Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirements for these activities.

2.2.7 California Environmental Quality Act

In accordance with CEQA Guidelines § 15380, a species or subspecies not specifically protected under the federal or California ESAs or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the Guidelines. These criteria parallel the definitions used in the ESA, California ESA, and NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under the ESA, California ESA, or NPPA, but that may meet the definition of endangered, rare, or threatened. Animal species identified as SSC by CDFW, birds identified as a conservation concern by USFWS, and plants identified by the CNPS as rare, threatened, or endangered may meet the CEQA definition of rare or endangered.

2.2.7.1 Species of Special Concern

SSC are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under the federal ESA, California ESA, or California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding range.
- The species is listed as federally (but not State) threatened or endangered or meets the State definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for State threatened or endangered status.
- SSC are typically associated with habitats that are threatened.

Projects that result in substantial impacts to SSC may be considered significant under CEQA.

2.2.7.2 U.S. Fish and Wildlife Service Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA." To meet this requirement, USFWS published a list of BCC (USFWS 2008) for the U.S. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities. Projects that result in substantial impacts to BCC may be considered significant under CEQA.

2.2.7.3 Sensitive Natural Communities

The CDFW maintains the California Natural Community List (CDFW 2020), which provides a list of vegetation alliances, associations, and special stands as defined in the *Manual of California Vegetation* (Sawyer et al. 2009), along with their respective State and global rarity ranks. Natural communities with a State rarity rank of S1, S2, or S3 are considered sensitive natural communities. Impacts to sensitive natural communities may be considered significant under CEQA.

2.2.7.4 California Rare Plant Ranks

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2021), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, non-governmental organizations, and private-sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the CNDDB. The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere.
- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat).
- Threat Rank 0.2 – Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat).
- Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors such as habitat vulnerability and specificity, distribution, and condition of occurrences are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2021).

Substantial impacts to plants ranked 1A, 1B, 2, and 3 are typically considered significant under CEQA Guidelines § 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA lead agency.

2.2.7.5 CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, § 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines, which provides examples of impacts that would normally be considered significant.

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant under CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

2.2.8 El Dorado County General Plan

The Open Space and Conservation Element of the El Dorado County General Plan (2004) includes the following goals and objectives that are pertinent to this Project:

- Goal 7.4. Wildlife and Vegetation Resources-Identify, conserve, and manage wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value.
    - Objective 7.4.1-Rare, Threatened, and Endangered Species-The County shall protect State and federally recognized rare, threatened, or endangered species and their habitats consistent with federal and State laws.
    - Objective 7.4.2-Identify and Protect Resources-Identification and protection, where feasible, of critical fish and wildlife habitat including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat.
    - Objective 7.4.3-Coordination with Appropriate Agencies-Coordination of wildlife and vegetation protection programs with appropriate federal and State agencies.
    - Objective 7.4.4-Forest and Woodland Resources-Protect and conserve forest and woodland resources for their wildlife habitat, recreation, water production, domestic livestock grazing, production of a sustainable flow of wood products, and aesthetic values.
    - Objective 7.4.5-Native Vegetation and Landmark Trees-Protect and maintain native trees including oaks and landmark and heritage trees.

Oak Resources Management Plan (Ordinance No. 5061)

The El Dorado County Oak Resources Conservation Ordinance establishes standards for implementing the County's Oak Resources Management Plan (ORMP) in compliance with General Plan policy 7.4.4.4 and Implementation Measure CO-P (mitigation requirement for impact to oak resources).

3.0 METHODS

3.1 Literature Review

The following resources were queried to determine the special-status species that had been documented within or in the vicinity of the Study Area:

- CDFW CNDDB data for the "Georgetown, California" 7.5-minute USGS quadrangle (CDFW 2021).
- USFWS Information, Planning, and Consultation System Resource Report List for the Study Area (USFWS 2021).
- CNPS' electronic Inventory of Rare and Endangered Plants of California for the "Georgetown, California" 7.5-minute USGS quadrangle and the eight surrounding USGS quadrangles (CNPS 2021).

The results of the database queries are included in Attachment A. Please note that there is no National Oceanic and Atmospheric Administration(NOAA)/NMFS species list for the Georgetown, California quadrangle.

3.2 Field Surveys Conducted

This BRA includes an initial site visit to generally characterize onsite resources, including plant communities, wildlife, special-status species, and sensitive natural communities. The field assessment was conducted by ECORP biologist Keith Kwan on March 3, 2021. The purpose of this assessment was to identify potential biological resources constraints (e.g., aquatic resources, special-status species) onsite, identify regulatory requirements for development of the site, and assess potential mitigation needs. During the assessment, the following biological resource information was collected:

- Direct observations of special-status species;
- Animal and plant species directly observed;
- Habitat and vegetation communities; and
- Identification of aquatic resources.

Other field studies conducted during this field visit include an aquatic resources delineation and an oak tree/oak woodlands survey. The results of these studies will be summarized in this BRA, but the reports will be prepared under separate cover. The aquatic resources delineation was performed in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) or the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountain, Valleys, and Coast Region* (USACE 2010). The oak tree/oak woodland survey was conducted according to the County's Oak Resources Technical Report Checklist prepared by the Community Development Services, Planning and Building Department.

3.3 Special-Status Species Considered for the Project

Based on species occurrence information from the literature review and field observations, a list of special-status species considered to have the potential to occur within the Study Area was generated (Table 1; Section 4.6). Each of the species that were considered as potentially occurring within the Study Area or vicinity was evaluated based on the following criteria:

- **Present** - Species was observed during field surveys or is known to occur within the Study Area based on documented occurrences within the CNDDB or other literature.
- **Potential to Occur** - Habitat (including soils and elevation requirements) for the species occurs within the Study Area.
- **Low Potential to Occur** - Marginal or limited amounts of habitat occur, and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other available documentation.
- **Absent** - No suitable habitat (including soils and elevation requirements), and/or the species is not known to occur within the Study Area or the vicinity of the Study Area based on CNDDB records and other documentation or determinate field surveys.

3.4 Sensitive Natural Communities

The *Manual of California Vegetation, Second Edition* (Sawyer et al. 2009) was used to describe vegetation communities onsite. Sensitive natural communities are those that are listed in the CNDDB.

4.0 RESULTS

4.1 Site Characteristics and Land Use

The Study Area is located at the CDCR/CAL FIRE Growlersburg Conservation Camp, which includes developed areas surrounded by undeveloped forested lands. The Study Area is situated at an elevational range of approximately 2,500 to 2,700 feet above mean sea level (MSL) at the interface of the Sierra Nevada Foothills and the High Sierra Nevada Subregions of the Sierra Nevada floristic region of California (Baldwin et al. 2012). The average winter low temperature is 35.1 degrees Fahrenheit (˚F) and the average summer high temperature is 87.8˚F in Georgetown, California approximately 1.5 miles east of the Study Area; the average annual precipitation is approximately 51.53 inches (NOAA 2021).

The Study Area is made up of developed CDCR/CAL FIRE facilities and the surrounding undeveloped oak woodland/conifer forest. The developed lands onsite include paved surfaces, roads, living quarters, buildings, landscaping, and a large mown ball field/grassy area. The surrounding lands are comprised of oak woodland/conifer forest within private rural residential parcels.

Site photographs are not included, as they are prohibited at CDCR facilities.

4.2 Vegetation Communities

The vegetation communities found outside of the developed portions of the Study Area include *Pinus ponderosa-Calocedrus decurrens* Forest and Woodland Alliance (mixed conifer forest and woodland) and *Quercus kelloggii* Forest and Woodland Alliance (California black oak forest and woodland) (Figure 2. *Vegetation Communities*). Both of these communities have global and State rarity rankings of G4 and S4, respectively, and are not considered sensitive natural communities according to CDFW. Rarity ranks of 1-3 are considered sensitive.

The mixed conifer forest and woodland vegetation community onsite is comprised of codominant trees including incense cedar (*Calocedrus decurrens*) and ponderosa pine (*Pinus ponderosa*), with scattered Douglas fir (*Pseudotsuga menziesii*), and California black oak (*Quercus kelloggii*). The herbaceous understory is comprised of a variety of grasses and forbs. Herbaceous plants found in the understory included wild oats (*Avena* sp.), hedgehog dog-tail grass (*Cynosurus echinatus*), vetch (*Vicia* sp.), goose grass (*Galium aparine*), and hedge parsley (*Torilis arvensis*). Scattered woody plants found in the understory of the mixed conifer forest include California coffeeberry (*Frangula californica*), scotch broom (*Cytisus scoparius*) and manzanita (*Arctostaphylos* species). The understory is open and periodically cleared to reduce fuel.

The California black oak forest and woodland vegetation community onsite is an open canopy woodland dominated by California black oak. The understory plants species in the community include many of the species found in the mixed conifer forest and woodland community.

A list of plants species observed during the site visit is included in Attachment B.

4.3 Wildlife Observations and Movement/Corridors/Nursery Sites

The developed portions of the Study Area are subject to constant levels of disturbance from the presence of people and vehicle traffic throughout the year. The Study Area is not an Important Biological Corridor as described by the County on a map dated March 10, 2020 (El Dorado County 2020).

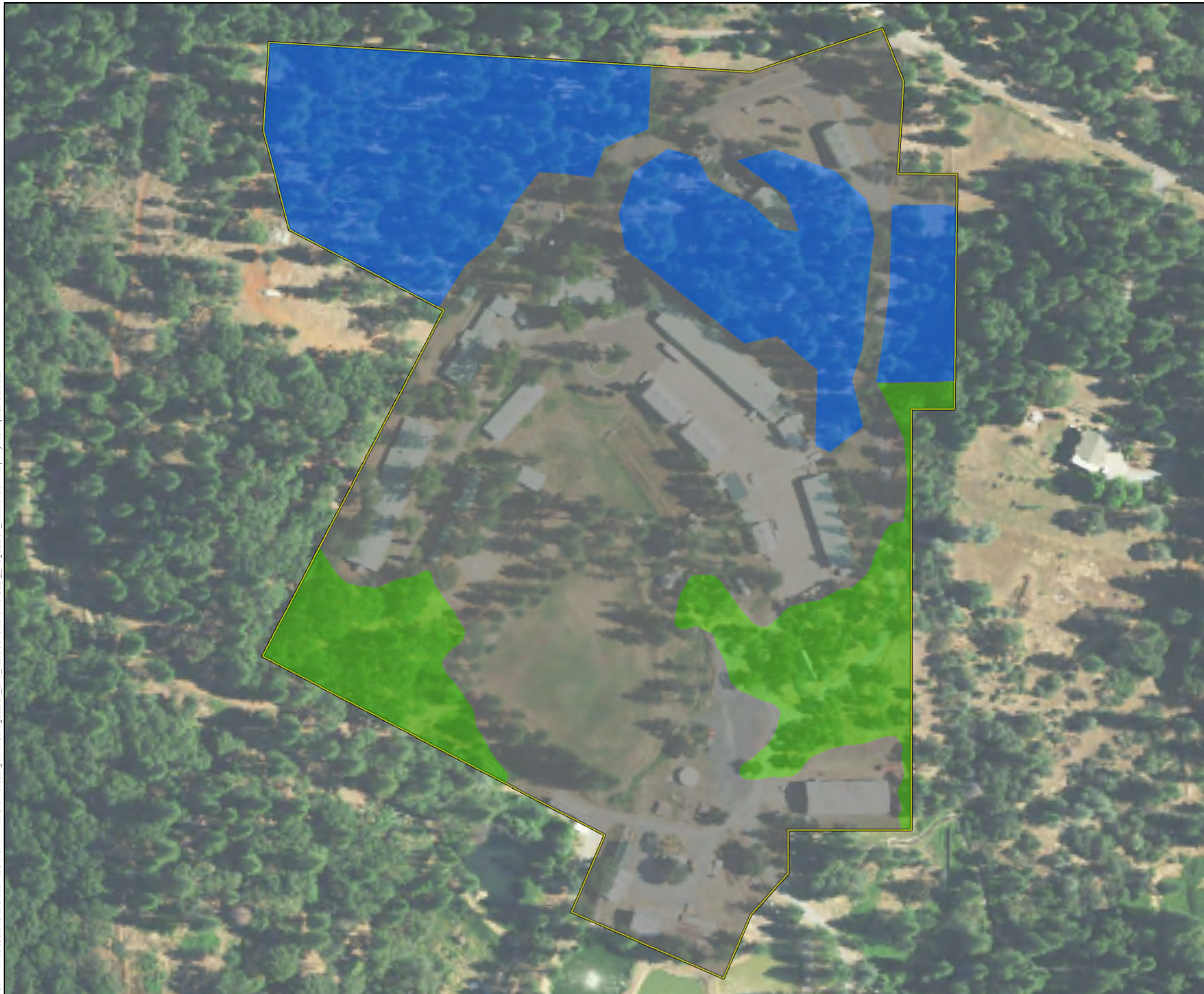
During the site visit in March 2021, a variety of bird species were observed in the Study Area. While the CDCR/CalFire facilities are highly disturbed throughout the year, some nesting bird activity is expected in trees and shrubs onsite and in close proximity to the Study Area.

A list of wildlife species observed during the site visit is included in Attachment C.

4.4 Soils

According to the Web Soil Survey (NRCS 2021a), four soil units, or types, have been mapped within the Study Area (Figure 3. *Natural Resources Conservation Service Soil Types*):

- AxD – Auburn very rocky silt loam, 2 to 30 percent slopes,
- BhC – Boomer gravelly loam, 3 to 15 percent slopes,



Map Features

Project Area - 22.6 Ac.

Vegetation Community

California Black Oak Woodland - 2.94 ac.

Mixed Conifer Forest and Woodland - 5.77 ac.

Developed - 13.89 ac.

Sources: NAIP 2020

ECORP: N:\2018\2018-116.016 RESD CAL FIRE Growlersburg\MAPS\Vegetation_and_LandCover\Growlersburg_Vegetation_20210406.mxd (KIT)-kturnquist 4/6/2021

Map Date: 4/6/2021

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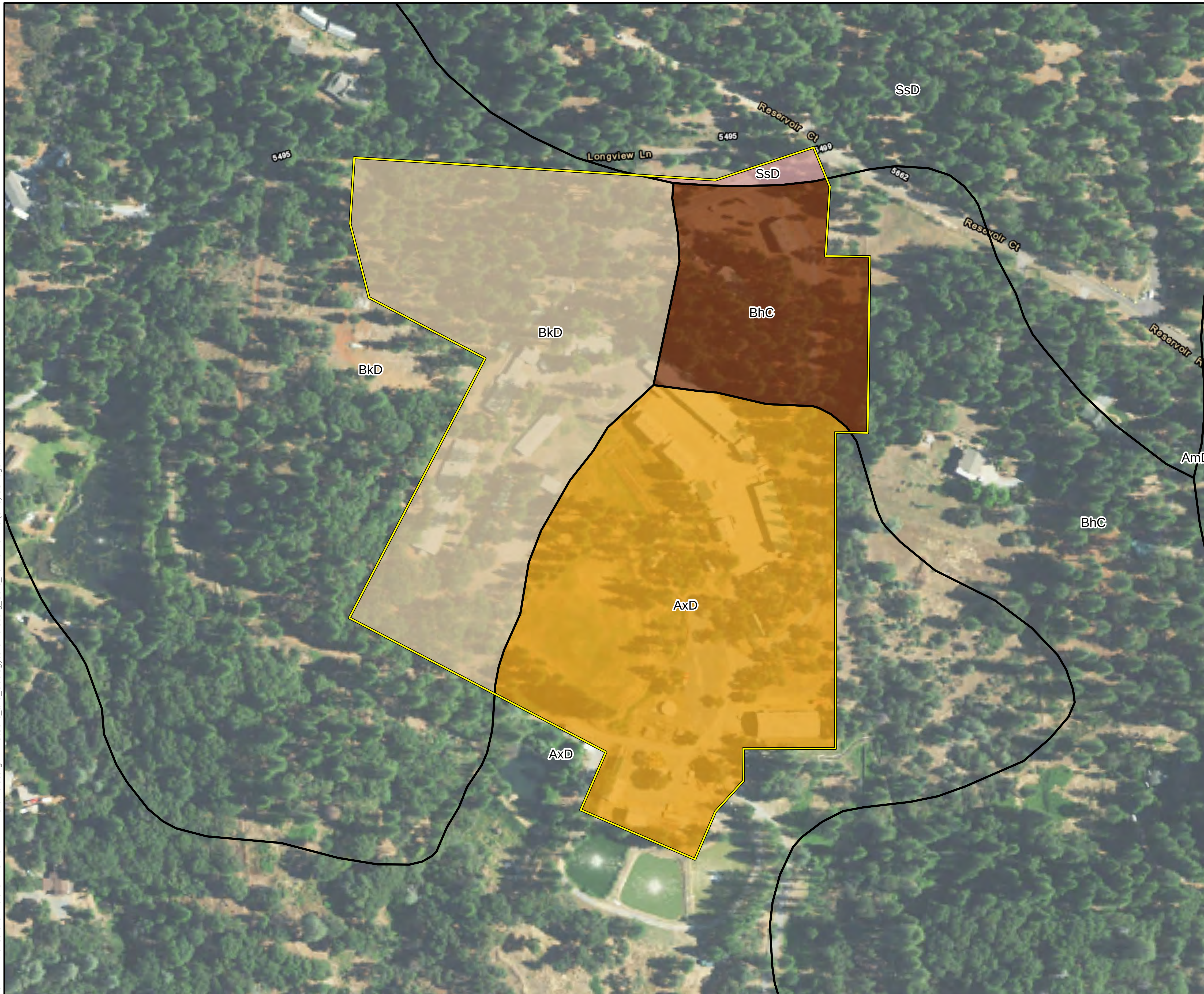
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 150

Figure 2. Vegetation Communities

2018-116.016 RESD CAL FIRE Growlersburg



Map Features

Project Area - 22.6 Ac.

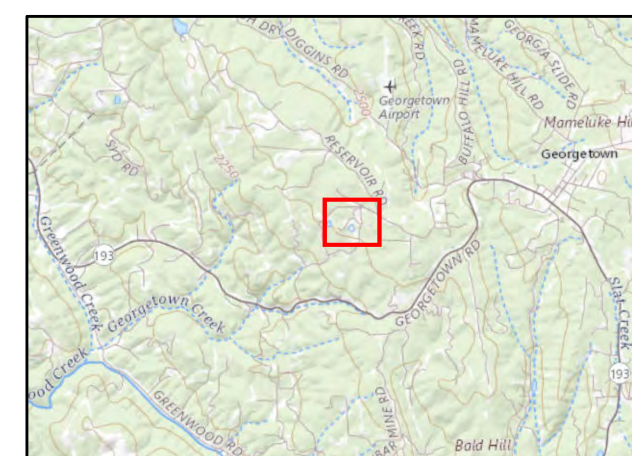
NRCS Soil Types within Project Area

Series Code - Series Name

- AxD - Auburn very rocky silt loam, 2 to 30 percent slopes
- BhC - Boomer gravelly loam, 3 to 15 percent slopes
- BkD - Boomer very rocky loam, 3 to 30 percent slopes
- SsD - Sites clay loam, 15 to 30 percent slopes

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for El Dorado County, CA

Sources: ESRI, USGS, NRCS, WCE, Lionakis, NAIP (2020)



ECORP: N:\2018\2018-116.016 RESD CAL FIRE Growlersburg\MAPS\Soils_and_Geology\Growlersburg_Soils_20210225.mxd (JDS) JSwager 1/26/2021

Map Date: 1/26/2021

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ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 200

Figure 3. Natural Resources Conservation Service Soil Types

2018-116.016 RESD CAL FIRE Growlersburg

- BkD – Boomer very rocky loam, 3 to 30 percent slopes, and
- SsD – Sites clay loam, 15 to 30 percent slopes

None of these soil units are derived from serpentinite or other ultramafic parent materials. The Auburn soil series consists of well-drained soils that are underlain by hard metamorphic rocks at a depth of 12 to 26 inches; the Boomer soil series consists of well-drained soils that are underlain by basic schists at a depth of 24 to 52 inches; and the Sites soil series consists of well-drained soils that are underlain by vertically tilted metasedimentary and metabasic rocks at a depth of 40 inches to more than 60 inches (Soil Conservation Service 1974). None of these soil units are hydric or contain hydric components or inclusions (NRCS 2021b).

4.5 Aquatic Resources

An aquatic resources delineation to identify potential Waters of the U.S./State was conducted onsite concurrent with the BRA site visit.

A short reach of the Georgetown Divide Ditch is located in the southern portion of the Study Area (Figure 4. *Aquatic Resources Delineation*). This ditch provides domestic treated water, irrigation water, stock water, and incidental power to Georgetown Divide Public Utility District customers. It is not expected to be considered a water of the U.S. or State. No other aquatic resources were found onsite.

4.6 Evaluation of Potentially Occurring Special-Status Species

Table 1 lists all the special-status plant and wildlife species (as defined in Section 3.3) identified in the literature review as potentially occurring within the Study Area. Included in this table is the listing status for each species, a brief habitat description, and a determination on the potential to occur within the Study Area. Following the table is a brief description and discussion of each special-status species that is known to occur in the Study Area (from the literature review) or is considered to potentially occur within the Study Area.

Map Features

- Project Area - 22.6 Ac.
- Reference Coordinates
- Culvert

Sample Points

- Upland Point
- Waters Point

Aquatic Resources - 0.014 ac. [1] *

- Ditch - 0.014 ac.

Photo Source: NAIP 2020
Boundary Source: Warren Consulting Engineers, Inc.
Delineator(s): Keith Kwan
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

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

Map Date: 4/5/2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Scale in Feet
0 150

Figure 4. Aquatic Resources Delineation

2018-116.016 RESD CAL FIRE Growlersburg

ECORP: N:\2018\2018-116.016 RESD CAL FIRE Growlersburg\MAPS\Jurisdictional_Delineation\Growlersburg_ARD_v1_20210402.mxd (KIT)-ktumquist 4/5/2021

Table 1. Potentially Occurring Special-Status Species						
	Status					
Common Name (Scientific Name)	ESA	CESA/ NPPA	Other	Habitat Description	Survey Period	Potential To Occur Onsite
Plants						
Congdon's onion *(Allium sanbornii* var. *congdonii)*	–	–	4.3	Chaparral and cismontane woodland with serpentinite or volcanic soils (984'–4,577').	April–July	Absent. No suitable habitat within Study Area.
Sanborn's onion *(Allium sanbornii* var. *sanbornii)*	–	–	4.2	Chaparral, cismontane woodland, and lower montane coniferous forests, usually with gravelly, serpentinite soils (853'–4,954').	May–September	Potential to occur. The oak woodland and coniferous forest in the Study Area may provide suitable habitat.
True's manzanita *(Arctostaphylos mewukka* ssp. *truei)*	–	–	4.2	Chaparral and lower montane coniferous forest, sometimes on roadsides (1,394'–4,560').	February–July	Potential to occur. The coniferous forest and roadsides in the Study Area may provide suitable habitat.
Nissenan manzanita *(Arctostaphylos nissenana)*	–	–	1B.2	Rocky soils within closed-cone coniferous forest or chaparral. (1,476'–3,609').	February–March	Absent. No suitable habitat in Study Area.
Stebbins' morning-glory *(Calystegia stebbinsii)*	FE	CE	1B.1	Gabbroic or serpentine soils in chaparral and cismontane woodland (607'–3,576').	April–July	Absent. No suitable habitat in Study Area.
Van Zuuk's morning-glory *(Calystegia vanzuukiae)*	–	–	1B.3	Gabbroic or serpentinite soils within chaparral and cismontane woodlands (1,640'–3,871').	May–August	Absent. No suitable habitat in Study Area.
Sierra arching sedge *(Carex cyrtostachya)*	–	–	1B.2	Meadows and seeps, marshes and swamps, in mesic areas of lower montane coniferous forest, and margins of riparian forests (2,001'–4,462').	May–August	Absent. No suitable habitat in Study Area.
Fresno ceanothus *(Ceanothus fresnensis)*	–	–	4.3	Cismontane woodland openings and lower montane coniferous forests (2,953'–6,900').	May–July	Potential to occur. The oak woodland and coniferous forest in the Study Area may provide suitable habitat.
Red Hills soaproot *(Chlorogalum grandiflorum)*	–	–	1B.2	Serpentinite or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest, occasionally on non–ultramafic soils (804'–5,545').	May–June	Potential to occur. The disturbed areas, oak woodland and coniferous forest in the Study Area may provide suitable habitat.

Table 1. Potentially Occurring Special-Status Species						
	Status					
Common Name (Scientific Name)	ESA	CESA/ NPPA	Other	Habitat Description	Survey Period	Potential To Occur Onsite
Brandegee's clarkia *(Clarkia biloba* ssp. *brandegeeae)*	–	–	4.2	Chaparral, cismontane woodlands, and lower montane coniferous forest often along roadcuts (246'–3,002').	May–July	Low potential to occur. The oak woodland and coniferous forest in the Study Area may provide suitable habitat, but the species is not known to occur in the vicinity of the Study Area.
Sierra clarkia (*Clarkia virgata*)	–	–	4.3	Cismontane woodland and lower montane coniferous forest (1,312'–5,299').	May–August	Low potential to occur. The oak woodland and coniferous forest in the Study Area may provide suitable habitat, but the species is not known to occur in the vicinity of the Study Area.
Streambank spring beauty *(Claytonia parviflora* ssp. *grandiflora)*	–	–	4.2	Occurs in rocky cismontane woodland (820'–3,937').	February–May	Potential to occur. The oak woodland and coniferous forest in the Study Area may provide suitable habitat.
Serpentine bird's-beak *(Cordylanthus tenuis* ssp. *brunneus)*	–	–	4.3	Usually serpentinite soils of closed–cone coniferous forest, chaparral, and cismontane woodland (1,001'–3,002').	July–August	Absent. The study area is outside the known geographical range of this species.
Ewan's larkspur *(Delphinium hansenii* ssp. *ewanianum)*	–	–	4.2	Rocky soils in cismontane woodland, and valley and foothill grassland (196'–1,969').	March–May	Absent. Study Area is outside of the known elevational range for this species.
Tripod buckwheat *(Eriogonum tripodum)*	–	–	4.2	Often serpentinite soils of chaparral and cismontane woodland (656'–5,249').	May–July	Low potential to occur. The oak woodland and coniferous forest in the Study Area may provide marginally suitable habitat.
Jepson's coyote thistle (*Eryngium jepsonii*)	–	–	1B.2	Clay soils of valley and foothill grassland, and vernal pools (10'–984').	April–August	Absent. No suitable habitat.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status: ESA	Status: CESA/ NPPA	Status: Other	Habitat Description	Survey Period	Potential To Occur Onsite
Butte County fritillary *(Fritillaria eastwoodiae)*	–	–	3.2	Chaparral, cismontane woodland, and openings in lower montane coniferous forest and occasionally is found on serpentinite soils (164'–4,921').	March–June	Potential to occur. The oak woodland and coniferous forest in the Study Area may provide suitable habitat.
Parry's horkelia *(Horkelia parryi)*	–	–	1B.2	Ione and other soil formations in chaparral and cismontane woodlands (262'–3,510').	April–September	Potential to occur. The disturbed areas, oak woodland, and coniferous forest in the Study Area may provide suitable habitat.
Hutchison's lewisia *(Lewisia kelloggii* ssp. *hutchisonii)*	–	–	3.2	Openings, ridgetops, often slate, sometimes rhyolite tuff in upper montane coniferous forest (2,510'–7,759').	May–August	Absent. No suitable habitat within Study Area.
Kellogg's lewisia *(Lewisia kelloggii* ssp. *kelloggii)*	–	–	3.2	Openings, ridgetops, often slate, sometimes rhyolite tuff in upper montane coniferous forest (4,806'–7,756').	May–August	Absent. No suitable habitat within Study Area.
Saw-toothed lewisia *(Lewisia serrata)*	–	–	1B.1	Rocky slopes in mesic areas of broad–leafed upland forest, lower montane coniferous forest, and riparian forest (2,526'–4,708').	May–June	Absent. No suitable habitat within Study Area.
Humboldt lily *(Lilium humboldtii* ssp. *humboldtii)*	–	–	4.2	Occurs in openings within chaparral, cismontane woodland, and lower montane coniferous forest (295'–4,199').	May–August	Potential to occur. The oak woodland and coniferous forest in the Study Area may provide suitable habitat.
Layne's ragwort (*Packera layneae*)	FT	CR	1B.2	Rocky serpentinite or gabbroic soil in chaparral and cismontane woodland communities (656'–3,560').	April–August	Absent. No suitable habitat within Study Area.
Stebbins' phacelia *(Phacelia stebbinsii)*	–	–	1B.2	Cismontane woodland, lower montane coniferous forest, and meadows and seeps (2,001'–6,595').	May–July	Potential to occur. The oak woodland and coniferous forest in the Study Area may provide suitable habitat.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status ESA	Status CESA/ NPPA	Status Other	Habitat Description	Survey Period	Potential To Occur Onsite
Sierra blue grass *(Poa sierrae)*	–	–	1B.3	Lower montane coniferous forest openings (1,198'–4,921').	April–July	Potential to occur. The coniferous forest in the Study Area may provide suitable habitat.
Brownish beaked-rush *(Rhynchospora capitellata)*	–	–	2B.2	Mesic areas in lower montane coniferous forest, upper montane coniferous forests, meadows, seeps, marshes, and swamps (148'–6,562').	July–August	Absent. No suitable habitat within Study Area.
Oval-leaved viburnum *(Viburnum ellipticum)*	–	–	2B.3	Chaparral, cismontane woodland, and lower montane coniferous forest communities (705'–4,593').	May–June	Potential to occur. The oak woodland and coniferous forest in the Study Area may provide suitable habitat.
El Dorado County mule ears *(Wyethia reticulata)*	–	–	1B.2	Clay or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest communities (607'–2,067').	April–August	Absent. Study Area is outside of the known geographical range for this species.
Fish						
Delta smelt (*Hypomesus transpacificus*)	FT	CE	-	Sacramento-San Joaquin delta.	N/A	Absent. No suitable habitat within Study Area, and the Study Area is outside of the known range of this species.
Amphibians						
California red-legged frog (*Rana draytonii*)	FT	-	SSC	Lowlands or foothills at waters with dense shrubby or emergent riparian vegetation. Adults must have aestivation habitat to endure summer dry down.	May 1-November 1	Absent. No suitable habitat within Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Foothill yellow-legged frog Northeast/Northern Sierra Clade (*Rana boylii*)	-	CT	SSC	Foothill yellow-legged frogs can be active all year in warmer locations but may become inactive or hibernate in colder climates. At lower elevations, foothill yellow-legged frogs likely spend most of the year in or near streams. Adult frogs, primarily males, will gather along main-stem rivers during spring to breed.	May - October	Absent. No suitable habitat within Study Area.
Reptiles						
Northwestern pond turtle (*Actinemys marmorata*)	-	-	SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches.	April-September	Absent. No suitable habitat within Study Area.
Blainville's ("Coast") horned lizard (*Phrynosoma blainvillii*)	-	-	SSC	Formerly a wide-spread horned lizard found in a wide variety of habitats, often in lower elevation areas with sandy washes and scattered low bushes. Also occurs in Sierra Nevada foothills. Requires open areas for basking, but with bushes or grass clumps for cover, patches of loamy soil or sand for burrowing and an abundance of ants (Stebbins and McGinnis 2012). In the northern Sacramento area, this species appears restricted to the foothills between 1000 to 3000 feet from Cameron Park (El Dorado County) north and west to Grass Valley and Nevada City.	Apr-Oct	Absent. No suitable habitat within Study Area.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status: ESA	Status: CESA/ NPPA	Status: Other	Habitat Description	Survey Period	Potential To Occur Onsite
Birds						
Sharp-shinned hawk *(Accipiter striatus)*	-	-	CDFW WL	Nests in trees in most forest types with at least some conifers. In California, nesting occurs in Sierra Nevada and Cascade Ranges (foothills to tree line) and northwestern coastal range.	April-August	Potential. Trees within the Study Area provide potential nesting habitat.
Cooper's hawk *(Accipiter cooperii)*	-	-	CDFW WL	Nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes	March-July	Potential. Trees within the Study Area provide potential nesting habitat.
California spotted owl *(Strix occidentalis occidentalis)*	-	-	BCC, SSC	Found in the southern Cascade Range and northern Sierra Nevada from Pit River, Shasta County south to Tehachapi Mountains, Kern County, in the coastal ranges from Monterey County to Santa Barbara County, in Transverse and Peninsular Ranges south to northern Baja California. At lower elevations, they breed in hardwood forests and coniferous forests at higher elevations. They use forests with greater complexity and structure.	March-September	Absent. No suitable habitat within Study Area.
Nuttall's woodpecker (*Dryobates nuttallii*)	-	-	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands.	April-July	Present. Observed during reconnaissance site visit. Trees within the Study Area provide potential nesting habitat.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status ESA	Status CESA/ NPPA	Status Other	Habitat Description	Survey Period	Potential To Occur Onsite
Olive-sided flycatcher *(Contopus cooperi)*	-	-	SSC, BCC	Nests in montane and northern coniferous forests, in forest openings, forest edges, semi-open forest stands. In California, nests in coastal forests, Cascade and Sierra Nevada region. Winters in Central to South America.	May-August	Potential. Trees within the Study Area provide potential nesting habitat.
Willow flycatcher *(Empidonax traillii)*	-	CE	BCC	In California, breeding range includes Cascade-Sierra Nevada region (*brewsteri* subspecies); *extimus* subspecies found in southern California; nesting habitat includes moist, shrubby riparian willow thickets, often with standing or running water. Winters in Central and South America.	May-September	Absent. No suitable habitat within Study Area.
Oak titmouse (*Baeolophus inornatus*)			BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree)	March-July	Present. Observed during reconnaissance site visit. Trees within the Study Area provide potential nesting habitat.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA/ NPPA	Other			
Tricolored blackbird (*Agelaius tricolor*)	-	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields.	March-August	Absent. No suitable habitat within Study Area.
Mammals						
Pallid bat *(Antrozous pallidus)*	-	-	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings (Western Bat Working Group [WBWG] 2021).	April-September	Potential. Trees and some structures within the Study Area represent potential roosting habitat.

Table 1. Potentially Occurring Special-Status Species

Common Name (Scientific Name)	Status: ESA	Status: CESA/ NPPA	Status: Other	Habitat Description	Survey Period	Potential To Occur Onsite
Townsend's big-eared bat *(Corynorhinus townsendii)*	-	-	SSC	Caves, mines, buildings, rock crevices, trees.	April-September	Potential. Trees and some structures within the Study Area represent potential roosting habitat.

Status Codes:

FESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	FESA listed, Endangered.
FT	FESA listed, Threatened.
BCC	USFWS Bird of Conservation Concern (USFWS 2002).
CR	CESA- or NPPA-listed, Rare.
CT	CESA- or NPPA-listed, Threatened.
CE	CESA or NPPA listed, Endangered.
CDFW WL	CDFW Watch List
SSC	CDFW Species of Special Concern (CDFW, updated July 2017).
1B	CRPR/Rare or Endangered in California and elsewhere.
2B	Plants rare, threatened, or endangered in California but more common elsewhere.
3	CRPR/Plants About Which More Information is Needed – A Review List.
4	CRPR/Plants of Limited Distribution – A Watch List.
0.1	Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

4.6.1 Plants

Twenty-eight special-status plants have been identified as potentially occurring for the Study Area based on the initial literature review and database queries (Table 1). However, it was determined that 14 of the plant species were absent due to a lack of suitable habitat onsite or the plant is not known to occur at the elevation of the Study Area. No further discussion of these species is included in the report. A brief description of the remaining 14 special-status plants that have the potential to occur within the Study Area is presented below.

4.6.1.1 Sanborn’s Onion

Sanborn’s onion (*Allium sanbornii* var. *sanbornii*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 4.2 species. This species is a bulbiferous herbaceous perennial that usually occurs on serpentinite or gravelly soils in chaparral, cismontane woodlands, and lower montane coniferous forest (CNPS 2021). Sanborn’s onion blooms from May through September and is known to occur at elevations ranging from 853 to 4,954 feet above MSL (CNPS 2021). The current range of this species in California includes Butte, Calaveras, El Dorado, Nevada, Placer, Plumas, Shasta, Tehama, Tuolumne, and Yuba counties (CNPS 2021).

There are no documented CNDDB occurrences of Sanborn's onion within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.1.2 True's Manzanita

True's manzanita (*Arctostaphylos mewukka* ssp. *truei*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is an evergreen, perennial shrub that occurs sometimes on roadsides of chaparral and lower montane coniferous forest (CNPS 2021). True's manzanita blooms from February through July and is known to occur at elevations ranging from 1,394 to 4,560 feet above MSL (CNPS 2021). True's manzanita is endemic to California; the current range of this species includes Butte, El Dorado, Nevada, Placer, Plumas, and Yuba counties (CNPS 2021).

There are no documented CNDDB occurrences of True's manzanita within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.1.3 Fresno Ceanothus

Fresno ceanothus (*Ceanothus fresnensis*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.3 species. This species is an evergreen perennial shrub that occurs in cismontane woodland openings or lower montane coniferous forest (CNPS 2021). Fresno ceanothus blooms from May through July and is known to occur at elevations ranging from 2,953 to 6,900 feet above MSL (CNPS 2021). Fresno ceanothus is endemic to California; the current range of this species includes Calaveras, El Dorado, Fresno, Madera, Mariposa, Placer, Tulare, and Tuolumne counties (CNPS 2021).

There are no documented CNDDB occurrences of Fresno ceanothus within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.1.4 Red Hills Soaproot

Red Hills soaproot (*Chlorogalum grandiflorum*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 plant. This species is a bulbiferous perennial herb that typically occurs on serpentinite, gabbroic, and other soils in chaparral, cismontane woodland, and lower montane coniferous forest communities (CNPS 2021). Red Hills soaproot blooms from May through June and is known to occur at elevations ranging from 804 to 5,545 feet above MSL (CNPS 2021). Red Hill soaproot is endemic to California; the current range of this species includes Amador, Butte, Calaveras, El Dorado, Placer, and Tuolumne counties (CNPS 2021).

There are eight documented CNDDB occurrences of Red Hills soaproot within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.1.5 Brandegee's Clarkia

Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeeae*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 plant. This species is an herbaceous annual that occurs in chaparral, cismontane woodlands, and lower montane coniferous forest often along roadcuts (CNPS 2021). Brandegee's clarkia blooms from May through July and is known to occur at elevations ranging from 246 to 3,002 feet above MSL (CNPS 2021). Brandegee's clarkia is endemic to California, and the current range of this species includes Butte, El Dorado, Nevada, Placer, Sacramento, Sierra, and Yuba counties (CNPS 2021).

There is one documented CNDDB occurrences of Brandegee's clarkia within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides marginally suitable habitat for this species.

4.6.1.6 Sierra Clarkia

Sierra clarkia (*Clarkia virgata*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.3 plant. This species is an herbaceous annual that occurs in cismontane woodlands and lower montane coniferous forest (CNPS 2021). Sierra clarkia blooms from May through August and is known to occur at elevations ranging from 1,312 to 5,299 feet above MSL. Sierra clarkia is endemic to California; the current range of this species includes Amador, Calaveras, El Dorado, Mariposa, Plumas, and Tuolumne counties (CNPS 2021).

There are no documented CNDDB occurrences of Sierra clarkia within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides marginally suitable habitat for this species.

4.6.1.7 Streambank Spring Beauty

Streambank spring beauty (*Claytonia parviflora* ssp. *grandiflora*) is not listed pursuant to either the federal or California ESAs but is designated as a CRPR 4.2 species. This species is an herbaceous annual that occurs in rocky soils within cismontane woodland (CNPS 2021). Streambank spring beauty blooms from February through May and is known to occur at elevations ranging from 820 to 3,937 feet above MSL (CNPS 2020). Streambank spring beauty is endemic to California; the current range of this species includes Amador, Butte, Calaveras, El Dorado, Fresno, Kern, Placer, Tulare, and Tuolumne counties (CNPS 2021).

There are no documented CNDDB occurrences of streambank spring beauty within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides marginally suitable habitat for this species.

4.6.1.8 Tripod Buckwheat

Tripod buckwheat (*Eriogonum tripodum*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is a perennial deciduous shrub that occurs on cismontane woodland or chaparral, often on serpentinite soils (CNPS 2021). Tripod buckwheat blooms from May through July and is known to occur at elevations ranging from 656 to 5,249 feet above MSL (CNPS 2021). Tripod buckwheat is endemic to California; the current range of this species includes

Amador, Colusa, El Dorado, Glenn, Lake, Mariposa, Napa, Placer, Tehama, and Tuolumne counties (CNPS 2021).

There are no documented CNDDB occurrences of tripod buckwheat within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides marginally suitable habitat for this species.

4.6.1.9 Butte County Fritillary

Butte County fritillary (*Fritillaria eastwoodiae*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 3.2 species. This species is an herbaceous bulbiferous perennial that occurs in chaparral, cismontane woodland, and lower montane coniferous forest, and is occasionally found on serpentinite soils (CNPS 2021). Butte County fritillary blooms from March through June and is known to occur at elevations ranging from 164 to 4,921 feet above MSL (CNPS 2021). The current range of this species in California includes Butte, El Dorado, Nevada, Placer, Plumas, Shasta, Tehama, and Yuba counties (CNPS 2021).

There is one documented CNDDB occurrence of Butte County fritillary within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.1.10 Parry's Horkelia

Parry's horkelia (*Horkelia parryi*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is a small, herbaceous perennial that occurs in chaparral and cismontane woodlands and is associated with very acidic, nutrient-poor, coarse soils typical of the Ione Formation (CNPS 2021). Parry's horkelia blooms from April through September and is known to occur at elevations ranging from 262 to 3,510 feet above MSL (CNPS 2021). Parry's horkelia is endemic to California; the current range for this species includes Amador, Calaveras, El Dorado, Mariposa, and Tuolumne counties (CNPS 2021).

There are no documented CNDDB occurrences of Parry's horkelia within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.1.11 Humboldt Lily

Humboldt lily (*Lilium humboldtii* ssp. *humboldtii*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 4.2 species. This species is a perennial bulbiferous herb that occurs in openings within chaparral, cismontane woodland, and lower montane coniferous forest (CNPS 2021). Humboldt lily blooms from May through August and is known to occur at elevations ranging from 295 to 4,199 feet above MSL (CNPS 2021). Humboldt lily is endemic to California; the current range of this species includes Amador, Butte, Calaveras, El Dorado, Fresno, Mariposa, Nevada, Placer, Tehama, Tuolumne, and Yuba counties (CNPS 2021).

There are no documented CNDDB occurrences of Humboldt lily within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.1.12 Stebbins' Phacelia

Stebbins' phacelia (*Phacelia stebbinsii*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.2 species. This species is an annual herb that occurs in cismontane woodland, lower montane coniferous forest, and meadows and seeps (CNPS 2021). Stebbins' phacelia blooms from May through July and is known to occur at elevations ranging from 2,001 to 6,594 feet above MSL (CNPS 2021). Stebbins' phacelia is endemic to California; the current range of this species includes El Dorado, Nevada, and Placer counties (CNPS 2021).

There are no documented CNDDB occurrences of Stebbins' phacelia within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.1.13 Sierra Blue Grass

Sierra blue grass (*Poa sierrae*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 1B.3 species. This species is a rhizomatous herbaceous perennial that occurs in lower montane coniferous forest openings (CNPS 2021). Sierra blue grass blooms from April through July and is known to occur at elevations ranging from 1,198 to 4,921 feet above MSL (CNPS 2021). Sierra blue grass is endemic to California; its current range includes Butte, El Dorado, Madera, Nevada, Placer, Plumas, and Shasta counties (CNPS 2021).

There are no documented CNDDB occurrences of Sierra blue grass within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.1.14 Oval-Leaved Viburnum

Oval-leaved viburnum (*Viburnum ellipticum*) is not listed pursuant to either the federal or California ESAs, but is designated as a CRPR 2B.3 species. This species is a perennial deciduous shrub that occurs in chaparral, cismontane woodland, and lower montane coniferous forest communities. Oval-leaved viburnum blooms from May through June and is known to occur at elevations ranging from 705 to 4,593 feet above MSL (CNPS 2021). The current range of this species in California includes Alameda, Contra Costa, El Dorado, Fresno, Glenn, Humboldt, Lake, Mendocino, Mariposa, Napa, Placer, Shasta, Solano, Sonoma, and Tehama counties (CNPS 2021).

There are no documented CNDDB occurrences of oval-leaved viburnum within five miles of the Study Area (CDFW 2021). The mixed conifer forest and California black oak woodland within the Study Area provides suitable habitat for this species.

4.6.2 Invertebrates

No invertebrates were identified as potentially occurring for the Study Area based on the initial literature review and database queries, and it was determined that there is no suitable habitat onsite for any special-status invertebrates. As such, based on the current Project limits, there are no anticipated impacts to or recommended actions pertaining to special-status invertebrates.

4.6.3 Fish

One special-status fish was identified as having potential to occur in the Study Area based on the literature review, the Delta smelt (*Hypomesus transpacificus*) (Table 1). However, upon further analysis and after the site visit, this special-status species was considered absent because there is no suitable habitat in the Study Area. As such, based on the current Project limits, there are no anticipated impacts to or recommended actions pertaining to special-status fish.

4.6.4 Amphibians

Two special-status amphibians were identified as having potential to occur in the Study Area based on the literature review (Table 1). However, upon further analysis and after the site visit, all of these special-status species were considered absent from the site due to the lack of suitable aquatic habitat. As such, based on the current Project limits, there are no anticipated impacts to or recommended actions pertaining to special-status amphibians.

4.6.5 Reptiles

Two special-status reptiles were identified as having the potential to occur in the Study Area based on the literature review (Table 1). However, upon further analysis and after the site visit, both of these special-status species were considered absent from the site due to the lack of suitable habitat. As such, based on the current Project limits, there are no anticipated impacts to or recommended actions pertaining to special-status reptiles.

4.6.6 Birds

Eight special-status bird species were identified as having the potential to occur within the Study Area based on the literature review (Table 1). However, upon further analysis and after the site visit, three of these species were considered absent from the site due to the lack of suitable habitat and/or the Study Area is outside the known breeding range of the species. No further discussion of these species is provided in this analysis. A brief description of the remaining five special-status birds that have the potential to occur within the Study Area is presented below.

4.6.6.1 Sharp-shinned Hawk

The sharp-shinned hawk (*Accipiter striatus*) is not listed pursuant to either the California or federal ESAs. However, it is a CDFW "watch list" species and currently tracked in the CNDDB. Their breeding range in California is poorly known but breeding or summering sharp-shinned hawks have occurred throughout the state (Small 1994) (Bildstein et al. 2020). They nest in most forest types, particularly dense stands with at least some conifers (Bildstein et al. 2020). Breeding occurs during April through August.

There are no CNDDB occurrences of sharp-shinned hawk reported within five miles of the Study Area (CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Sharp-shinned hawk have potential to nest onsite.

4.6.6.2 Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is not listed pursuant to either the California or federal ESAs. However, it is a CDFW "watch list" species and is currently tracked in the CNDDB. Typical nesting and foraging habitats include riparian woodland, dense oak woodland, and other woodlands near water. Cooper's hawk nest throughout California from Siskiyou County to San Diego County and includes the Central Valley (Rosenfield et al. 2020). Breeding occurs during March through July, with a peak from May through July.

There are no CNDDB occurrences of Cooper's hawk reported within five miles of the Study Area (CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Cooper's hawk has potential to nest onsite.

4.6.6.3 Nuttall's Woodpecker

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

There are no CNDDB occurrences of Nuttall's woodpecker reported within five miles of the Study Area (CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Olive-sided flycatcher has potential to nest onsite.

4.6.6.4 Olive-sided Flycatcher

The olive-sided flycatcher (*Contopus cooperi*) is not listed pursuant to either the California or federal ESAs but is a CDFW SSC and a USFWS BCC. In the western U.S., olive-sided flycatchers breed from Washington south throughout California, except the Central Valley, eastern deserts, and mountains of southern California (Small 1994). This species breeds in late-successional coniferous forests including Ponderosa pine woodlands, black oak woodlands, mixed coniferous forests, and Jeffrey pine forests, usually at mid to high elevations (Widdowson 2008). They use edges and clearings surrounding dense forests, foraging primarily on bees and wasps. Nesting occurs during May through August.

There are no CNDDB occurrences of olive-sided flycatcher reported within five miles of the Study Area (CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Olive-sided flycatcher has potential to nest onsite.

4.6.6.5 Oak Titmouse

Oak titmouse (*Baeolophus inornatus*) is not listed and protected under either California or federal ESAs but is considered a USFWS BCC. Oak titmouse breeding range includes southwestern Oregon south through California's Coast, Transverse, and Peninsular ranges, western foothills of the Sierra Nevada, into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley (Cicero et al. 2020). They are found in dry oak or oak-pine woodlands but may also use scrub oaks or other brush near woodlands (Cicero et al. 2020). Nesting occurs during March through July.

There are no CNDDB occurrences of oak titmouse reported within five miles of the Study Area (CDFW 2021). The trees in the mixed conifer forest and California black oak woodland within and adjacent to the Study Area could provide nesting and foraging habitat for this species. Oak titmouse has potential to nest onsite.

4.6.6.6 MBTA Birds

The Study Area supports potential nesting habitat for a variety of common birds protected under the MBTA and California Fish and Game Code § 3503, among others.

4.6.7 Mammals

Two special-status mammal species were identified as having the potential to occur within the Study Area based on the literature review (Table 1). After the site visit, it was determined that both have potential to occur onsite. A brief description of these two special-status bat species is presented below.

4.6.7.1 Pallid Bat

The pallid bat (*Antrozous pallidus*) is not listed pursuant to either the California or federal ESAs; however, this species is considered a SSC by CDFW. The pallid bat is a large, light-colored bat with long, prominent ears and pink, brown, or grey wing and tail membranes. This species ranges throughout North America from the interior of British Columbia, south to Mexico, and east to Texas. The pallid bat inhabits low elevation (below 6,000 feet) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forest (above 7,000 feet). This species roosts alone or in groups in the crevices of rocky outcrops and cliffs, caves, mines, trees, and in various human structures such as bridges and barns. Pallid bats are feeding generalists that glean a variety of arthropod prey from surfaces as well as capturing insects on the wing. Foraging occurs over grasslands, oak savannahs, ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. Although this species utilizes echolocation to locate prey, often they use only passive acoustic cues. This species is not thought to migrate long distances between summer and winter sites (WBWG 2021).

There are no CNDDB occurrences of pallid bat reported within five miles of the Study Area (CDFW 2021). The trees in the ponderosa pine forest and California black oak and some structures within and surrounding the Survey Area could support suitable roosting habitat for this species.

4.6.7.2 Townsend's Big-Eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is not listed pursuant to either the California or federal ESAs; however, this species is considered a SSC by CDFW. Townsend's big-eared bat is a fairly large bat with prominent bilateral noes lumps and large "rabbit-like" ears. This species occurs throughout the west and ranges from the southern portion of British Columbia south along the Pacific coast to central Mexico and east into the Great Plains. This species has been reported from a wide variety of habitat types and elevations from sea level to 10,827 feet. Habitats used include coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Its distribution is strongly associated with the availability of caves and cave-like roosting habitat including abandoned mines, buildings, bridges, rock crevices, and hollow trees. This species is readily detectable when roosting due to their habit of roosting pendant-like on open surfaces. Townsend's big-eared bat is a moth specialist with over 90 percent of its diet composed of Lepidopterans. Foraging habitat is generally edge habitats along streams adjacent to and within a variety of wooded habitats. This species often travels long distances when foraging and large home ranges have been documented in California (WBWG 2021).

There are no CNDDB occurrences of Townsend's big-eared bat reported within five miles of the Study Area (CDFW 2021). The trees in the ponderosa pine forest and California black oak and some structures within and surrounding the Survey Area could support suitable roosting habitat for this species.

4.7 Sensitive Natural Communities

No sensitive natural communities were identified as having the potential to occur within the vicinity of the Study Area based on the literature review (CDFW 2021). During the field assessment, no sensitive natural communities were found onsite. No further discussion of sensitive natural communities is provided within this assessment.

5.0 IMPACT ANALYSIS

This section specifically addresses the questions raised by the CEQA - Appendix G Environmental Checklist Form, IV. Biological Resources. This impact analysis assumes the Project will implement measures that fulfill the intent of recommended measures described in Section 6.0.

5.1 Special Status Species

Would the Project result in effects, either directly or through habitat modifications, to species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

No special-status species are known to occur within the Study Area; however, special-status plant and animal surveys have not been conducted. The Study Area includes potential habitat for special-status species within the impact area. Potential effects to special-status species are summarized in the following sections by taxonomic group or species.

5.1.1 Special-Status Plants

There is no potential habitat for federal- or State-listed plant species in the Study Area, but there is potential or low potential for 14 non-listed special-status plant species to occur. Project development would permanently remove or alter a minimal amount of marginally suitable or suitable potential habitat for special-status plants, and in the unlikely chance that special-status plant populations occur onsite they may be directly or indirectly impacted by development.

Implementation of recommendations BIO2, PLANT1, and PLANT2 described in Section 6.0 would avoid, minimize, and/or compensate for potential effects to special-status plants. With implementation of these measures, the Project is not expected to significantly impact special-status plants.

5.1.2 Special-Status and Other Protected Birds

There is potential nesting habitat for five non-listed special-status bird species and a variety of other birds that are protected under the MBTA and the California Fish and Game Code. Project development would permanently remove or alter a minimal amount of nesting and foraging habitat in the development area, and Project construction would generate a temporary disturbance that would likely displace foraging birds from the Study Area during construction. Permanent removal or alteration of a minimal amount of habitat and displacement of foraging birds during construction is not expected to significantly impact special-status birds.

Implementation of recommendations BIO2 and BIRD1 described in Section 6.0 would avoid or minimize potential effects to special-status birds and other protected birds.

5.1.3 Special-Status Mammals

Two special-status bats have potential to occur in the Study Area. Removal of trees and structures may directly impact roosting habitat. Project development would permanently remove a minimal amount of potential roosting and foraging habitat in the development area, and Project construction would generate a temporary disturbance during the day that would likely displace day-roosting bats from the Study Area. Permanent removal of a minimal amount of potential roosting habitat and displacement of day-roosting bats during construction is not expected to significantly impact special-status bats.

Implementation of recommendations BIO2 and BAT1 described in Section 6.0 would avoid and/or minimize potential effects to special-status bats.

5.2 Riparian Habitat and Sensitive Natural Communities

Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?

The Study Area supports mixed conifer forest and California black oak woodland within the proposed Project footprint. Both of these vegetation communities are not considered a sensitive natural communities according to CDFW, and there is no riparian habitat onsite. Therefore, the Project will not impact riparian habitat or sensitive natural communities.

5.3 Aquatic Resources, Including Waters the U.S. and State

Would the Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Based on the aquatic resources delineation, the only aquatic resource present within the Study Area is the Georgetown Divide Ditch, which is managed by the Georgetown Divide Public Utilities District (GDPUD). This ditch is not likely to be jurisdictional based on current definitions of Waters of the U.S. and Waters of the State. Further, there are no proposed Project impacts to this ditch. There are no other aquatic resources onsite. Therefore, the Project is not expected to impact aquatic resources, including Waters of the U.S. and State.

5.4 Wildlife Movement/Corridors

Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The Study Area provides limited migratory opportunities for terrestrial wildlife because of existing developed CAL FIRE and CDCR operations onsite. Project construction is likely to temporarily disturb and displace some wildlife from the Study Area. Some wildlife such as birds or nocturnal species are likely to continue to use the habitats opportunistically for the duration of construction. Once construction is complete, wildlife movements are expected to resume but will likely be more limited through the developed areas of the Study Area. The Project is not expected to substantially interfere with wildlife movement.

There are no documented nursery sites and no nursey sites were observed within the Study Area during the site reconnaissance. Therefore, the Project is not expected to impact wildlife nursery sites.

5.5 Local Policies, Ordinances, and Other Plans

Does the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The California black oak woodland present within Study Area is regulated under the County's ORMP. Permanent removal of California black oak trees and/or California black oak woodland would occur as a result of Project construction.

Implementation of recommendations TREE1, TREE2, and TREE3 described in Section 6.0 would avoid and/or minimize potential effects to California black oak trees and California black oak woodland.

Does the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

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

6.0 RECOMMENDATIONS

This section summarizes recommended measures to avoid, minimize, or compensate for potential impacts to biological resources from the proposed Project.

6.1 General Recommendations

The following general measures are recommended to avoid impacts to offsite and onsite biological resources:

- **BIO1:** The Project should implement erosion control measures and best management practices to reduce the potential for sediment or pollutants at the Project site. Examples of appropriate measures are included below.
    - Erosion control measures should be placed at the outer edge of the impact limits prior to commencement of construction activities. Such identification and erosion control measures should be properly maintained until construction is completed and the soils have been stabilized.
    - Any fueling in the Study Area should use appropriate secondary containment techniques to prevent spills.
- **BIO2:** A qualified biologist should conduct a mandatory Worker Environmental Awareness Program for all contractors, work crews, and any onsite personnel to aid workers in recognizing special status species and sensitive biological resources that may occur on-site. The program shall include identification of the special status species and their habitats, a description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and Mitigation Measures required to reduce impacts to biological resources within the work area.

6.2 Waters of the U.S./State

The only aquatic resource present within the Study Area is the Georgetown Divide Ditch, which is managed by the GDPUD. It is unlikely that this ditch is jurisdictional under the current definitions of Waters of the U.S. and Waters of the State. There are no other aquatic resources onsite. There are no proposed impacts to any Waters of the U.S./State at this time, so no recommendations are provided.

6.3 Wildlife Movement/Corridors/Nursery Sites

No impacts to wildlife movement, corridors, or nursery sites are expected because a large portion of the Study Area is developed and subject to regular disturbances.

6.4 Special-Status Species

There is potentially suitable habitat within the Study Area for 25 special-status plants, five special-status birds, and two special-status mammal. A brief discussion of recommended avoidance and minimization measures is presented below for each group.

6.4.1 Special-Status Plants

There is potential or low potential for 14 special-status plants to occur within the Study Area. The following measures are recommended to minimize potential impacts to special-status plants:

- **PLANT1:** Perform floristic plant surveys according to USFWS, CDFW, and CNPS protocols prior to construction. Surveys should be conducted by a qualified biologist and timed according to the appropriate phenological stage for identifying target species. Known reference populations should be visited and/or local herbaria records should be reviewed, if available, prior to surveys to confirm the phenological stage of the target species. If no special-status plants are found within the Project site, no further measures pertaining to special-status plants are necessary.
- **PLANT2:** If special-status plants are identified within 25-feet of the Project impact area, implement the following measures:
  - If avoidance of special-status plants is feasible, establish and clearly demarcate avoidance zones for special-status plant occurrences prior to construction. Avoidance zones should include the extent of the special-status plants plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and should be maintained until the completion of construction. A qualified biologist/biological monitor should be present must occur within the avoidance buffer to ensure special-status plants are not impacted by the work.
  - If avoidance of special-status plants is not feasible, mitigate for significant impacts to special-status plants. Mitigation measures should be developed in consultation with CDFW. Mitigation measures may include permanent preservation of onsite or offsite habitat for special-status plants and/or translocation of plants or seeds from impacted areas to unaffected habitats.

6.4.2 Special-Status Raptors (Sharp-Shinned Hawk, Cooper's Hawk) other Protected Birds (Nuttall's Woodpecker, Olive-sided Flycatcher, and Oak Titmouse)

For project activities with potential to affect active nests of protected raptors, other special-status birds, and birds protected under the MBTA, the following measures are recommended to prevent potential impacts to active raptor nests.

- **BIRD1:** If construction is to occur during the nesting season (generally February 1 - August 31), conduct a pre-construction nesting bird survey of all suitable nesting habitat on the Project within 14 days of the commencement of construction. The survey shall be conducted within a 500-foot radius of Project work areas for raptors and within a 100-foot radius for other nesting birds. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established by a qualified biologist in coordination with CDFW until the breeding season has ended or until a qualified biologist has determined that the young have fledged and are no longer reliant upon the nest or parental care for survival. Pre-construction nesting surveys are not required for construction activity outside the nesting season.

6.4.3 Special-Status Bats

There is potential for two special-status bats to occur within the Study Area, and the majority of the Study Area is planned for impact. The following measure is recommended to minimize potential impacts to special-status bats.

- **BAT1:** Within 14 days prior to Project activities that may impact bat roosting habitat (e.g., removal of manmade structures or trees), a qualified biologist will survey for all suitable roosting habitat within the Project impact limits. If suitable roosting habitat is not identified, no further measures are necessary. If suitable roosting habitat is identified, a qualified biologist will conduct an evening bat emergence survey that may include acoustic monitoring to determine whether or not bats are present. If roosting bats are determined to be present within the Project site, consultation with CDFW prior to initiation of construction activities and/or preparation of a Bat Management Plan outlining avoidance and minimization measures specific to the roost(s) potentially affected may be required.

6.4.4 Oak Trees and Oak Woodlands

There is potential for permanent direct impacts to oak trees and oak woodlands within the Study Area. The following measure is recommended to minimize potential impacts to protected oak trees and oak woodlands:

- **TREE1: – Oak Tree and/or Oak Woodlands Removal Permit**. An Oak Tree and/or Oak Woodland Removal Permit shall be required for all non-exempt ministerial (e.g., building permit-related) development activities with impacts to Oak Resources on a Developed Parcel as defined in the ORMP. Application for an Oak Tree or Oak Woodland Removal Permit shall be made by filing a completed application form with the County Development Services Director.

- **TREE2: – Oak Woodlands Removal**. If identified Oak Woodlands will be impacted as part of the permit, the applicant shall mitigate for loss of oak woodlands. Mitigation shall occur at the ratio identified in Table 3 (of the ORMP) (Oak Woodland Mitigation Ratios) using one or more of the following options as specified in the ORMP:

  a) In-lieu Fee payment based on the percent of onsite Oak Woodland impacted by the development as shown in Table 5 (Oak Woodland In-Lieu Fee) in the ORMP to be either used by the County to acquire offsite deed restrictions and/or conservation easements or to be given by the County to a land conservation organization to acquire offsite deed restrictions and/or conservation easements.

b) Offsite Deed Restriction or Conservation Easement acquisition for purposes of offsite oak woodland conservation consistent with Chapter 4.0 (Priority Conservation Areas) of the ORMP.

c) Replacement planting within an area onsite for up to 50 percent of the total Oak Woodland mitigation requirement consistent with Section 2.4 (Replacement Planting Guidelines) of the ORMP. This area shall be subject to a deed restriction or conservation easement.

d) Replacement planting within an area offsite for up to 50 percent of the total Oak Woodland mitigation requirement. Offsite replacement planting areas shall be consistent with Section 2.4 (Replacement Planting Guidelines) and Chapter 4.0 (Priority Conservation Areas) of the ORMP. This area shall be subject to a deed restriction or conservation easement.

e) A combination of options a through d above.

- **TREE3: – Individual Native Oak Tree/Heritage Tree Removal**. If Individual Native Oak Trees, including Heritage Trees, will be impacted as part of the permit, the applicant shall mitigate for loss of individual tree(s) by one or more of the following options as specified in the ORMP:

  a) In-lieu Fee payment for individual oak tree removal to be either used by the County to plant oak trees or to be given by the County to a land conservation organization to plant oak trees as shown in Table 6 (Individual Oak Tree In-Lieu Fee) in the ORMP.

  b) Replacement planting offsite within an area subject to a Conservation Easement or acquisition in fee title by a land conservation organization utilizing the replanting sizes and quantities specified in Table 4 (Oak Tree Replacement Quantities) in the ORMP. Offsite replacement planting shall be consistent with Section 2.4 (Replacement Planting Guidelines) of the ORMP; or

  c) Replacement planting within an area on-site for up to 50 percent of the total Oak Woodland mitigation requirement consistent with Section 2.4 (Replacement Planting Guidelines) of the ORMP. This area shall be subject to a deed restriction or conservation easement.

  d) A combination of options a through c above.

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LIST OF ATTACHMENTS

ATTACHMENT A

Results of Database Queries

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Georgetown (3812087))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAABH01022	***Rana draytonii*** California red-legged frog	Threatened	None	G2G3	S2S3	SSC
AAABH01050	***Rana boylii*** foothill yellow-legged frog	None	Endangered	G3	S3	SSC
PDAST8H1V0	***Packera layneae*** Layne's ragwort	Threatened	Rare	G2	S2	1B.2
PDCON040Q0	***Calystegia vanzuukiae*** Van Zuuk's morning-glory	None	None	G2Q	S2	1B.3
PDERI040V0	***Arctostaphylos nissenana*** Nissenan manzanita	None	None	G1	S1	1B.2
PDROS0W0C0	***Horkelia parryi*** Parry's horkelia	None	None	G2	S2	1B.2
PMCYP03M00	***Carex cyrtostachya*** Sierra arching sedge	None	None	G2	S2	1B.2
PMCYP0N080	***Rhynchospora capitellata*** brownish beaked-rush	None	None	G5	S1	2B.2
PMLIL0G020	***Chlorogalum grandiflorum*** Red Hills soaproot	None	None	G3	S3	1B.2

Record Count: 9

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

El Dorado County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Amphibians

NAME	STATUS

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Flowering Plants

NAME	STATUS
Layne's Butterweed Senecio layneae Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4062	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Willow Flycatcher Empidonax traillii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482	Breeds May 20 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ

"Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND
- PUBHh

RIVERINE
- R5UBFx
- R5UBF

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

28 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3912018, 3912017, 3912016, 3812088, 3812087, 3812086, 3812078 3812077 and 3812076;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium sanbornii var. congdonii	Congdon's onion	Alliaceae	perennial bulbiferous herb	Apr-Jul	4.3	S3	G4T3
Allium sanbornii var. sanbornii	Sanborn's onion	Alliaceae	perennial bulbiferous herb	May-Sep	4.2	S3S4	G4T3T4
Arctostaphylos mewukka ssp. truei	True's manzanita	Ericaceae	perennial evergreen shrub	Feb-Jul	4.2	S3	G4?T3
Arctostaphylos nissenana	Nissenan manzanita	Ericaceae	perennial evergreen shrub	Feb-Mar(Jun)	1B.2	S1	G1
Calystegia stebbinsii	Stebbins' morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jul	1B.1	S1	G1
Calystegia vanzuukiae	Van Zuuk's morning-glory	Convolvulaceae	perennial rhizomatous herb	May-Aug	1B.3	S2	G2Q
Carex cyrtostachya	Sierra arching sedge	Cyperaceae	perennial herb	May-Aug	1B.2	S2	G2
Ceanothus fresnensis	Fresno ceanothus	Rhamnaceae	perennial evergreen shrub	May-Jul	4.3	S4	G4
Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	May-Jun	1B.2	S3	G3
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Onagraceae	annual herb	May-Jul	4.2	S4	G4G5T4
Clarkia virgata	Sierra clarkia	Onagraceae	annual herb	May-Aug	4.3	S3	G3
Claytonia parviflora ssp. grandiflora	streambank spring beauty	Montiaceae	annual herb	Feb-May	4.2	S3	G5T3
Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jul-Aug	4.3	S3	G4G5T3
Delphinium hansenii ssp. ewanianum	Ewan's larkspur	Ranunculaceae	perennial herb	Mar-May	4.2	S3	G4T3
Eriogonum tripodum	tripod buckwheat	Polygonaceae	perennial deciduous shrub	May-Jul	4.2	S4	G4
	Jepson's coyote	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?

Eryngium jepsonii	thistle						
Fritillaria eastwoodiae	Butte County fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	3.2	S3	G3Q
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	Apr-Sep	1B.2	S2	G2
Lewisia kelloggii ssp. hutchisonii	Hutchison's lewisia	Montiaceae	perennial herb	(Apr)May-Aug	3.2	S3	G3G4T3Q
Lewisia kelloggii ssp. kelloggii	Kellogg's lewisia	Montiaceae	perennial herb	(Apr)May-Aug	3.2	S2S3	G3G4T2T3Q
Lewisia serrata	saw-toothed lewisia	Montiaceae	perennial herb	May-Jun	1B.1	S2	G2
Lilium humboldtii ssp. humboldtii	Humboldt lily	Liliaceae	perennial bulbiferous herb	May-Jul(Aug)	4.2	S3	G4T3
Packera layneae	Layne's ragwort	Asteraceae	perennial herb	Apr-Aug	1B.2	S2	G2
Phacelia stebbinsii	Stebbins' phacelia	Hydrophyllaceae	annual herb	May-Jul	1B.2	S3	G3
Poa sierrae	Sierra blue grass	Poaceae	perennial rhizomatous herb	Apr-Jul	1B.3	S3	G3
Rhynchospora capitellata	brownish beaked-rush	Cyperaceae	perennial herb	Jul-Aug	2B.2	S1	G5
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5
Wyethia reticulata	El Dorado County mule ears	Asteraceae	perennial herb	Apr-Aug	1B.2	S2	G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 12 January 2021].

ATTACHMENT B

Plant List

Growlersburg Conservation Camp Project
Plant Species Observed (March 3, 2021)

SCIENTIFIC NAME	COMMON NAME
ALTINGIACEAE	**SWEET GUM FAMILY**
*Liquidambar styraciflua**	Sweet gum
APIACEAE	**CARROT FAMILY**
Sanicula sp.	Sanicle
*Torilis arvensis**	Field hedge parsley
ASTERACEAE	**SUNFLOWER FAMILY**
Achillea millefolium	Common yarrow
*Centaurea solstitialis**	Yellow star-thistle
CUPRESSACEAE	**CYPRESS FAMILY**
Calocedrus decurrens	Incense cedar
ERICACEAE	**HEATH FAMILY**
Arbutus menziesii	Pacific madrone
Arctostaphylos sp.	Manzanita
FABACEAE	**LEGUME FAMILY**
*Cytisus scoparius**	Scotch broom
*Vicia villosa**	Hairy vetch
FAGACEAE	**OAK FAMILY**
Quercus kelloggii	California black oak
PINACEAE	**PINE FAMILY**
Pinus ponderosa	Ponderosa pine
Pseudotsuga menziesii	Douglas-fir
PLANTAGINACEAE	**PLANTAIN FAMILY**
*Plantago lanceolata**	English plantain
POACEAE	**GRASS FAMILY**
*Avena fatua**	Wild oat
*Bromus madritensis ssp. rubens**	Red brome
*Cynosurus echinatus**	Hedgehog dog-tail grass
*Festuca perennis**	Italian Ryegrass
*Hordeum murinum**	Foxtail barley
RHAMNACEAE	**BUCKTHORN FAMILY**
Frangula californica	California coffeeberry

An asterisk (*) indicates a non-native species.

Growlersburg Conservation Camp Project
Plant Species Observed (March 3, 2021)

SCIENTIFIC NAME	COMMON NAME
ROSACEAE	**ROSE FAMILY**
*Rubus armeniacus**	Himalayan blackberry
RUBIACEAE	**MADDER FAMILY**
Galium aparine	Common bedstraw
SCROPHULARIACEAE	**FIGWORT FAMILY**
*Verbascum thapsus**	Common mullein

An asterisk (*) indicates a non-native species.

ATTACHMENT C

Wildlife List

Attachment C. Wildlife Observed Onsite (March 3, 2021)

Common Name	Scientific Name
Birds	
Canada Goose	*Branta canadensis*
Mallard	*Anas platyrhynchos*
Wild Turkey	*Meleagris gallopavo*
Band-tailed Pigeon	*Patagioenas fasciata*
Anna's Hummingbird	*Calypte anna*
Red-shouldered Hawk	*Buteo lineatus*
Acorn Woodpecker	*Melanerpes formicivorus*
Downy Woodpecker	*Dryobates pubescens*
Nuttall's Woodpecker	*Dryobates nuttallii*
Northern Flicker	*Colaptes auratus*
Black Phoebe	*Sayornis nigricans*
Steller's Jay	*Cyanocitta stelleri*
Common Raven	*Corvus corax*
Oak Titmouse	*Baeolophus inornatus*
Red-breasted Nuthatch	*Sitta canadensis*
White-breasted Nuthatch	*Sitta carolinensis*
Ruby-crowned Kinglet	*Regulus calendula*
Western Bluebird	*Sialia mexicana*
American Robin	*Turdus migratorius*
Chipping Sparrow	*Spizella passerina*
Dark-eyed Junco	*Junco hyemalis*
White-crowned Sparrow	*Zonotrichia leucophrys*
Song Sparrow	*Melospiza melodia*
California Towhee	*Melozone crissalis*
Red-winged Blackbird	*Agelaius phoeniceus*
Brewer's Blackbird	*Euphagus cyanocephalus*
Yellow-rumped Warbler	*Setophaga coronata*
Mammals	
Mule Deer (tracks)	*Odocoileus hemionus*

APPENDIX D

CONFIDENTIAL Cultural Resources Inventory and Architectural History Evaluation Report, CAL FIRE Growlersburg Conservation Camp Replacement Project, ECORP Consulting, Inc. April 16, 2020.

APPENDIX E

Paleontological Records Search Results:

Growlersburg Project, El Dorado County, Kenneth Finger Ph.D., 2021

Kenneth L. Finger, Ph.D.
Consulting Paleontologist

18208 Judy St., Castro Valley, CA 94546-2306 510.305.1080 klfpaleo@comcast.net

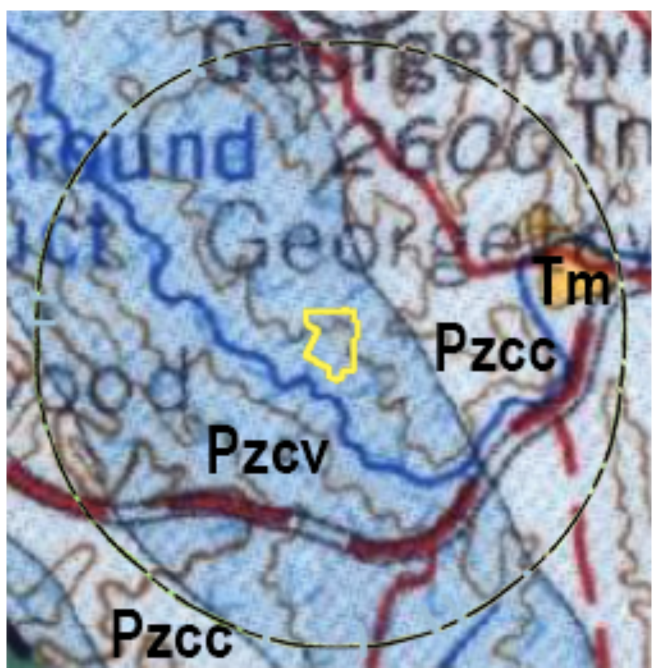
May 27, 2021

Don Mitchell
ECORP Consulting, Inc.
215 North 5th Street
Redland, CA 92374

Re: Paleontological Records Search: Growlersburg Project (ECORP Project No. 2018-116-016), El Dorado County

Dear Mr. Mitchell:

As per your request, I have performed a records search on the University of California Museum of Paleontology (UCMP) database for the proposed Growlersburg project located at 5540 Longview Lane, Georgetown, El Dorado County. Its PRS location is E½, W½, Sec. 9, T12N, R10E, Georgetown quadrangle (USGS 7.5'-series topographic map). The Proposed Project includes the replacement/upgrade of the existing Conservation Camp and associated facilities/structures. New facilities to be constructed include an administration Building, 136-bed inmate dorm buildings, inmate recreation building, inmate hobby building, 6-bed CDCR/CDF barracks building, inmate kitchen and mess hall, multipurpose facility, inmate staging area (with restroom and showers), warehouse, carpentry shop, auto welding shop, vehicle storage building, sawmill shed and building, planer/assembly building (includ-ing dry kilns), pole barn, generator/pump/ storage building, covered vehicle rack, and vehicle wash recycling.



<u>Geologic Mapping</u>

The project area is located on a Late Paleozoic (Mississippian–Permian) subduc-tion mélange known as the Calaveras Complex. As shown here on part of the geologic map of Wagner et al. (1981), he project site (yellow outline at center) lies upon volcanic rocks (Pzcv) of the unit, while the surrounding one-mile search area (black outline) also includes its metasedimentary rocks (Pzcc) and a small area where the Calaveras is overlain by andesitic mudflow breccia of the Pliocene Mehrten Formation (Tm).

Paleontological Records Search

The paleontological records search on the UCMP database focused on the Calaveras Complex. Schweickert et al. (1977) note that there have a been a few fossil occurrences reported where its metasedimentary limestones contain foraminifera (fusulinids, neoschwagerinids, textulariids), solitary horn (rugose) corals, and crinoid stems. The UCMP database records 13 Calaveras fossil localities, three in El Dorado County, six in Amador County, one in each of Butte, Placer, and Plumas counties, and another in an unidentified county, but only two corals are identified. None of these 13 UCMP localities is within five miles of the Growlersburg site. In addition, the database lists 43 vertebrate and 13 plant localities in the Mehrten Formation, all located more than 40 miles from the project site.

Paleontological Assessment and Mitigation Recommendations

Neither a preconstruction paleontological walkover survey nor paleontological monitoring of earth-disturbing construction activities is recommended for this project site because no significant paleontological resources have been found in the Calaveras Complex, which is the only unit that will be impacted by project-related construction activities. This report therefore concludes the paleontological mitigation required for this project in accordance with CEQA guidelines.

Sincerely,

Ken Finger

Reference Cited

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APPENDIX F1

Geologic Hazards Evaluation and Geotechnical Investigation Report, Kleinfelder, December 15, 2008

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GEOLOGIC HAZARDS EVALUATION AND GEOTECHNICAL INVESTIGATION REPORT PROPOSED CAL FIRE GROWLERSBURG CONSERVATION CAMP REMODEL 5440 LONGVIEW LANE, GEORGETOWN (EL DORADO COUNTY), CALIFORNIA

December 15, 2008

This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance, but in no event later than 3 years from the date of the report. Land or facility use, on and off-site conditions, regulations, or other factors may change over time, and additional work may be required with the passage of time. Based on the intended use of the report, Kleinfelder may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party and client agrees to defend, indemnify, and hold harmless Kleinfelder from any claim or liability associated with such unauthorized use or non-compliance.

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December 15, 2008
File No. 96004

Mr. Don Mariano
Lionakis Beaumont Design Group
1919 19th Street
Sacramento, California 95811

Subject: **Geologic Hazards Evaluation and Geotechnical Investigation Report Proposed Cal Fire Growlersburg Conservation Camp Remodel 5440 Longview Lane Georgetown (El Dorado County), California**

Dear Mr. Mariano:

Kleinfelder is pleased to present the attached geologic hazards evaluation and geotechnical investigation report for the proposed remodel of the Cal Fire Growlersburg Conservation Camp facility near Georgetown in El Dorado County, California. The purpose of our investigation was to identify geologic and geotechnical conditions that will affect the project design and construction and to provide recommendations to mitigate these conditions.

Based on the results of our investigation it is our professional opinion the site may be developed for the proposed facility remodel. However, the presence of loose/soft near surface fill materials and soils, expansive soils, naturally occurring asbestos (NOA) materials, and difficult excavation conditions may require modifications to the project design and/or construction methods. Specific recommendations to reduce these potentially adverse effects as well as general recommendations regarding the geotechnical aspects of the project design and construction are presented herein. In addition, it is likely that the site will be subjected to ground shaking from offsite seismic sources during the life of the project.

Recommendations provided herein are contingent on the provisions outlined in the ADDITIONAL SERVICES and LIMITATIONS sections of this report. The project Owner should become familiar with these provisions in order to assess further involvement by Kleinfelder and other potential impacts to the proposed project.

We appreciate the opportunity to be of service on this project. If you have questions, comments, or require additional information, please do not hesitate to contact our office at (916) 366-1701.

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Respectfully submitted,

KLEINFELDER WEST, INC.

Bradley von Dessonneck
Staff Geologist

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Important Information About Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.

ASFE
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PLATES

APPENDICES

1 INTRODUCTION

Kleinfelder has performed a geologic and seismic evaluation of existing information combined with a geotechnical investigation pertaining to the proposed remodel of the Cal Fire Growlersburg Conservation Camp facility near Georgetown in El Dorado County, California. The location of the project site is shown on the USGS 1:24,000-scale topographic quadrangle map presented in part on Plate 1, and is located at latitude: 38.9037° N, longitude: 120.8701° W. All plates referred to in this report are contained separately following the text of the report. This report is organized by an initial summary of geologic, seismic, and subsurface conditions followed by a discussion of potential geologic and seismic hazards at the site and their potential influence on the proposed project, including:

- Ground Rupture Potential
- Earthquake Ground Motions
- Liquefaction and Lateral Spreading
- Compressible or Collapsible Soils
- Landslides and Slope Instability
- Tsunami and Seiche
- Naturally Occurring Asbestos
- Volcanic Eruption
- Flooding and Severe Erosion
- Expansive Soils
- Soluble Sulfates and Corrosive Soils
- Shallow Groundwater and Seepage
- Soft Surficial Soils
- Subsidence Due to Collapse of Underground Mine Workings

Geotechnical conclusions and recommendations for design and construction of the proposed project follow the geologic and seismic hazards portions of the report.

1.1 PURPOSE AND SCOPE OF SERVICES

Our scope of services consisted of field exploration, laboratory testing, geologic and engineering evaluations and analyses, and preparation of this report. The geologic and seismic hazards evaluation performed for this project is directed toward compliance with the recommended guidelines for geologic/seismic reports defined by the California Geological Survey (CGS), including: Note 42, Guidelines to Geologic/Seismic Reports; Note 44, Guidelines for Preparing Engineering Geologic Reports; Note 48, Checklist for the Review of Geology and Seismology Reports; Guidelines for Evaluating and Mitigating Seismic Hazards in California, CGS Special Publication 117; and the requirements of the 2007 California Building Code (CBC) for essential service facilities.

The scope of work for the geologic and seismic hazards evaluation performed for this project was in general accordance with that outlined in our proposal dated November 14, 2007, and consisted of:

- Researching available geologic and seismic reports and maps of the area.
- A brief reconnaissance of the site by our Certified Engineering Geologist (CEG) to observe surface features and to develop site-specific geologic map.
- Analysis of air photos for assisting in the geologic interpretation and identification of faults and other potential hazard-related features.
- Evaluation of geologic conditions including the results of the boring and laboratory testing of soil samples completed during the geotechnical investigation.
- Estimating Site Class per Table 1613A.5.2 of 2007 CBC.
- Performing probabilistic and deterministic seismic hazard analyses in order to develop site-specific seismic design criteria in terms of peak and spectral ground accelerations (S_{MS}, S_{M1}, S_{DS}, and S_{D1}) for the Maximum Considered Earthquake (MCE) and the Design Earthquake (DE) per Chapter 1613A of 2007 CBC. The analyses have used, and therefore include, regional faulting and seismicity.
- Providing conclusions regarding the potential for fault rupture, ground accelerations, ground failure potential, liquefaction, seismic settlement and compaction, presence of naturally occurring asbestos (NOA), subsidence due to collapse of underground mine workings, flooding, tsunamis, seiches, seismically induced landsliding, lurching and lateral spreading.
- Testing of 5 samples of soil and/or rock using the California Air Resources Board (CARB) 435 PLM method to evaluate the presence and levels of naturally occurring asbestos minerals.

- Preparation of a written report for the site presenting conclusions and recommendations as required regarding geologic and seismic hazards (including flooding) and suitability of the site for the proposed project, including site-specific geologic and seismicity maps.

The purpose of the geotechnical investigation was to evaluate the geologic and soil conditions encountered during our subsurface exploration and geologic reconnaissance in order to develop geotechnical engineering recommendations for project design and construction. The scope of services for the geotechnical investigation performed for this project was in general accordance with that outlined in our proposal dated November 14, 2007, and included the following:

- Performing a geotechnical field investigation which included:
  - Drilling of nine test borings to a maximum depth of approximately 20 feet below the ground surface for the primary purpose of evaluating soil characteristics and depth to and conditions of the underlying bedrock;
  - Excavation of twenty-five test pits to a maximum depth of approximately 12 feet below the ground surface for the primary purpose of evaluating soil characteristics and depth to and conditions of the underlying bedrock;
  - Completing four seismic refraction surveys with investigation depths of approximately 50 feet to investigate depth and conditions of site soils and underlying bedrock.
- Laboratory testing
- Preparation of this report which includes:
  - A description of the proposed project
  - A description of the surface and subsurface site geotechnical conditions encountered during our field investigation
  - A brief discussion of the corrosion potential of the near-surface soils encountered during our field exploration based on laboratory corrosivity tests performed (NOTE: Kleinfelder does not practice corrosion engineering and, therefore, detailed analysis of corrosion test results is not included in this report).
  - A plan or map showing the approximate exploration locations and relationship of the site to existing streets; and
  - Recommendations related to the geotechnical aspects of:
    - General earthwork, including site stripping, subgrade preparation, import fill, compaction criteria, and general alternatives to remediate wet/soft soil conditions if encountered during construction
    - Excavation conditions
    - Temporary excavations and trench backfill

- Shallow spread foundation design and construction, including allowable bearing capacity, lateral resistance, settlement, and foundation depth
- California Building Code (CBC) seismic site coefficients for use in structural analysis
- Earth retaining walls including design criteria for drained and undrained walls and the seismic increment of earth pressure
- Concrete slabs supported-on-grade
- Asphalt and portland cement concrete pavements

- Appendices that will include summaries of the field investigation and laboratory testing programs.

Other than the evaluation of the presence of naturally occurring asbestos (NOA) materials as specifically defined above, our scope of services did not include an evaluation of any possible hazardous or toxic materials that may be present at the site.

1.2 PROJECT DESCRIPTION

Based on our review of available site and project design plans and project information provided to us by the design team, we understand the proposed project will involve remodeling of the existing building campus area of approximately 20 acres located within the greater (approximately 80 acre) Growlersburg Conservation Camp facility, originally built in 1967. We understand that the project is currently proposed to include the construction of 15 new permanent structures and other new site facilities and improvements including the following items shown on Plate 2:

- Bldg A – Administration & Multi-Purpose (Phase 2) – 4,816 square feet (sf)
- Bldg B – Inmate Recreation & Hobby Barn (Phase 2) – 6,470 sf
- Bldg C – Mess Hall & Kitchen (Phase 1) – 8,395 sf
- Bldg D – Inmate Barracks (Phase 1) – 13,601 sf
- Bldg E – Sawmill Shed (Phase 1) – 1,496 sf
- Bldg F – Sawmill & Planer Assembly (Phase 1) – 5,599 sf
- Bldg G – Pole Barn (Phase 1) – 2,993 sf
- Bldg H – Cabinet Shop (Phase 1) – 6,981 sf
- Bldg J1 – Fire Pump/Elec. Equipment Building (Phase 1) – 656 sf
- Bldg J2 – Storage Shed (Phase 1) – 80 sf
- Bldg K – Staging Restroom (Phase 1) – 917 sf
- Bldg L – Auto Shop/4 Bay Garage (Phase 1) – 7,164 sf

- Bldg M – Warehouse (Phase 2) – 7,026 sf
- Bldg N – Officers Barracks (Phase 1) – 6,200 sf
- Bldg O – 3-Bay Garage Wash Rack & Filtration (Phase 1) – 2,744 sf
- Two 250,000 gallon Water Storage Tanks
- Sport Court (Phase 2) (94' x 50')
- (Possible) Temporary Recreation Building (Phase 1)
- Generators and Fuel Tank (Phase 1)
- Propane Tank
- Parking Lot 3 (Phase 1)
- Parking Lot 4 (Phase 1)
- Parking Lot 5 (Phase 2)
- CMU Retaining Walls
- Keystone Landscape Area Walls

Structural loads were not provided to us. However, since the proposed construction will be single-story wood framed and masonry structures, we anticipate maximum wall and column loads will be about 3 kips per linear foot and about 125 kips, respectively. It is also assumed that the floor slabs will support a maximum live load of 100 pounds per square foot (psf) for administration and residential structures, with minimal sustained slab loads. We understand that equipment buildings will support a sustained floor slab loading of 250 psf. Appurtenant construction will include new asphalt concrete pavements, concrete slabs and flatwork, underground utilities, and landscaping. Many of the proposed new structures will be constructed at or within the footprints of existing structures. Demolition of existing buildings will include the inmate hobby building, conference building, warehouse, utility buildings, shop, equipment building, family visit building, sawmill, assembly building, inmate recreation hall, pole barn, mess hall/kitchen, barracks, officer BOQ, and administration building. Three of the existing garages and one existing utility building will remain.

According to the available grading plans provided to us, earthwork cuts up to about 17 feet and fills up to about 16 feet in vertical extent are expected to achieve level building pads, provide vehicular access, and provide positive surface drainage. Retaining walls of up to 17 feet in height are proposed to retain new building pad fills and new or improved cut slopes. Excavations for underground utilities are not anticipated to exceed 3 to 5 feet below existing site grade.

A plot plan indicating the proposed project layout is shown on Plate 2.

1.3 PREVIOUS INVESTIGATIONS

No records were found for any previous geologic or geotechnical investigations that may have been performed at the Cal Fire Growlersburg Conservation Camp facility.

1.4 SITE DESCRIPTION

The site consists of an existing joint Cal Fire and Department of Corrections campus with several large maintenance buildings, lumber facilities, a warehouse, dining halls, barracks, and office facilities. Recreational fields and facilities have been constructed along the perimeter. The site is accessed from a driveway that extends west from Reservoir Court. The campus was originally constructed on a gentle, south facing slope and previous grading improvements have consisted of numerous cut and fill pads for placement of existing structures, utilities, walkways, and recreational areas. In addition, several retaining walls up to six feet tall were constructed to develop level building pads, pavement areas, and provide access roads. The primary parking area consists of an asphalt covered, slightly sloped to flat area located on the north side (front entrance) of the campus. Wood cutting facilities and percolation/evaporation ponds are located on the south section of the campus. Ground cover in developed but unpaved areas of the site generally consists of oak and pine trees, grass, planted shrubs, and a vegetable garden. There are also unpaved walkways surfaced with imported crushed rock materials that appear to be composed of crushed serpentine rock. Several relatively small stockpiles of rock fragments, crushed imported rock/aggregate, and construction debris were observed at the site. The currently undeveloped perimeter areas of the site and the surrounding area are comprised of oak and pine forestlands.

2 FINDINGS

2.1 GEOLOGIC SETTING

The subject site is situated in the gently rolling topography that forms the western foothills of the Sierra Nevada Mountains. This part of the Sierran foothills is characterized by Late Paleozoic and Mesozoic age metavolcanic and metasedimentary rocks. These rocks originated as ocean sediments and volcanic flow rocks on oceanic terrains west of the current Sierra Nevada mountain range. Beginning in the early Mesozoic, these ocean deposits moved west and were both subducted beneath and accreted onto the North American continent. The resulting plate collision and accretion produced the long north to northwest trending sequences of metavolcanic and metasedimentary rocks that form most of the Sierra Foothills. Further broad tilting of the Sierra Nevada over the last 10 million years, resulting from uplift along the eastern Sierra Nevada escarpment where much steeper slopes prevail, has further folded and deformed these rocks. During the Oligocene and Paleocene Epochs large river systems flowing west from the higher elevations of the ancient Sierra Nevada mountain range carved valleys in which alluvial deposits were formed. These alluvial deposits and portions of the metamorphic rocks were subsequently covered by volcanic flow rocks including lava flows, ash flows, and volcanic mud flows during the Miocene epoch. Because these volcanic deposits were more resistant to erosion than the surrounding rocks, they remained as the relocated rivers eroded the surrounding rock. This resulted in inverted topography with the former valley bottoms, which had been filled in by sediment and volcanic flow rocks, now forming the ridges. Where the younger volcanic flow rocks and ancient river deposits are absent the metamorphic rocks predominate.

2.2 REGIONAL GEOLOGY

Geologic mapping has been performed at the closest detail by Kohler (1983) in the site vicinity and is shown on Plate 3. Kohler (1983) indicates the project area is underlain entirely by the Calaveras Complex, described as a group of undifferentiated Upper Paleozoic age metavolcanic and metasedimentary rocks including phyllite, slate, chert, chlorite and amphibolite schist, greywacke, and occasional limestone. The mapping by Kohler (1983) indicates the site is underlain by metavolcanic rocks belonging to the Calaveras Complex (map symbol Pzcv).

2.3 REGIONAL FAULTING AND HISTORIC SEISMICITY

2.3.1 Regional Faulting

The project site is located in a region with many active, potentially active, and inactive faults. Faults within the region are shown on Plate 4 based upon fault locations and data indicated by the Fault Activity Map of California (Jennings, 1994 and 2005), the Digital Database of Quaternary and Younger Faults from the Fault Activity Map of California (Bryant, 2005), and the Quaternary Fault and Fold Database of the United States (USGS, 2006) compiled in a Geographic Information Systems (GIS) database. Several of the major or active fault zones in the region shown on Plate 4 are listed below (from west to east) along with their noted age of recent movement (Jennings, 1994 and 2005, Bryant, 2005, and USGS, 2006):

- Green Valley-Concord Fault (Historic) - 82± miles (132± km) southwest;
- Coast Ranges-Sierran Block Boundary Zone (Great Valley Fault Zone, Segments 3 and 4) (Historic) - 66± miles (106± km) west;
- Mohawk Valley Fault Zone (Quaternary) - 50± miles (82± km) northeast;
- Tahoe-Sierra Frontal Fault Zone (Quaternary-Holocene) - 40± miles (64± km) east;
- East Tahoe Fault (Quaternary) - 44± miles (71 ± km) east;
- Genoa Fault/Carson Range Fault (Holocene-Historic) - 55± miles (89± km) east.

In addition to those major and active faults listed above and shown on Plate 4, the San Andreas Fault Zone and the Hayward-Rodgers Creek Fault Zone are regional active major fault zones with historic seismicity and ground rupture, and are located approximately 121 miles (195 km) and 102 miles (164 km) to the west of the site, respectively.

The project site is located in the area of the Foothills Fault System. Although there remains considerable controversy among geologists regarding the activity of the

Foothill Fault System, historic seismicity (primarily low to moderate intensity events) aligns well with portions of this system and suggests that the system of faults is at least capable of generating small earthquakes at depth. Ground rupture occurred during the 1975 Oroville earthquake along the Cleveland Hill Fault within the northern extent of the Foothill Fault System. Several smaller and/or less active faults and fault zones comprising the greater Foothill Fault System are located in the vicinity of the site and include the Spenceville Fault, the Dewitt Fault, the Bear Mountain Fault Zone (including the Rescue, Maidu East, Youngs Creek, Waters Peak, and Bowie Flat Faults), and the Melones Fault Zone (including the Gillis Hill and the Foresthill-Melones Faults). The closest fault to the project site mapped as showing movement as recent as the Quaternary period is the Rescue Fault, located about 10 miles (16 km) southwest (Jennings, 1994 and 2005).

An aerial photograph of the project site area was reviewed to evaluate photo-interpretations of potential geologic and fault conditions. This aerial photograph review did not identify features that might represent geologic and/or fault conditions within or trending towards the proposed project area.

2.3.2 Historic Seismicity

The project site and its immediate vicinity are located in an area traditionally characterized by low to moderate seismic activity. Significant earthquakes have occurred very infrequently in this area during historic time (since 1800). Some of the significant regional earthquake events with epicenters shown on Plate 4 include:

- the 1887 (M6.5) Carson City earthquake, located approximately 60 miles (97 km) to the east;
- the 1888 (M6.2) Mohawk Valley earthquake, located approximately 57 miles (92 km) to the north;
- the 1892 (M6.3) Winters earthquake, located approximately 62 miles (100 km) to the southwest;
- the 1892 (M6.4) Vacaville earthquake, located approximately 70 miles (113 km) to the southwest;
- the 1975 (M6.1) Oroville earthquake, located approximately 52 miles (84 km) to the northwest;

- the 1994 (M6.2) Double Spring Flat Earthquake, located approximately 65 miles (105 km) to the east.

Numerous other significant historic earthquakes with magnitudes of 5.5 or greater have occurred in the region that includes Reno, Sparks, Carson City, Lake Tahoe, and Markleeville. These include the 1887 (M6.5) Carson City earthquake and the 1994 (M6.2) Double Spring Flat Earthquake. Epicenters of these and other significant (M ≥ 4.0) historic earthquakes in the vicinity of the site are shown on Plate 4.

2.4 REGIONAL VOLCANIC ACTIVITY

The site is located within a region that has experienced geologically recent volcanic activity. Sites of geologically recent volcanic eruptions in California are mapped by Jennings (1994), and those within the vicinity of the project site are shown on Plate 5. This map shows several centers of geologically recent volcanic eruptions within the region, including:

- Sutter Buttes – Minimum age 1.4 my BP (early Pleistocene); 54± miles (87± km) northwest
- Truckee Area – Minimum age 1.2 my BP (early Pleistocene); 48± miles (77± km) northeast
- Dardanelles – Minimum age 0.15 my BP (middle Pleistocene); 72± miles (116± km) southeast

Other sites of geologically recent and historic volcanic eruptions within the greater region of Northern California include:

- Clear Lake – Minimum age 90ky BP (late Pleistocene); 93± miles (150± km) northwest
- Mt. Lassen – 1973 (Historic) activity; 114± (183± km) miles north
- Mono Lake – 1890 (Historic) activity; 120± (193± km) miles southeast

The nearest locations of historic volcanic activity at Mt. Lassen and Mono Lake are relatively distant. Renewed volcanic activity at these sites could potentially produce ashfall that could reach the site depending on local wind conditions. However, lahars (volcanically-induced mudflows), ashflows, and gases are generally considered to be more hazardous and are not likely to reach the site from these sources given the distance to the site and the interceding topography.

2.5 REGIONAL GROUNDWATER

Groundwater was not encountered in any of our exploratory borings or test pit excavations. No records for wells in the vicinity of the project site were available from the California Department of Water Resources (DWR) website (http://wdl.water.ca.gov/gw). Based on the bedrock conditions and regional geology at the site, regional groundwater levels are expected to be at depths of greater than 50 feet.

2.6 OIL AND GAS FIELDS

The California Division of Oil and Gas (2001) has mapped oil, gas, and geothermal fields for the State of California. Their mapping indicates that no oil or gas fields are located within El Dorado County. The nearest mapped oil or gas field is identified as the Nicolaus Gas field, located about 37 miles (60 km) west of the site.

2.7 FLOODING

Flood Zone mapping information presented on the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA, 1999) for the site vicinity is shown on Plate 6. This map indicates the site is not located within a zone inundated by the 100-year flood. The nearest mapped 100 year flood zone is located about 2.1 miles (3.4 km) southwest of the site. The accuracy of this information should be confirmed by a qualified civil engineer/hydrologist. The need and/or method for mitigation of potential flooding should also be addressed.

2.8 NATURALLY OCCURRING ASBESTOS

Asbestos is a term given to a group of naturally occurring, fibrous minerals that possess unique flexible yet heat resistant and high tensile strength properties. Naturally occurring asbestos (NOA) minerals, formerly a valuable mineral resource in California and often associated with serpentinite (the state rock), were mined in the western Sierra Foothills and commonly used as a heat insulator material and in automotive brake linings until the mid-1970's when asbestos was discovered to be harmful to humans if inhaled over long exposure periods. Naturally occurring asbestos (NOA) minerals remain present in certain natural environments and, when disturbed or agitated severely by activities such as excavation and earthwork, quarrying, and/or use as unpaved road surfacing, the asbestos fibers can become airborne and a potential hazard.

Minerals known to contain asbestos-quality (i.e. asbestiform) fibers include ultramafic minerals of the amphibole group and phyllosilicates (Deer, 1975). Fibrous varieties of the amphibole group include the more common tremolite and actinolite, and amosite (asbestiform grunerite), crocidolite (asbestiform riebeckite), and anthophyllite whose occurrence is exceedingly rare in the United States (Bates, 1969). Serpentine is a phyllosilicate that occurs in the platy variety (antigorite) and chrysotile is the asbestiform variety (Hurlbut, 1971) and is the most common variety of commercially-mined asbestos minerals. Rock types associated with these minerals are accordingly known as amphibolites (i.e. >10% amphibole minerals) or serpentinites (i.e. >10% serpentine minerals), respectively. Both of these rock types are ultramafic rocks.

The locations of ultramafic rocks most likely to contain NOA have been generally mapped across the State by the California Division of Mines and Geology (CDMG) (Churchill, 2000b) and, in the vicinity of the project site, are generally restricted to the metavolcanic, gabbroic, and ultramafic rocks of the Foothill Metamorphic Belt (FMB). NOA are also known to occur as a result of hydrothermal alteration along pre-existing fractures such as fault splays comprising the Foothills Fault System which is present within the FMB. Although not unilaterally true for the entire FMB, NOA tend to occur within 1,500 feet of significant fault zones and/or within these three geologic rock types.

According to Jennings (1994), the project site is located in the FMB, and according to Kohler (1983), the site is located atop metavolcanic rocks of the Calaveras Complex. Rocks likely to contain NOA have been mapped throughout El Dorado County by the CDMG (Churchill, 2000a). Additionally, areas of found NOA, areas more likely to contain NOA, and faults within the western slope area of El Dorado County have been mapped in a GIS database by the El Dorado County

Environmental Management Department (EDCEMD) (Bruyn, 2005). Based on the information presented on the published CDMG and EDCEMD maps, the site location is not considered to be within an area likely to contain NOA, and as shown on Plate 7, the nearest mapped locations considered likely to contain NOA are approximately 2.1 miles (3.4 km) to the west-southwest, and 2.5 miles (4.0 km) to the east of the site, respectively. The nearest mapped fault splay considered as a potential source for NOA is located approximately 1.1 miles (1.8 km) to the southwest of the site (Plate 7).

Unpaved walkways at the site were found to be surfaced with crushed rock materials that appear to be derived from serpentine rock. Additionally, several stockpiles of rock fragments and crushed imported aggregate/rock materials containing serpentine rock were also observed at the site during our investigation. As noted above, serpentine rock commonly contains asbestiform minerals.

2.9 SOIL UNITS

Soil units mapped by the Natural Resource Conservation Service (USDA, 1998) in the site vicinity are shown on Plate 8. Three soil units were identified within the site area; the Auburn very rocky silt loam (map unit AxD); the Boomer very rocky loam (map unit BhD); and the Boomer gravely loam (map unit BhC). Based on data tables provided by the Natural Resource Conservation Service (1998) these clayey loam soils generally have a plasticity index range of non-plastic to 25 and low to moderate shrink-swell potential. In addition, this reference indicates these soils have a moderate risk of corrosion to uncoated steel and concrete.

2.10 PROXIMITY TO ABANDONED OR ACTIVE MINES

According to the mapping by Kohler (1983), the documented mine or economic mineral deposit nearest to the project site is the David manganese mine/deposit, located approximately 2,500 feet to the east-northeast of the project site. The location of this mine is indicated by a black diamond symbol with the numeric label '102' on Plate 3. The extent of the mine and any underground workings is not known. No other underground mines or significant economic mineral deposits were found within the immediate site vicinity. Aerial photographs and topographic maps were reviewed for indications or features of past mining activity. The review did not find features that would indicate mining activity has occurred on, or immediately adjacent to, the site.

2.11 SITE SUBSURFACE CONDITIONS

The subsurface geologic and geotechnical conditions at the project site were investigated and characterized using the field exploration and laboratory testing programs described in Appendices A, B, and C. The field exploration locations, including test pits, test borings, and seismic refraction surveys, are indicated on Plate 2. The generalized geologic/geotechnical subsurface profile for the site is comprised of residual soils overlying weathered metavolcanic bedrock at typically shallow, but variable depths. However, existing fill materials were also found to be present in several areas of the site, and surficial outcrops of weathered bedrock were found at numerous locations. The subsurface profile is shown on Cross Sections A-A', B-B', and C-C', presented on Plate 9. The subsurface materials and conditions encountered at the points of exploration are described in further detail on the Logs of Test Borings and Logs of Test Pits presented in Appendix A.

Fill materials were observed at the ground surface and were encountered in some of the test pits and borings advanced at the site. Specific areas with fill included a large arcuate area in the center portion of the site; the area of the existing and proposed new Saw Mill Buildings and Pole Barn in the southern portion of the site; and the area of the proposed new Cabinet Shop in the southeastern corner of the site. The mapped approximate limits of the observed fill materials are shown on Plate 2. The fill materials were found to extend to depths ranging from less than one foot to nearly 5 feet below the existing ground surface (bgs), and were underlain by native soils and/or weathered bedrock. The fill materials appear to be derived from local sources and generally consist of sandy to gravelly silt and/or clay with rock fragments up to about 2 feet in maximum dimension. The fill materials were found to be variably loose or soft to firm and were found to contain some debris, including fragments of broken pipe, asphalt debris, and wood.

The native near-surface soils encountered in the exploratory excavations and test borings performed for this investigation generally consist of firm, moderately expansive to expansive clayey and silty colluvial and residual soils with varying lesser amounts of sand and gravel. These near-surface soils typically extended to depths of between 3 and 10 feet bgs, and represent residual soil development atop the underlying weathered metavolcanic rock. Residual soils were found to extend to depths of up to about 12 to 20 feet bgs in some of the exploration locations. This variability is likely due to both past grading at the site and variable bedrock weathering profiles.

Decomposed to slightly weathered metavolcanic rock was typically encountered below the fill and/or native soils at depths ranging from about 1.5 to 20 feet bgs, with the majority of the exploratory pits or borings encountering bedrock at depths of less than 10 feet. However, bedrock was encountered at the existing ground surface in a few of the test pits (TP-6, TP-7, and TP-16), and was not encountered within the depths of exploration of several other test pits (TP-1, TP-2, TP-12, TP-17, TP-19, TP-20, and TP-25). The decomposed portion of the metavolcanic rock typically exhibited properties more representative of sandy to gravelly clay soils, and the contact between the overlying residual soils and the underlying weathered bedrock was often far more gradational than abrupt. The majority of the metavolcanic rock was found to be highly weathered, relatively soft, and typically extremely weak to weak. The depth and degree of weathering within the rock mass was found to be variable, and as such, the weathering profile and strength of the rock should be expected to vary widely across the site. The rock was typically very closely to closely fractured with fracture infilling materials consisting of sandy fat clay and fat clay with sand.

The metavolcanic bedrock encountered during this investigation is generally consistent with Kohler's (1983) mapping and descriptions of the metavolcanic rock units of the Calaveras Complex as discussed in Section 2.2 above.

Groundwater was not encountered in any of our exploratory test pits or borings at the time of our investigation. It should be noted that groundwater and soil moisture conditions within the area will vary depending on rainfall, irrigation practices, and/or runoff conditions not apparent at the time of our field investigation. Although not observed at the site, it is common for seasonal seepage to develop at the interface between the surficial soils and the underlying weathered rock at depth.

2.12 SEISMIC REFRACTION SURVEY

Additional subsurface characterization was performed using the data gathered from four seismic refraction surveys performed at the site, as described in Appendix C. The seismic refraction surveys were performed in order to identify possible compression wave velocity boundaries between subsurface materials. A Smartseis SE12 seismograph with 10 foot geophone spacing was used to evaluate the subsurface characteristics.

Seismic refraction surveys were performed along Lines 1 and 2 to investigate and characterize the soils and bedrock present within the existing cut slopes along the alignment of the proposed new retaining wall extending behind the new Warehouse and Auto Shop/Garage buildings. As shown on Plates C-1 and C-2, the seismic refraction survey data collected from Lines 1 and 2 indicate that weathered metavolcanic rock is present beneath the surficial residual soils at depths of less than 4 up to about 13 feet bgs. Based on the average seismic compression wave (P-wave) velocities of approximately 2,800 to 4,300 feet per second (fps), the rock is considered to be highly fractured and highly to moderately weathered extending to depths of about 18 to 47 feet bgs. Relatively intact, slightly to moderately weathered bedrock with average seismic compression wave (P-wave) velocities of approximately 6,900 to 7,600 feet per second (fps) is considered to be present at depths below about 18 to 47 feet bgs. The depths of soil and bedrock indicated by the seismic refraction survey data correlate well with the depths of soil and underlying weathered bedrock encountered in the nearby Test Pits TP-19 and TP-21.

A seismic refraction survey was performed along Line 3 to investigate and characterize the soils and bedrock present in the area of the proposed new Parking Lot 5 and the associated retaining wall. As shown on Plate C-3, the seismic refraction survey data collected from Line 3 indicate that weathered metavolcanic rock is present beneath the surficial residual soils at depths of about 13 to 18 feet bgs. Based on the average seismic compression wave (P-wave) velocity of approximately 4,000 feet per second (fps), the rock is considered to be moderately to highly fractured and highly to moderately weathered extending to depths of about 33 to 53 feet bgs. Relatively intact, slightly to moderately weathered bedrock with average seismic compression wave (P-wave) velocities of approximately 6,500 feet per second (fps) is considered to be present at depths below about 33 to 53 feet bgs. The depths of soil and bedrock indicated by the seismic refraction survey data generally correlate well with the depths of soil and underlying weathered bedrock encountered in the nearby Test Pits TP-2, TP-3, and TP-4.

A seismic refraction survey was performed along Line 4 to investigate and characterize the soils and bedrock present in the area of the proposed new water storage tanks and the associated retaining wall. As shown on Plate C-4, the seismic refraction survey data collected from Line 4 indicate that weathered metavolcanic rock is present beneath the surficial residual soils at depths of about 15 to 28 feet bgs. Based on the average seismic compression wave (P-wave) velocity of approximately 6,700 feet per second (fps), the rock is considered to be moderately fractured and moderately to slightly weathered extending to depths of about 41 feet bgs. Relatively intact, slightly weathered to unweathered bedrock with average seismic compression wave (P-wave) velocities of approximately 12,300 feet per second (fps) is considered to be present at depths below about 41 feet bgs. The depths of soil and bedrock indicated by the seismic refraction survey data generally correlate well with the depth of soil encountered in the nearby Test Pit TP-1.

It should be noted that the seismic velocities and layer boundary depths presented herein represent averaging both laterally and vertically and actual subsurface conditions may vary significantly. In addition, localized weathering, particularly along near-vertical fractures may produce zones of deeper weathering and/or fracturing than is assumed to correlate to the seismic refraction velocities obtained from the survey, as discussed above.

Further details and results from the seismic refraction surveys are presented in Appendix C of this report.

3 SEISMIC HAZARD ANALYSIS

3.1 REGIONAL AND LOCAL FAULTING

Based on the information provided in Hart and Bryant (2007), the site is not located within a State-designated Alquist-Priolo Earthquake Fault Zone where site-specific studies addressing the potential for surface fault rupture are required, and no known active faults traverse the site.

An active fault is a fault that has experienced seismic activity during historic time (since roughly 1800) or exhibits evidence of surface displacement during Holocene time (Hart and Bryant, 2007). The definition of "potentially active" varies. A generally accepted definition of "potentially active" is a fault showing evidence of displacement that is older than 11,000 years (Holocene age) and younger than 1.7 million years (Pleistocene age). However, "potentially active" is no longer used as criteria for zoning by the CGS. The terms "sufficiently active" and "well-defined" are now used by the CGS as criteria for zoning faults under the Alquist-Priolo Earthquake Fault Act. The definition "inactive" generally implies that a fault has not been active since the beginning of the Pleistocene Epoch (older than 1.7 million years old).

The project site is located within the area of the Foothills Fault System. The nearest mapped fault to the site is the western branch of the Melones Fault Zone, which is considered to have last experienced displacement in pre-Quaternary time (>1.7 million years ago). As shown on Plate 2, this nearest segment of the western branch of the Melones Fault Zone is located about 1.1 miles (1.8 km) to the southwest of the site. The nearest fault to the project site considered to have experienced displacement in the Quaternary period is the Rescue Fault strand of the Bear Mountain Fault Zone, located approximately 10 miles (16 km) to the southwest of the site. Jennings (1994 and 2005) indicates the latest displacement on the Rescue Fault occurred in the late Quaternary period (<750,000 years ago). However, the faults comprising the Foothills Fault System are not considered by the CGS as independent seismogenic sources and we have not included this fault system in our analyses.

The nearest independent seismogenic source to the site is the East Tahoe Fault, at a distance of about 44 miles (71 km) to the northeast. A major seismic event on this or other nearby faults of the Carson Range Fault System listed below in Table 3.1 may cause substantial ground shaking at the site. The locations of these faults and other faults in the region are presented on Plate 4.

3.2 SEISMIC SOURCE MODEL

Our seismic source model is based on the seismic source model used in developing probabilistic seismic hazard maps by the CGS for the State of California (Cao et. al., 2003) and by the Working Group on California Earthquake Probabilities (2003) for the San Francisco Bay Area. The locations of the faults and associated parameters presented in Table 3.1 are based on data presented by Jennings (1994), Frankel et al. (1996, 2002), Petersen et al. (1996), Cao et al. (2003), and the Working Group on California Earthquake Probabilities (2003). The maximum earthquake magnitudes presented in this table are based on the moment magnitude scale developed by Kanamori (1977). The CGS has assigned weights of 0.67 and 0.33 to Characteristics and G-R models, respectively, for all the faults listed in Table 3.1. We have used the same approach in our analyses. Discussions about the recurrence relationships and the background seismicity are presented in sections below. We have used faults within 124 miles (200 km) of the project site in our analyses. However, only significant faults located within 62 miles (100 km) of the site and the corresponding fault parameters are shown below in Table 3.1 (these faults are also indicated on Plate 4).

TABLE 3.1: SIGNIFICANT FAULTS

Fault Name	Fault Length (km)	Closest Distance to Site* (km)	Magnitude of Maximum Earthquake**	Slip Rate (mm/yr)	Recurrence Interval (yr)
East Tahoe Fault	26	71	6.7	0.3	2639
Carson Range/Genoa Fault***	53	89	7.1	2	787
Kings Canyon Fault Zone***	17	91	6.5	0.2	3125
Little Valley Fault***	18	92	6.5	0.2	2899
Indian Hill Fault***	8	92	6.1	0.1	3268
Carson City Fault***	16	93	6.5	0.1	6494
Mount Rose Fault Zone***	36	96	6.9	1.5	775

* Closest distance to the potential rupture.

** *Moment magnitude*: An estimate of an earthquake's magnitude based on the seismic moment (measure of an earthquake's size utilizing rock rigidity, amount of slip, and area of rupture).

***Fault segment is part of larger Carson Range Fault System.

As mentioned earlier, the portion of the Foothills Fault System in the vicinity of the site (including the Bear Mountain and Melones Fault Zones, and the Spenceville and Dewitt Faults) has not been considered as an independent seismogenic source due to its extremely low slip rate and is included as a background seismic source.

3.3 EARTHQUAKE RECURRENCE MODEL

The earthquake probabilities for the faults and their segments were developed using a magnitude-frequency relationship derived from the seismicity catalogs and the fault activity based on their slip rates. In general, there are two models based on magnitude-frequency relationships. In the first, earthquake recurrence is modeled by a truncated form of the Gutenberg-Richter (G-R) (Gutenberg and Richter, 1956) magnitude-frequency relation given by:

$$\log N = a - bM$$

is truncated at the maximum earthquake. In the G-R model, it is assumed that seismicity along a given fault or fault zones satisfies the above equation. This model generally implies that seismic events of all sizes occur continually on a fault during the interval between the occurrences of the maximum expected events along the fault zone.

The second model, generally referred to as a Characteristic model (Schwartz and Coppersmith, 1984), implies that the time between maximum size earthquakes along particular fault zones or fault segments is generally quiescent except for foreshocks, aftershocks, or low level background activity.

Wesnousky (1994) has suggested that for well defined seismic sources and for practical purposes, the Characteristic model is more appropriate. In development of the Seismic Hazard Maps for the State of California (Cao et al., 2003), the CGS categorized the faults into two classes and apply different magnitude-frequency statistical distributions for each class. The Class A faults generally have slip rates greater than 5 mm/yr and well constrained paleoseismic data (i.e., the San Andreas, San Jacinto, Elsinore, Imperial, Hayward, and Rodgers Creek Faults). The Class B faults include all the other faults lacking paleoseismic data necessary to constrain the recurrence intervals of large events. They used the Characteristic model for Class A faults, and both the Characteristic and G-R models with weights 0f 0.67 and 0.33, respectively, for Class B faults.

We have used the CGS approach for California faults in our analyses. A b-value of 0.8 is used for all the faults in California. The most likely a-values were estimated for each seismic source based on the recurrence rates of earthquakes and events per year associated with that seismic source as reported by Petersen et al. (1996) and Cao et al. (2003).

3.4 BACKGROUND SEISMICITY

In addition to the individual seismogenic sources, we also allow for background seismicity that accounts for random earthquakes between M 5 and 7 based on the methodology described by Frankel et al. (1996). Some of the local faults have not been considered by CGS as independent seismogenic sources. Their seismicity has been included as background seismicity in the analyses. The a-values are calculated using the method described in Weichert (1980). The hazard may then be calculated using this a-value, a b-value of 0.8, minimum magnitude of 5, maximum magnitude of 7, and applying an exponential distribution as described by Hermann (1977).

3.5 HISTORICAL SEISMICITY

The project site is lies within an area considered to be slightly to moderately seismically active, and is surrounded by few active faults. Epicenters of historic earthquakes (M ≥ 4.0) in the vicinity of the project site are shown on Plate 4. The historic earthquake database used to plot the epicenters contains in excess of 5,500 seismic events and covers the period from 1800 through August 2008. The earthquake database is principally comprised of an earthquake catalog for the State of California prepared by the California Division of Mines and Geology (CDMG). The original CDMG catalog (Real, et. al, 1978) is a merger of the University of California at Berkeley and the California Institute of Technology instrumental catalogs (Hileman, et. al, 1973). The combined catalog contains earthquake records from January 1, 1900 through December 31, 1974. Updates prepared by the CDMG in 1979 and 1982 extend the coverage through 1982. In addition to the CDMG updates, the data for more recent earthquakes for the period between December 1974 and August 2008 have been obtained from several other sources, including the California Institute of Technology, the University of California at Berkeley, the University of Nevada at Reno, the Earthquake Data Base System of the U. S. Geological Survey, and the Advanced National Seismic System (ANSS). The ANSS catalog is a worldwide earthquake catalog, which is created by merging the master earthquake catalogs from contributing ANSS member networks and then removing duplicate events, or non-unique solutions from the same event. The ANSS network includes Northern and Southern California Seismic Networks, Pacific Northwest Seismic Network, University of Nevada, Reno Seismic Network, University of Utah Seismographic Stations and US National Earthquake Information Service. The earthquake database also consists of earthquake records between 1800 and 1900. This subset of the earthquake database was derived from Seeburger and Bolt (1976) and Toppozada, et. al (1978, 1981). We have also utilized the data presented in Toppozada et. al. (2000). Historic seismicity is also discussed in Section 2.3 above.

utilized the data presented in Toppozada et. al. (2000). Historic seismicity is also discussed in Section 2.3 above.

The parameters used to define the limits of the historical earthquake search include geographical limits (within 100 km/62 miles of the site), dates (1800 through August 2008), and magnitudes (M>4). A summary of the results of the historical search is presented below.

Time Period (1800 to August 2008)	208+ years
Maximum Magnitude	6.3
Approximate distance to nearest historical earthquake	31 miles (50 km)
Number of events exceeding magnitude 4 within search area	138

3.6 SITE CHARACTERIZATION

In developing site-specific seismic design criteria, the characteristics of the soils underlying the site are an important input to evaluate the site response at a given site. Based on the results of our field investigation as described in Section 2.11, the site is generally underlain by shallow native residual soils overlying weathered metavolcanic rock. Depth of the soils typically varies from less than 5 up to 10 feet.

Based on the above, we believe that for the seismic response study, the site can be classified as a soft rock site (Site Class C), as presented in Table 1613A.5.2 and Section 1613A.5.5 of the 2007 CBC. Site Class C is defined as very dense soil and soft rock profile with average shear wave velocities between 1,200 feet/sec and 2,500 feet/sec, average SPT N-values greater than 50 blows/foot, or average undrained shear strength (Su) greater than 2,000 psf within the upper 100 feet.

3.7 SEISMIC HAZARD ANALYSIS

According to Section 1614A.1.2 of the 2007 CBC, a site-specific ground motion hazard analysis is required for sites within 6.2 miles (10 km) of an active fault, and is also allowed for other sites. We have estimated ground motion parameters using a site-specific ground motion hazard analysis per Section 1614A.1.2. In addition, we have also estimated ground motion parameters using the mapped values per Section 1613A.5.1 of the 2007 CBC.

According to the 2007 CBC, peak and spectral accelerations are to be developed for the Maximum Considered Earthquake (MCE). It should be noted that the 2007 CBC is based on the 2006 International Building Code (IBC) and the American Society of Civil Engineers (ASCE, 2005) Standard 7-05 (ASCE 7-05). We performed site-specific seismic hazard analyses to estimate peak and spectral accelerations for the MCE. According to the 2007 CBC and ASCE 7-05, the MCE is defined as the lesser of the (1) 2 percent probability of being exceeded in 50 years (return period of about 2,475 years) and (2) greater of 150 percent of the median deterministic values from the controlling fault and lower limit of the Figure 21.2-1 of ASCE 7-05. In addition, for site-specific parameters, procedures provided in Chapter 21 of ASCE 7-05 should be used and the spectral accelerations at any period from site-specific analyses should not be less than 80% of the code spectrum based on S_{MS} and S_{M1} values from Chapter 11. According to the 2007 CBC, the Design Earthquake (DE) may be taken as two thirds of the MCE.

Due to lack of any significant seismic source close to the site, we understand that the probabilistic values will govern. However, for comparison purposes, both probabilistic and deterministic seismic hazard analyses were used to estimate the peak and spectral ground accelerations for the MCE discussed above. These analyses involve the selection of an appropriate predictive relationship(s) to estimate the ground motion parameters, and, through probabilistic and deterministic methods, estimation of peak and spectral accelerations.

3.7.1 Attenuation Relationship

Site-specific ground motions can be influenced by the styles of faulting, magnitudes of the earthquakes, and local soil conditions. The attenuation relationships used to estimate ground motion from an earthquake source need to consider these effects. Many attenuation relationships have been developed to estimate the variation of peak ground acceleration with earthquake magnitude and distance from the site to the source of an earthquake.

Recently, under a Pacific Earthquake Engineering Research (PEER) Center project entitled "Next Generation of Attenuation (NGA)," five teams have developed and presented new attenuation relationships for shallow crustal earthquakes in Western North America. These relationships are Abrahamson and Silva (2008), Boore and

Atkinson (2008), Campbell and Bozorgnia (2008), Chiou and Youngs (2008), and Idriss (2008). Prior to these, four of the most used relationships and widely accepted by seismologists for shallow crustal earthquakes in Western North America were the ones presented by Boore et. al. (1997), Abrahamson and Silva (1997), Campbell and Bozorgnia (2003), and Sadigh et. al. (1997).

The NGA relationships are more robust and preferred by the development teams instead of the 1997 relationships. We also understand that the USGS used three of these NGA relationships for shallow crustal earthquakes in developing the 2008 National Seismic Hazard Maps published this year. Therefore, we have decided to use the same three NGA relationships (Boore and Atkinson, Campbell and Bozorgnia, and Chiou and Youngs) as used by the USGS. All of these relationships require an estimate of V_{S30} (average shear wave velocity in the top 30 m) as an input. Since the site can be classified as Site Class C, we have used a V_{S30} value of about 525 m/s as recommended by Boore and Atkinson (2008) for such sites. In addition to the V_{S30} and in order to account for the effects of deep soil deposits and basin effects, some of these relationships use two additional parameters; $Z_{1.0}$ and $Z_{2.5}$. $Z_{1.0}$, defined as depth in meters to the location where V_S is about 1,000 m/s, is used by the Chiou and Youngs (2008) relationship. $Z_{2.5}$, defined as depth in km to the location where V_S is about 2,500 m/s, is used by the Campbell and Bozorgnia (2008) relationship. In absence of actual measurements for these parameters, empirical equations have been provided by the authors to estimate and then use these parameters into their equations.

According to Chiou and Youngs (2008), the soil depth parameter $Z_{1.0}$ in meters can be estimated by the following equation.

$$\ln (Z_{1.0}) = 28.5 - 3.82/8 \ln (V^8_{S30} + 378.7^8)$$

According to Campbell and Bozorgnia (2007), the basin depth parameter $Z_{2.5}$ in kilometers can be estimated by the following equation.

$$Z_{2.5} = 0.519 + 3.595\ Z_{1.0}$$

where all depths are in kilometers.

However, the parameter $Z_{1.0}$ in the equation by Campbell and Bozorgnia (2007) should be estimated using the equation given by Abrahamson and Silva (2008) and not Chiou and Youngs (2008) (personal communication with Bob Youngs). According to Abrahamson and Silva (2008), the parameter $Z_{1.0}$ in meters can be estimated by the following equation.

$$\ln(Z_{1.0}) = \begin{cases} 6.745 & \text{for} \quad V_{s30} < 180\text{m/s} \\ 6.745 - 1.35 \ln\left(\dfrac{V_{S30}}{180}\right) & \text{for} \quad 180 \le V_{S30} \le 500\text{m/s} \\ 5.394 - 4.48 \ln\left(\dfrac{V_{S30}}{500}\right) & \text{for} \quad V_{S30} > 500\text{m/s} \end{cases}$$

Using the above equations, Table 3.2 presents the different parameters used in the NGA relationships for our analyses.

Table 3.2: NGA Parameters

NGA Relationship	V_{S30} (m/s)	$Z_{1.0}$ (m)	$Z_{2.5}$ (km)
Boore-Atkinson	525	na	na
Campbell-Bozorgnia	525	na	1.2
Chiou-Youngs	525	94	na

The results were obtained by taking an average of the hazard results from these three attenuations relationships and represent a mean hazard value. These predictive relationships were developed from statistical analyses of recorded worldwide earthquakes, including the records from the 1989 Loma Prieta earthquake, the 1992 Landers earthquake, the 1994 Northridge earthquake, the 1995 Kobe earthquake, the 1999 Turkey earthquake, and the 1999 Taiwan earthquake. The attenuation relationships provide mean values of ground motions associated with one set of parameters: magnitude, distance, site soil conditions, and mechanism of faulting. The uncertainty in the predicted ground motion is taken into consideration by including a standard error in the probabilistic analysis.

3.7.2 Probabilistic Seismic Hazard Analysis

We have used probabilistic seismic hazard analysis (PSHA) procedures to estimate the peak and spectral ground motions corresponding to the MCE. The probabilistic seismic hazard analysis approach is based on the characteristics of the earthquake and of the causative fault associated with the earthquake. These characteristics include such items as magnitude of the earthquake, distance from the site to the causative fault, maximum credible earthquake, length, and activity of the fault. The effects of site soil conditions and mechanism of faulting are accounted for in the attenuation relationships.

We have used computer program EZ-FRISK Ver. 7.27 (Risk Engineering, 2008) for our analyses.

The theory behind the seismic risk analysis has been developed over many years (Cornell, 1968, 1971; Merz and Cornell, 1973) and is based on the "total probability theorem" and on the assumption that earthquakes are events that are independent of time and space from one another. According to this approach, the probability of exceeding PE(Z) at a given level of ground motion, Z, at the site within a specified time period, T, is given by

$$PE(Z) = 1 - e^{-\vartheta(Z)T}$$

where $\vartheta(Z)$ is the mean annual rate of exceedance of ground motion level Z. Different probabilities of exceedance may be selected, depending on the level of performance required. The PSHA can be explained through a four-step procedure as follows.

1. The first step involves identification and characterization of seismic sources and probability distribution of potential rupture within the source. Usually, uniform probability distributions are assigned to each source. The probability distribution of site distance is obtained by combining potential rupture distributions with source geometry.

2. The second step involves characterization of seismicity distribution of earthquake recurrence. An earthquake recurrence relationship such as Gutenberg-Richter recurrence is used to characterize the seismicity of each source.

3. The third step involves the use of predictive or attenuation relationships in assessing the ground motion produced at the site by considering the applicable sources and the distance of the sources to site. The variability of attenuation relationships is also included in the analysis. The effects of site soil conditions and mechanism of faulting are accounted for in these attenuation relationships.

4. In the fourth and the last step, all of these uncertainties are combined to obtain the probability of ground motion exceedance during a particular time period.

3.7.3 Deterministic Seismic Hazard Analysis

The deterministic seismic hazard analysis (DSHA) approach, needed to establish the MCE event, is also based on the characteristics of the earthquake and of the causative fault associated with the earthquake. These characteristics include such items as magnitude of the earthquake and distance from the site to the causative fault. The effects of site soil conditions and mechanism of faulting are accounted for in the attenuation relationships for this site. The median deterministic site-specific spectral acceleration values at the site were estimated for both the East Tahoe Fault (M6.8) and the Carson Range/Genoa Fault (M7.2) located at distances of about 44 miles (71 km) and 55 miles (89 km) (closest distance to the potential rupture), respectively. A combined deterministic median envelope spectrum was created and used in the analysis.

3.7.4 Results and Discussion

As discussed earlier, the MCE is estimated using both the probabilistic and deterministic methods. Plate 10 shows the comparison between the site-specific deterministic spectrum with the deterministic lower limit spectrum. It should be noted that the site-specific deterministic spectrum is controlled by both the East Tahoe fault and the Carson Range fault. Plate 10 shows that the deterministic lower limit spectrum is the deterministic spectrum for this site.

As mentioned earlier, the site-specific spectrum should not be less than 80% of the code spectrum developed using S_{MS} and S_{M1} values. The S_{MS} and S_{M1} values are based on mapped spectral acceleration values at 0.2 sec (S_S) and 1.0 sec (S_1) and Site Class and can be computed as follows.

$S_{MS} = F_a\, S_S$
$S_{M1} = F_v\, S_1$
S_S = mapped acceleration value at 0.2 sec
S_1 = mapped acceleration value at 1.0 sec
where F_a and F_v are estimated from Tables 11.4-1 and 11.4-2

We have calculated the mapped acceleration values using Java calculator at the USGS website (http://earthquake.usgs.gov/research/hazmaps/design/) and for Site Class C, the values are as follows:

$S_S = 0.481g$ and $S_1 = 0.196g$
Site Class = C
$F_a = 1.2$ and $F_v = 1.604$
$S_{MS} = 0.577g$
$S_{M1} = 0.314g$

Using the above S_{MS} and S_{M1} values, a code spectrum was developed.

Plate 11 shows the comparison between the probabilistic, the deterministic lower limit, and the code spectra. Table 3.3 also presents the 80% of the code values. The comparison between the 80% of the code values and the probabilistic values shows that the probabilistic values are lower than the 80% of the code spectrum at periods greater than 0.4s. Therefore, the site-specific values are controlled by both probabilistic and code values.

Table 3.3: Comparison of Spectral Values

Spectral Period (sec)	Probabilistic 2% in 50 Years	150% of Deterministic Median	Deterministic Lower Limit	2007 CBC Code values	80% of Code Values
PGA	0.253	0.057	0.600	0.231	0.185
0.2	0.608	0.140	1.500	0.577	0.462
0.3	0.531	0.131	1.500	0.577	0.462
1.0	0.209	0.058	0.780	0.314	0.251
2.0	0.103	0.028	0.390	0.157	0.1255

3.8 SEISMIC DESIGN PARAMETERS

We have estimated seismic design parameters using both the site-specific ground motion hazard analyses per Section 1614A.1.2 and Section 21.3 of ASCE 7-05, and using the mapped values per Section 1613A.5.1 of the 2007 CBC.

3.8.1 Site-Specific Peak and Spectral Accelerations

Site specific ground motion parameters for the MCE and the DE were estimated using the site-specific response spectra and the 2007 CBC code values presented earlier. We have followed the criteria presented in Section 21.4 of ASCE 7-05 to develop site-specific seismic design parameters. According to ASCE 7-05, the S_{MS} value should be taken as greater of the value at 0.2 second and 90% of any spectral acceleration after that period. Based on this, the S_{MS} value is governed by the value at 0.2 second as shown in Table 3.3. Additionally, the S_{M1} value should be taken as greater of the value at 1 second or two times the value at 2 second. Based on this, both values are same (0.251g) as shown in Table 3.3. Site-specific peak ground accelerations and spectral acceleration values (S_{MS} and S_{M1}) are presented in Table 3.4 for the MCE.

Table 3.4: Site-Specific Ground Motion Parameters for the MCE

Parameter	Value	2007 CBC Reference
PGA	0.253g	Section 1614A.1.2
S_{MS}	0.608g	Section 1614A.1.2
S_{M1}	0.251g	Section 1614A.1.2

Values for the DE can be taken as two thirds the MCE values and are listed in Table 3.5.

Table 3.5: Site-Specific Ground Motion Parameters for the DE

Parameter	Value	2007 CBC Reference
PGA	0.169g	Section 1614A.1.2
S_{DS}	0.405g	Section 1614A.1.2
S_{D1}	0.167g	Section 1614A.1.2

3.8.2 2007 CBC Seismic Design Parameters

The Maximum Considered Earthquake (MCE) mapped spectral accelerations for 0.2 second and 1 second periods (S_S and S_1) were estimated using Section 1613A.5 of the 2007 CBC. The mapped acceleration values and associated soil amplification factors (F_a and F_v) based on the 2007 CBC are presented in Table 3.6 below. Corresponding design spectral accelerations (S_{DS} and S_{D1}) are also presented in Table 3.6.

Table 3.6: Ground Motion Parameters Based on the 2007 CBC

Parameter	Value	2007 CBC Reference
S_S	0.481g	Section 1613A.5.1
S_1	0.196g	Section 1613A.5.1
Site Class	C	Table 1613A.5.2
F_a	1.2	Table 1613A.5.3(1)
F_v	1.604	Table 1613A.5.3(2)
S_{MS}	0.577g	Section 1613A.5.3
S_{M1}	0.314g	Section 1613A.5.3
S_{DS}	0.385g	Section 1613A.5.4
S_{D1}	0.210g	Section 1613A.5.4

According to Section 1802A.2.7 of the 2007 CBC, the PGA can be estimated either using a site-specific study or can be taken as $S_{DS}/2.5$, where S_{DS} is determined using Section 1613A. Since a site-specific study has been performed, we recommend that the PGA (0.169g) and spectral accelerations from our site-specific study, presented in Tables 3.4 and 3.5, be used in the analyses.

3.9 DEAGGREGATION

Deaggregation is the process of describing the contribution of each potential earthquake source zone to the overall seismic hazard at a particular site. Based on the results of our deaggregation analyses, the general earthquake scenario most contributing to the PGA is an event with a magnitude of 6.1 at a source to site distance of about 15 miles (24 km).

4 POTENTIAL GEOLOGIC, SEISMIC, AND SOIL HAZARDS

Geologic, seismic, and subsurface conditions present at the site and in the site vicinity are described in the previous sections of this report based on existing, available maps and literature, our geologic reconnaissance of the site, and our subsurface exploration. The potential for adverse geologic hazards that may influence the planned project are discussed on the basis of those conditions in the following sections. Conditions considered to represent a reasonable hazard to the planned development are also accompanied by recommendations for further evaluation and/or mitigation alternatives, as applicable.

4.1 SEISMIC HAZARDS

4.1.1 Ground Rupture and Shaking

The site is located in the area of the Foothills Fault System, and many secondary or potentially active fault traces are located in the vicinity of the project site. No active or major faults are mapped crossing the proposed project. The nearest mapped fault to the project site is the western branch of the Melones Fault Zone located about 1.1 miles (1.8 km) to the southwest of the site, and trending northwest-southeast. According to Jennings (1994 and 2005) the age of the latest movement along the Melones Fault Zone is considered to be pre-Quaternary. Review of aerial photographs found no photolineaments trending through the site that might indicate the surface expression of a seismogenic source. The closest fault to the project site mapped as showing movement as recent as the Quaternary period is the Rescue Fault, located about 10 miles (16 km) southwest (Jennings, 1994 and 2005). The closest mapped Alquist-Priolo Earthquake Fault Zone is the Cleveland Hill Fault located about 48 miles (78 km) to the northwest of the site. During the life cycle of the project it is probable that at least one moderate to severe earthquake on the Cleveland Hill Fault, other segments of the Foothills Fault System in the vicinity of the project site, or on one of the significant regional faults discussed in Sections 2.3, 3.1, or 3.2 will cause low to moderate ground shaking at the site.

4.1.2 Earthquake Ground Motions

Future ground motions at the site for purposes of structural design and evaluation of liquefaction potential have been analyzed in accordance with the 2007 CBC, CGS Note 48, and the Guidelines for Evaluating Seismic Hazards (CGS SP117, 1996). The ground motion analysis performed for this project is discussed above in Section 3, and concludes that peak horizontal ground motions of 0.253g and 0.169g should be used for seismic design of structures and in liquefaction analysis, for the MCE and DE cases, respectively.

4.1.3 Liquefaction and Lateral Spreading

Soil liquefaction is a condition where saturated, granular soils undergo a substantial loss of strength and deformation due to pore pressure increase resulting from cyclic stress application induced by earthquakes. In the process, the soil acquires mobility sufficient to permit both horizontal and vertical movements if the soil mass is not confined. Soils most susceptible to liquefaction are saturated, loose, clean, uniformly graded, and fine grained sand deposits. If liquefaction occurs, foundations resting on or within the liquefiable layer may undergo settlements. This will result in reduction of foundation stiffness and capacities.

The site area is not prone to intense seismic activity likely to produce ground shaking severe enough to induce liquefaction. The provision of dense and compacted engineered fill as recommended herein should provide materials supporting structures that are not considered to be susceptible to liquefaction. The native clayey subgrade soils and underlying bedrock at the site are not considered to be susceptible to liquefaction, and saturated conditions at shallow depths were neither encountered during field exploration nor are anticipated to develop within the soils and bedrock underlying the site. Therefore, liquefaction should not be a concern for this site, and the potential for liquefaction at the site is considered to be minimal.

Lateral spreading is a potential hazard commonly associated with liquefaction where extensional ground cracking and settlement occur as a response to lateral migration of subsurface liquefiable material. These phenomena typically occur adjacent to free faces such as slopes and creek channels. While there are slopes in the project area, based on the soil and bedrock conditions encountered during our investigation and minimal potential for liquefaction at the site, the potential for lateral spreading to take place at the site is considered minimal.

4.2 COMPRESSIBLE AND COLLAPSIBLE SOILS

Compressible soils are characterized as soils that possess low density and/or strength and are therefore incapable of supporting significant vertical loads without significant compression and resulting settlement. Compressible soils tend to coincide with younger, Holocene deposits that have not had sufficient time to consolidate or densify, or to become indurated or cemented. Collapsible soils are those that have not been subjected to elevated moisture contents under current loading conditions and then densify when subjected to moisture increases while under load, resulting in compression and settlement. Mudflows, windblown deposits (i.e. loess), and other young, hydraulically deposited soils are often susceptible to collapse.

Based on the soil conditions noted in the test pits and borings during our field exploration, and the results of laboratory testing, the upper one to three feet of existing native residual soils are considered to be moderately compressible at existing moisture contents, and exhibit low potential for additional collapse due to increases in moisture. The upper portion of these native soils should be removed and replaced with engineered fill during the grading performed for the project, as recommended in Section 5.7 of this report. The existing undocumented fill materials are considered to be compressible and should also be removed and replaced, as recommended in Section 5.4 of this report.

4.3 LANDSLIDES AND SLOPE INSTABILITY

The project site is located within the rolling and hilly topography of the Sierra Nevada foothills. The site topography is similar, with slight to moderate inclines typically no steeper than about 6(h):1(v) for natural slopes. Existing cut and fill slopes at the site are typically less than about 10 to 15 feet in height, with maximum slope inclinations on the order of 1(h):1(v). The site is not located within an area designated as a landslide hazard zone by the California Geological Survey. No evidence of current or past landsliding or slope instability was observed on the site or in the immediate project site vicinity.

The current project design indicates that new and steepened cut sections and new building pad fill embankments will be retained by walls up to 17 feet in height. Other new and existing cut and fill slopes up to 10 feet in height will not be retained by walls. Recommendations for design and construction of temporary and permanent cut and fill slopes and retaining walls are provided in Section 5 of this report.

Based on our observations and the proposed project design, the potential for landsliding or slope instability at the site is considered to be low provided that slopes and retaining walls are designed and constructed in accordance with the recommendations provided herein.

4.4 TSUNAMI AND SEICHE

Tsunamis are oceanic waves that are generated by earthquakes, submarine volcanic eruptions, or large submarine landslides. The waves are generally formed in groups that may have very long wavelengths (several to more than 100 miles), but only a few feet high. As a tsunami enters shallow water near coastlines, the wave velocity diminishes and the wave height increases. If the trough of the wave reaches land first, the arrival of a tsunami is preceded by recession of coastal waters; if the crest of the wave reaches land first, there would be a rise in water level. The large waves that follow can crest at heights of more than 50 feet and strike with devastating force. However, since the study area is more than 100 miles from the nearest coastline, the potential for this condition is considered nil.

A seiche is a standing wave condition whereby large bodies of water when subjected to seismic accelerations can generate significant waves that overtop the basin boundaries. The nearest body of water to the site is the Middle Fork of the American River, located about 3.4 miles north of the site. The river's distance from the site and containment in a canyon do not create a seiche hazard for the project.

4.5 EXPANSIVE SOILS

Expansive soils are characterized by their ability to undergo significant volume change (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from rainfall, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors and may cause unacceptable settlement of heave of structures, concrete slabs supported on-grade, or pavements supported by these materials. Depending on their extent and location below finished subgrade, the presence of expansive soils could have a detrimental on proposed construction.

The native near-surface soils encountered in our test borings and test pits at the site consist of typically cohesive clayey and silty residual soils with low to high plasticity and varying amounts of sand and gravel. These near-surface soils typically extend to depths of between about 3 and 20 feet below existing site grades and overlie weathered rock at depth. Results of laboratory testing to determine the fines content (percent passing No. 200 sieve) and Atterberg Limits of samples obtained from the near-surface clayey and silty soils indicate fines contents ranging from 56 to 87 percent, Liquid Limits ranging from 33 to 68, and Plasticity Indices ranging from 11 to 44. These results are generally indicative of soils with low to moderate expansion potential. The results of Expansion Index (EI) testing performed on re-molded samples of the near-surface soils obtained from Test Pits TP-2 and TP-19 indicate low to high expansion potentials, with EI values of 49 and 101 determined for samples re-molded to dry densities of approximately 84 and 96 pounds per cubic foot (pcf), respectively. Based on the results of the laboratory testing, the near-surface site soils would be considered expansive in accordance with Section 1802.3.2 of the California Building Code (2007). In addition, the NRCS (1998) has mapped soils at the site characterized as having low to moderate shrink swell potential and a maximum plasticity index of 25. The underlying weathered bedrock materials appear to have low expansion potential.

The presence of these expansive soils should be considered in the project design and should be mitigated as discussed in Section 5.1.

4.6 SOLUBLE SULFATES AND CORROSIVE SOILS

Mapping of near-surface soils performed by the Natural Resources Conservation Service (1998) suggests the soils in the project site vicinity generally possess slightly acidic to neutral pH values and that none of the mapped soil series are associated with high salinity or organic content.

Selected samples of the near-surface soils encountered at the site were subjected to chemical analysis for the purpose of corrosion assessment. The samples were tested in general accordance with California Test Methods 643, 422, and 417 for determination of soil pH and minimum resistivity, content of soluble chlorides, and content of soluble sulfates, respectively. The test results are presented below in Table 4.1, Summary of Corrosion Test Results.

Table 4.1: Summary of Corrosion Test Results

Boring No.	Sample Depth (feet)	Minimum Resistivity (Ohm-Cm)	pH	Water Soluble Sulfates (ppm)	Water Soluble Chlorides (ppm)
TP-1	5.0	16,620	4.08	4.4	16.0
TP-6	6.0	9,650	4.35	1.9	28.1
TP-10	1.0	8,580	5.15	0.7	12.6
TP-15	2.0	1,370	6.72	8.8	12.3
TP-19	2.0	2,630	5.49	5.6	15.3
TP-24	5.0	2,680	6.10	3.3	6.1

According to the American Concrete Institute (ACI, 2005), a sulfate concentration below 0.10 percent by weight (1,000 ppm) is negligible. A water-soluble chloride content of less than 500 ppm is generally considered non-corrosive to reinforced concrete.

Minimum resistivity tests performed on soil samples indicated that the soils are considered to be mildly corrosive to corrosive to buried metal objects. A commonly accepted correlation between soil resistivity and corrosivity towards ferrous metals (NACE Corrosion Basics, 1984) is provided below:

Minimum Resistivity, ohm-cm	Corrosion Potential
0 to 1,000	- Severely Corrosive
1,000 to 2,000	- Corrosive
2,000 to 10,000	- Moderately Corrosive
Over 10,000	- Mildly Corrosive

We have provided the above preliminary corrosion tests. In general, the corrosion potential for the soil samples tested is considered to be non-corrosive to concrete and mildly to moderately corrosive to buried metals. These tests are only an indicator of potential soil corrosivity for the samples tested. Other soils found on the site may be more, less, or of a similar corrosive nature.

Kleinfelder does not practice corrosion engineering. We recommend that a competent corrosion engineer be retained to evaluate the corrosion potential of the site to proposed improvements, to recommend further testing as required, and to provide specific corrosion mitigation methods appropriate for the project.

4.7 LOCAL/SHALLOW GROUNDWATER

Groundwater was not encountered in any of our exploratory borings or test pit excavations advanced at the project site. No records for wells in the vicinity of the project site were available from the California Department of Water Resources website (http://wdl.water.ca.gov/gw). Based on the bedrock conditions and local geology at the site, local groundwater levels are expected to be present at depths greater than 50 feet. However, shallow bedrock was encountered and it is common for seepage and/or perched groundwater to occur during winter and spring months along the soil/bedrock contact zone where the surficial soils overlie harder soils and/or weathered bedrock at depth. Localized perched groundwater may also accumulate within bedrock fractures.

It should be noted that groundwater elevations and soil moisture conditions within the project area will vary depending on seasonal rainfall and/or snowmelt, irrigation practices, land use, and/or runoff conditions not apparent at the time of our field investigation. The evaluation of such factors is beyond the scope of this investigation.

4.8 NATURALLY OCCURRING ASBESTOS

As discussed previously in Section 2.8., the location of the site is not indicated to be likely to contain NOA based on published mapping (Churchill, 2000a, and Bruyn, 2005). However, given the general location and regional geology of the project site, and the presence of nearby mapped faults and/or shear zones, a preliminary asbestos study was conducted to evaluate the presence of NOA at the site. The preliminary study included a general geologic reconnaissance of the site, laboratory analysis, and rock sample identification.

No faults or shear zones were identified on the site during our investigation, though metavolcanic rock was identified as underlying the entire site. No NOA or asbestiform minerals were observed in the native soils and bedrock materials present at the site during our subsurface field investigation and geologic reconnaissance of the site. As noted previously, however, numerous unpaved walkways at the project site were observed to be surfaced with imported crushed rock materials that appear to be composed of crushed serpentine rock. Additionally, several stockpiles of rock fragments and crushed imported rock/aggregate materials containing serpentine rock were also observed at the site during our investigation. Serpentine rock commonly contains asbestiform minerals.

Five samples of materials obtained from the site were submitted for laboratory analysis by Forensic Analytical (FA) of Hayward, California to detect the presence of NOA minerals in accordance with the California Air Resources Board (CARB) Method 435. One sample was taken from the native residual soil encountered in Test Pit TP-8 located in the western portion of the site (FA Lab Number 10794953); two samples were taken from the native bedrock encountered in Test Pits TP-16 and TP-23 located in the southeastern and northeastern portions of the site, respectively (FA Lab Numbers 10794594 and 10794955); one sample was taken from the aggregate base material used for the existing water tank near the lumber mill (FA Lab Number 10794956); and one sample was taken from an existing crushed rock/aggregate material stockpile in the southeastern portion of the site (FA Lab Number 10794957). The results of the laboratory analyses are presented in the FA report included in Appendix D.

The native soil and rock samples were found to contain non-detectable to trace amounts of NOA at levels below the regulatory threshold level of 0.25 percent (by weight) established by the Asbestos Airborne Toxic Control Measure (ATCM) issued by the CARB (2002), and enforced at the project locale by the El Dorado County Environmental Management Department (EDCEMD). No asbestos material was detected in the sample of native soil. The analyses detected trace amounts of actinolite in the samples of native bedrock.

The aggregate base and stockpile samples were found to contain NOA at levels above the regulatory threshold level of 0.25 percent (by weight) established by the ATCM (CARB, 2002), and enforced at the project locale by the EDCEMD. The analyses detected the presence of chrysotile in each sample at estimated concentrations of approximately 1 and 12 percent (by weight) for the aggregate base and stockpile materials, respectively.

Based on the results of the laboratory analyses, the bedrock type identified at the site, and the presence of faults/shears in the general site vicinity, this asbestos study and sampling should be considered a preliminary screening. NOA concentrations at or above the regulatory level of 0.25 percent (by weight) established by the ATCM (CARB, 2002) are still considered possible for the native soils and bedrock at the site, and should be evaluated further during grading. Based on the results of the laboratory analyses, NOA concentrations in the existing crushed serpentine rock aggregate base and stockpile materials at the site exceed the regulatory level of 0.25 percent (by weight) established by the ATCM (CARB, 2002) and enforced by the EDCEMD. Similar crushed serpentine rock and aggregate base material was observed in road base, surfacing course for unpaved walkways and exercise areas, stockpiles around the camp, and scattered throughout the existing fill materials during our field exploration.

Based on the documented presence of NOA minerals in the existing crushed aggregate and rock stockpiles at the site, and the potential for NOA minerals to be encountered in subgrade soil and/or rock during construction, we recommend that a professional geologist with experience in identifying NOA minerals and associated rocks be present to perform observations during grading. The observations should be performed to identify NOA minerals, if encountered, and provide additional mitigation recommendations, if necessary.

We also recommend that an Asbestos Dust Mitigation Plan (ADMP) be prepared and implemented for use during the grading operations of the project construction, in accordance with the requirements of EDCEMD Air Quality Management District (AQMD) Rule 223-2. All excavation, grading, and/or post-construction mitigation of NOA should be performed in accordance with the applicable sections of Rule 223, Fugitive Dust issued by the EDCEMD AQMD.

In addition to the mitigation of potential on-site NOA, off-site imported material used for general or engineered fill should be evaluated for potential NOA content – particularly those materials originating from local sources. Materials exported from the site may also need to be handled per CARB and EDCEMD specifications for NOA material.

5 GEOTECHNICAL CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our investigation, it is our professional opinion that the site may be developed for the proposed improvements subject to our recommendations. However, several factors will affect the costs, design, and/or methods for construction of the proposed project including: removal of existing fill materials; presence of soft/loose existing native near-surface soils; expansive clay and elastic silt native subgrade soils with moderate to high plasticity; possible difficult rock excavation; and the presence of imported crushed aggregate materials likely to contain asbestiform minerals that will be disturbed during construction. Specific recommendations to reduce these potentially adverse effects as well as general recommendations regarding the geotechnical aspects of the project design and construction are presented in the following sections of this report.

5.1 EXPANSIVE SOILS

Based on the results of our field investigation and laboratory testing programs, the native near-surface clayey and silty residual soils at the site are considered slightly to highly expansive, as discussed in Section 4.5. Expansive soils were also encountered at depth as clayey fracture infilling within the weathered metavolcanic bedrock and may be exposed upon excavation. Depending on the extent and location below finished subgrade, these soils could have a detrimental effect on the proposed construction.

We recommend a representative from Kleinfelder be present during site grading to evaluate proposed building and slab-on-grade areas for the presence of near-surface, expansive soils. In the event expansive soils are encountered (or suspected) within 24 inches of finished subgrade, we recommend these materials be excavated (to a depth of at least 24 inches below finished subgrade) and replaced with non-expansive soil, placed and compacted in accordance with recommendations provided below for engineered fill. Excavated, expansive soil should either be: (1) disposed of off-site; (2) placed in landscape areas of the project; or (3) placed within the lower portion (i.e. at least 24 inches below finished subgrade) of deep fills. For the purposes of this report, the building pad is defined as the area occupied by the building, an area that extends a minimum of five feet beyond the building lines, attached canopies, and any attached concrete flatwork such as walkways, patios, and sidewalks.

In order to provide the recommended depth of non-expansive engineered fill beneath structures and slabs, it is likely that material will need to be imported to the site, or the on-site expansive materials will require treatment with lime and/or cement to reduce the expansion potential. Careful consideration should be given to the selection of importing non-expansive material from local sources in the vicinity of the project site, as much of the material obtained locally is known to contain naturally occurring asbestos.

As an alternative to providing the recommended depth of non-expansive engineered fill, the upper 18 inches of expansive onsite soils may be treated with high calcium quick lime. The actual application rate of lime should be determined at the time of construction in consultation with the project geotechnical engineer. Lime treatment should be performed by a specialty contractor experienced in this work and should be performed in accordance with Caltrans Standard Specifications. Thus, since lime can be used with on-site soil, the expense of importing material can be avoided. Lime treated areas will have a high pH level (pH over 10) that will need to be removed from landscape areas. As runoff from treated soils will also have an elevated pH level, the use of lime should be addressed by the project Storm Water Pollution Prevention Plan (SWPPP). It should be noted that, based on past experience with similar materials in the general area of the project, lime treatment of the expansive elastic silt materials present at the site may not prove successful in reducing the expansion potential to acceptable levels for use as engineered fill. Therefore, preconstruction testing to determine appropriate lime application rates will be critical at this site. The use of lime mixing equipment (i.e., pugmill or roto-tilling type mixer; blade mixing should not be allowed) will also necessitate constructing building pads with a maximum one-inch particle size.

It should be noted these recommendations are consistent with those applied at other projects in the area with similar soil conditions. However, even with proper implementation of these recommendations, minor slab (interior and exterior) and/or pavement movement and/or distress may occur due to swelling and shrinking of the subgrade soils.

5.2 ANTICIPATED EXCAVATION CONDITIONS

Excavation of the existing fill and native soils should likely be accomplished with conventional excavation equipment. The underlying bedrock is expected to be encountered within the proposed cut areas of the site, especially for the new parking area to be constructed at the base of the low hill present in the northwestern corner of the site. Based on the drilling and excavation conditions encountered during our field exploration, and the compression wave velocities indicated by the seismic refraction surveys, it appears that the majority of the excavations proposed for construction of the project should likely be accomplished with typical equipment. The majority of the rock is anticipated to be rippable to marginally rippable but will likely contain isolated zones of less fractured rock that is hard and difficult to excavate. Hard zones of less weathered rock at depth may be more widespread. Blasting procedures may be required in such hard rock zones. It has been our experience that mechanical removal by hammering may be difficult and require pre-drilling to help break up the rock where blasting is not feasible. Rock trenchers or large excavators have generally been able to excavate within the highly weathered and fractured rock units but may not be able to remove hard and less fractured zones of rock. It should also be noted that the metavolcanic bedrock present at the site can weather irregularly producing a highly variable weathering profile with zones of relatively soft and easily excavatable material immediately adjacent to hard rock requiring specialized methods to remove. Such conditions should be anticipated during grading for the proposed project. In addition, oversized rock material may be generated during this operation, which will need to be handled as described in Section 5.3 of this report.

The anticipated excavation conditions described above are based on our observations and experience on similar projects. If a contractor is selected for this project that does not have significant experience performing earthwork in the site area, it may be beneficial to the Owner if a test section with a bulldozer or large excavator is conducted prior to general site grading in order to better evaluate the expectations of the contractor and his equipment.

5.3 OVERSIZED ROCK FRAGMENT GENERATION

Excavations at the project site may generate rock fragments exceeding the engineered fill material criteria. The majority of excavated bedrock materials can likely be used as engineered fill or trench backfill provided they are processed to meet maximum particle size requirements (i.e. 6 and 12-inch minus). Much of the weathered and fractured rock may break up with the excavation equipment. However, some over-sized materials will likely need crushing or screening to meet requirements for engineered fill or trench backfill. Existing fill materials are highly variable in consistency/density and contain rocks or boulders larger than that typically allowed for engineered fill or trench backfill. Rock that cannot be crushed to a maximum dimension of 6 inches or less should be placed in deeper portions of fill below proposed foundations and/or utility trench excavation depths. These materials should be windrowed or otherwise placed under the observation of the geotechnical engineer or his representative to avoid nesting or voids.

5.4 EXISTING, ON-SITE FILL

The proposed new and reconstructed building pad and fill areas are underlain primarily by native soils and weathered metasedimentary bedrock with some limited areas of existing surficial fill. The approximate mapped limits of the existing fill materials are shown on Plate 2; however, other areas of fill may also be encountered during site grading. The maximum existing fill depths are typically on the order of 3 to 6 feet. Given their age, the presence of debris, and the undocumented nature of the existing fill materials at the site, the existing fill materials are not considered suitable for support of the proposed structures. To eliminate the risks associated with settlement of the existing fill, all existing fill present within the areas of the proposed construction should be completely removed and replaced with newly constructed engineered fill. Preparation of the subgrade exposed by overexcavation and requirements for engineered fill should be in accordance with recommendations provided below (see Sections 5.7 and 5.11).

5.5 POTENTIALLY COMPRESSIBLE SOILS

The uppermost portions of existing near-surface native site soils are considered to be slightly to moderately compressible. Therefore, we recommend that existing native soils be overexcavated to a minimum depth of 18 inches below existing or proposed finished grade, whichever is lower, throughout the areas proposed to receive fill, structures, slabs, and pavements. Where bedrock is encountered within 18 inches of finished subgrade elevation in cut sections, no additional overexcavation should be required. Preparation of the subgrade exposed by overexcavation and requirements for engineered fill should be in accordance with recommendations provided below (see Sections 5.7 and 5.11). The overexcavated soils should then be replaced by engineered fill.

5.6 SHALLOW PERCHED GROUNDWATER

Shallow bedrock was encountered at various depths during our field investigation and was observed in surface outcrop at several locations. Depending on final site grades, rainfall and/or snowmelt, irrigation practices, and other factors beyond the scope of this study, temporarily perched shallow groundwater could develop above on-site rock, requiring temporary dewatering during construction as well as design provisions to reduce other moisture related affects such as degradation of asphalt concrete pavements subsequent to construction. Design provisions to address perched groundwater could involve gravel underdrains, elevated building pads, trench drains, or other methods. We recommend the project Civil Engineer review the subsurface information available within this report in conjunction with the project Geotechnical Engineer in order to develop appropriate mitigation measures consistent with other design considerations beyond the scope (or not available at the time) of this study.

5.7 SITE PREPARATION

5.7.1 Existing Structures and Pavements

We anticipate existing site structures and pavements within the area of planned development will be demolished and removed from the site. Depending on site grading requirements, the contractor's capabilities, and other factors, it may be possible (and desirable) to process on-site concrete and pavements for reuse as engineered fill and/or aggregate subbase. Processing could involve pulverization, grinding, or other means. Regardless of the method used, for this material to be utilized as engineered fill and/or aggregate subbase, it must meet the applicable requirements provided below (see Sections 5.11 and/or 5.18).

5.7.2 Stripping and Grubbing

Site preparation should include the stripping and removal of existing vegetation, trees, existing foundations, abandoned underground utilities, debris and other deleterious materials from the areas to be graded. We estimate the depth of stripping to be approximately 1 to 3 inches over portions of the site. Deeper stripping or grubbing may be required where existing structures, pipes or trees, concentrations of organic soils or tree roots are encountered during site grading. Stripped topsoil (less any debris) may be stockpiled and reused for landscape purposes. However, this material should not be incorporated into any engineered fill.

5.7.3 Existing Utilities, Wells, and/or Foundations

Although not encountered during our field investigation, it is possible that abandoned utility lines, septic tanks, cesspools, wells, and/or foundations may exist on site. If encountered within the area of construction, these items should be removed and disposed of off-site. Existing wells should be abandoned in accordance with applicable regulatory requirements. Existing utility pipelines that extend beyond the limits of the proposed construction and that are to be abandoned in-place should be plugged with cement grout to prevent migration of soil and/or water. All excavations resulting from removal activities should be cleaned of loose or disturbed material (including all previously-placed backfill) and dish-shaped (with sides sloped 3(h):1(v) or flatter) to permit access for compaction equipment.

5.7.4 Overexcavation, Scarification, and Compaction

Following demolition and removal of existing structures, foundations, slabs, utilities, and pavements, the removal of all existing fill materials, and site stripping and any other required clearing or grubbing, we recommend that existing native soils be overexcavated to a minimum depth of 18 inches throughout all areas of the site to receive new engineered fill or to be used for the future support of structures, concrete slabs supported-on-grade, or pavements. The limits of the overexcavation should extend a minimum of five feet horizontally beyond the footprint of the proposed new fill section, structure, slab-on-grade, or pavement section.

Following the overexcavation, we recommend the exposed subgrade be scarified to a minimum depth of 8 inches, uniformly moisture-conditioned to a minimum of the optimum moisture content, and compacted to at least 90 percent of the maximum dry density as determined by ASTM (American Society for Testing and Materials) Test Method D 1557[1]. Expansive soils should be moisture conditioned to a minimum of two percent above the optimum moisture content. The upper twelve inches of nonexpansive pavement subgrades should be compacted to at least 95 percent relative compaction.

Should bedrock be encountered within the recommended depth of overexcavation, no further overexcavation or scarification of bedrock materials will likely be required, subject to approval of the subgrade by the project Geotechnical Engineer.

In-place scarification and compaction may not be adequate to densify all disturbed soil within areas grubbed or otherwise disturbed below a depth of about 8 inches. Therefore, overexcavation of disturbed soil, scarification and compaction of the exposed subgrade, and replacement with engineered fill may be required to sufficiently densify all disturbed soil. In-place scarification of bedrock should not likely be required.

5.8 WET WEATHER CONSTRUCTION/UNSTABLE SOIL CONDITIONS

Should grading be performed during or following extended periods of rainfall or snowmelt, the moisture content of the near-surface soils may become elevated significantly above the optimum moisture content. Additionally, it is common to encounter wet, unstable soils upon removal of site pavements or flatwork as a result of subsurface moisture becoming trapped beneath relatively impervious asphalt concrete or portland cement concrete surfaces. Perched groundwater may also develop above dense, cemented on-site soils or rock, saturating near-surface

[1] *This test procedure should be used wherever relative compaction, maximum dry density, or optimum moisture content is referenced within this report.*

materials. These conditions could seriously impede grading by causing an unstable subgrade condition. Typical remedial measures include the following:

- Dry – Drying the unstable subgrade would involve disking or ripping the wet subgrade to a depth of approximately 24 inches and allowing the exposed soil to dry. Multiple passes of the equipment (likely on a daily basis) will be needed because as the surface of the soil dries, a crust forms that reduces further evaporation. Frequent disking will help prevent the formation of a crust and will promote drying. This process could take several days to several weeks depending on the depth of ripping, the number of passes, and the weather.
- Remove & Replace plus Geotextile Fabric – The subgrade could be overexcavated 12 to 24 inches below existing grade and be replaced with aggregate base or coarse gravel underlain by geotextile fabric. The geotextile fabric should be Mirafi 500X (woven) or approved equivalent. The final depth of removal will depend upon field conditions revealed once the overexcavation begins. The geotextile fabric should be placed in accordance with the manufacturer's recommendations.
- Lime Treat – The unstable subgrade could be stabilized by mixing the upper 12 to 18 inches of the subgrade with lime. For estimating purposes, lime application rates of 4 percent for high calcium quick lime and 7 percent for dolomitic lime may be used. Final application rates should be determined in the field at the time of construction in consultation with the project geotechnical engineer. Lime treatment should be performed by a specialty contractor experienced in this work and should be performed in accordance with Caltrans Standard Specifications. Lime treated areas will have a high pH level (pH over 10) that will need to be removed from landscape areas. As runoff from lime treated areas will also have an elevated pH level, the use of lime should be addressed by the project Storm Water Pollution Prevention Plan (SWPPP).

The above recommendations are intended to stabilize unstable subgrades. If deeper earthwork activities (i.e., overexcavations and trenching) are planned during adverse weather conditions, additional measures may be necessary. In addition, material removed from overexcavations and trenches may be at a high moisture content and require stabilization prior to reuse as backfill. Kleinfelder should be consulted prior to implementing any remedial measure to observe the unstable subgrade condition and provide site specific recommendations.

5.9 TEMPORARY EXCAVATIONS

5.9.1 General

All excavations must comply with applicable local, state, and federal safety regulations including the current OSHA Excavation and Trench Safety Standards. Construction site safety generally is the sole responsibility of the Contractor, who shall also be solely responsible for the means, methods, and sequencing of construction operations. We are providing the information below solely as a service to our client. Under no circumstances should the information provided be interpreted to mean that Kleinfelder is assuming responsibility for construction site safety or the Contractor's activities; such responsibility is not being implied and should not be inferred.

5.9.2 Excavations and Slopes

The Contractor should be aware that slope height, slope inclination, or excavation depths (including utility trench excavations) should in no case exceed those specified in local, state, and/or federal safety regulations (e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations). Such regulations are strictly enforced and, if they are not followed, the Owner, Contractor, and/or earthwork and utility subcontractors could be liable for substantial penalties. Flatter slopes and/or trench shields may be required if loose, cohesionless soils and/or water are encountered along the slope face.

5.9.3 Construction Considerations

Heavy construction equipment, building materials, excavated soil, and vehicular traffic should not be allowed within 1/3 the slope height from the top of any excavation. Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning may be required to provide structural stability and to protect personnel working within the excavation. Shoring, bracing, or underpinning required for the project (if any) should be designed by a professional engineer registered in the State of California.

During wet weather, earthen berms or other methods should be used to prevent runoff water from entering all excavations. All runoff water and/or groundwater encountered within the excavations should be collected and disposed of outside the construction limits.

5.10 PERMANENT SLOPES

We recommend all permanent and unrestrained cut and fill slopes be constructed at a gradient no steeper than 2(h): 1(v). To reduce the potential for surface erosion, all cut and fill slopes should be vegetated with deep-rooted perennial grasses or surfaced with other appropriate erosion control measures. To further reduce the potential for surface erosion, a berm or "V" ditch may be located at the top of slopes subject to significant overland water flows in order to intercept and redirect surface runoff.

Subsurface seepage may be encountered seasonally along cut slopes which traverse on-site bedrock and overlying soils. This potential seepage may result in the overland flow of water, possibly adversely affecting purposed project features. Therefore, we recommend the project Civil Engineer review the subsurface information available in this report with respect to site grading plans in order to assess potential impacts to the proposed project (if any) and to develop possible mitigation measures (if required).

5.11 ENGINEERED FILL

5.11.1 Materials

All engineered fill soils should be nearly free of organic or other deleterious debris, essentially non-plastic, and less than 3 inches in maximum dimension. In general, well-graded mixtures of gravel, sand, non-plastic silt, and small quantities of clay are acceptable for use as engineered fill. Specific requirements for engineered fill, as well as applicable test procedures to verify material suitability are provided in Table 5.1 below.

Table 5.1: Engineered Fill Requirements

Fill Requirement		Test Procedures	
		ASTM[1]	Caltrans[2]
Gradation			
Sieve Size	**Percent Passing**		
6 inch	100	C 136	202
3 inch	90-100	C 136	202
No. 4	50-100	C 136	202
No. 200	25-70	C 136	202
Plasticity			
Liquid Limit	**Plasticity Index**		
<30	<12	D 4318	204
Organic Content			
Less than 3%		D 2974	---
Expansion Index			
Less than 20	---	D 4829	---

[1]*American Society for Testing and Materials Standards (latest edition)*
[2]*State of California, Department of Transportation, Standard Test Methods (latest edition)*

Existing soils and excavated weathered rock materials may be used for engineered fill provided expansive soils are not placed within 24 inches of finished subgrade in the building pad and slab-on-grade areas, and any oversized rock fragments are crushed or removed to meet engineered fill criteria. Rock that cannot be crushed to a maximum dimension of 6 inches or less should be placed in deeper portions of fill below proposed foundations and/or utility trench excavation depths. These materials should be windrowed or otherwise placed under the observation of the geotechnical engineer or his representative to avoid nesting or voids.

All imported fill materials to be used for engineered fill should be sampled and tested by the project Geotechnical Engineer for conformance with the engineered fill requirements prior to being transported to the site.

5.11.2 Compaction Criteria

Non-expansive soils used for engineered fill should be uniformly moisture-conditioned to between 0 and 5 percent above the optimum moisture content, placed in horizontal lifts less than 8 inches in loose thickness, and compacted to at least 90 percent relative compaction. The upper twelve inches of non-expansive pavement subgrades should be compacted to at least 95 percent relative compaction. Expansive soils used for engineered fill (more than 24 inches below finished subgrade) should be uniformly moisture-conditioned to between 2 and 5 percent above the optimum moisture content, placed in horizontal lifts less than 8 inches in loose thickness, and compacted to between 88 and 92 percent relative compaction. The upper twelve inches of expansive pavement subgrades should be compacted to between 90 and 95 percent relative compaction. Fills exceeding 5 feet in thickness and the fill portions of cut/fill transition pads should be compacted to at least 95 percent relative compaction for their full depth. Disking and/or blending may be required to uniformly moisture-condition soils used for engineered fill.

5.11.3 Construction Considerations

Properly compacted engineered fill may experience some settlement or deflection after construction, particularly when placed in relatively deep embankment sections for construction of the proposed raised building pads. This is a result of settling of relatively deep engineered fills. This degree of the settlement and the duration of the post-construction "settling in period" will vary with engineered fill type, size, and construction and should be taken into account in overall site design.

5.12 TRENCH BACKFILL

5.12.1 Materials

Pipe zone backfill (i.e., material beneath and in the immediate vicinity of the pipe) should consist of native or imported soil with a maximum particle size less than one inch in maximum dimension. Trench zone backfill (i.e., material placed between the pipe zone backfill and finished subgrade) may consist of native soil that meets the requirements for engineered fill provided above. If import material is used for pipe or trench zone backfill, we recommend it consist of fine-grained sand. In general, coarse-grained sand and/or gravel is not recommended and should not be used for pipe or trench zone backfill due to the potential for soil migration into the relatively large void spaces present in this type of material and water seepage along trenches backfilled with coarse-grained sand and/or gravel. If coarse-grained bedding and pipe zone backfill is required, the material should be completely surrounded by a non-woven filter fabric such as Mirafi 140N, Amoco 4547, or approved equal.

Recommendations provided above for pipe zone backfill are minimum requirements only. More stringent material specifications may be required to fulfill local codes and/or bedding requirements for specific types of pipes. We recommend the project Civil Engineer develop these material specifications based on planned pipe types, bedding conditions, and other factors beyond the scope of this study.

Where utility trenches pass beneath perimeter building foundations, a trench plug should be provided to prevent water from entering beneath the building through relatively permeable trench backfill materials. The trench plug may consist of a zone of lean concrete beneath the footing that completely surrounds the utility and engages the trench wall soils. The plug should be at least 12 inches in thickness.

5.12.2 Compaction Criteria

All trench backfill should be placed and compacted in accordance with recommendations provided above for engineered fill. Within pavement areas, trench backfill should be compacted to at least 95 percent relative compaction for non-expansive materials within 12 inches of finished subgrade. Within pavement areas, trench backfill should be compacted to between 90 and 95 percent relative compaction for expansive materials present within 12 inches of finished subgrade. Depending on the type of compaction equipment selected by the contractor, thinner lifts may be necessary to achieve the recommended degree of compaction. Mechanical compaction is recommended; ponding or jetting should be avoided, especially in areas supporting structural loads or beneath concrete slabs supported-on-grade, pavements, or other improvements.

5.13 SPREAD FOUNDATIONS

5.13.1 Allowable Bearing Pressures

We recommend shallow foundations consisting of isolated (column) spread footings, continuous (perimeter or ring) spread footings, and/or monolithic slab foundations with continuous perimeter turn-down footings constructed of reinforced concrete and founded on non-expansive engineered fill (placed and compacted as recommended above) or firm residual soil/weathered bedrock at depth be used for support of the proposed new structures, including buildings, retaining walls, and tank structures. The proposed new water storage tanks may be supported by larger monolithic mat or raft-type shallow foundations bearing on non-expansive engineered fill (placed and compacted as recommended above). Where soft materials are exposed in footing excavations, the footing may be deepened to firm material with foundation concrete, lean mix concrete, or controlled density fill. The following table contains a summary of recommended foundation conditions for each structure type and final grade configuration.

Table 5.2: Recommended Foundation Support Summary

Structure	Recommended Foundation Support
Building Structures	Remove all existing fill soils and minimum of 18 inches of existing native soils. New spread foundations to bear on minimum of 18 inches of newly constructed engineered fill
Retaining Walls in Fill Sections	Remove all existing fill soils and minimum of 18 inches of existing native soils. New spread foundations to bear on minimum of 18 inches of newly constructed engineered fill
Retaining Walls in Cut Sections	New spread foundations to rest on firm, native soil/bedrock materials or Engineered Fill
Water Storage Tanks	New spread or mat foundations to bear on minimum of 18 inches of Engineered Fill

Additional considerations should be given to building pads that will be established in a bedrock cut-to-fill transition given the relative elevations of proposed and existing grades, and the presence of rock at or above the proposed foundation bearing elevation(s). In order to reduce the potential for differential settlement, the bedrock cut portion of the pad should be over-excavated to a depth of at least 18 inches below the lowest proposed foundation bearing elevation. The maximum difference in depth of fill beneath foundations established across a bedrock cut-to-fill transition pad should not exceed 5 feet.

For these structures, continuous perimeter spread footings should be a minimum of 12 inches wide and embedded a minimum of 18 inches below the lowest final adjacent subgrade[2]. Interior column foundations may be continuous or isolated. Isolated footings should be a minimum of 24 inches wide and embedded a minimum of 18 inches below the lowest final adjacent subgrade. Additionally, we recommend all structures that have interior concrete slabs supported-on-grade be supported on a deepened (minimum 18 inches below the lowest final adjacent subgrade), continuous perimeter foundation to reduce water migration beneath interior floor slabs. An allowable bearing pressure of 2,500 pounds per square foot (psf) may be used for spread and mat foundations with the above minimum dimensions.

The allowable bearing pressure provided above is a net value. Therefore, the weight of the foundation (that extends below grade) may be neglected when computing footing contact pressures. The allowable bearing pressure applies to dead plus live loads, includes a calculated factor of safety of at least 3, and may be increased by ⅓ for short-term loading due to wind or seismic forces.

5.13.2 Estimated Settlements

Total settlement of an individual foundation will vary depending on the plan dimensions of the foundation and the actual load supported. Based on anticipated foundation dimensions and loads, we estimate maximum settlement of foundations designed and constructed in accordance with the preceding recommendations to be on the order of ¾-inch. Differential settlement between similarly loaded, adjacent footings is expected to about one half inch of the total settlement provided footings are founded on similar materials (e.g., all on engineered fill, native soil, or rock). Settlement of all foundations is expected to occur rapidly and should be essentially complete shortly after initial application of the loads.

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[2] *Within this report, subgrade refers to the top surface of undisturbed native soil, native soil compacted during site preparation, or engineered fill.*

5.13.3 Lateral Resistance

Resistance to lateral loads (including those due to wind or seismic forces) may be provided by frictional resistance between the bottom of concrete foundations and the underlying soils, and by passive soil pressure against the sides of the foundations. A coefficient of friction of 0.4 may be used between cast-in-place concrete foundations and the underlying engineered fill or firm native soil/weathered bedrock materials. Passive pressure available in engineered fill or undisturbed firm native soil/weathered bedrock at depth may be taken as equivalent to the pressure exerted by a fluid weighing 375 pounds per cubic foot (pcf). The passive resistance of soils in contact with the foundation should be neglected within the upper one foot, unless the soils are protected by concrete or pavement adjacent to the foundation. Where passive resistance is used for the design, the area within 5 feet of the front of the footing should not be disturbed by excavation or other means.

Lateral resistance parameters provided above are ultimate values. Therefore, a suitable factor of safety should be applied to these values for design purposes. The appropriate factor of safety will depend on the design condition and should be determined by the project Structural Engineer.

5.13.4 Minimum Reinforcement

Foundations should be reinforced at a minimum with two (2) No. 4 reinforcement bars, one near the top and one near the bottom of the footing. Design of reinforcing should be provided by the project structural engineer.

5.13.5 Construction Considerations

Structures located near the top (or bottom) of a cut or fill slope should maintain a minimum set-back in accordance with requirements indicated in Figure No. 1805A.3.1 of the California Building Code (CBC), 2007 edition, or 5 feet (measured horizontally from the top of slope to the closest point of approach of the structure), whichever is greater.

Prior to placing steel or concrete, footing excavations should be cleaned of all debris, loose or soft soil, and water. All footing excavations should be observed by the project Geotechnical Engineer just prior to placing steel or concrete to verify the recommendations contained herein are implemented during construction.

Footings may experience an overall loss in bearing capacity or an increased potential to settle where located in close proximity to existing or future utility trenches. Furthermore, stresses imposed by the footings on the utility lines may cause cracking, collapse and/or a loss of serviceability. To reduce this risk, footings should extend below a 2 horizontal to 1 vertical plane projected upward from the closest bottom corner of the trench.

5.14 RETAINING WALLS

5.14.1 Lateral Earth Pressures

Retaining walls should be deigned to resist the earth pressures exerted by the retained, compacted backfill plus any additional lateral force that will be applied to the wall due to surface loads placed at or near the wall. Walls that are free to deflect at the top may be designed for the active earth pressure. Restrained walls (those that are not free to deflect) should be designed for the at-rest earth pressure. The recommendations and design criteria for retaining walls provided herein may be used for standard cast-in-place concrete gravity or cantilever walls, gravity or geogrid-reinforced-soil walls using modular concrete or masonry facing units, and/or gabion-type gravity walls. Proprietary wall systems using modular block facing elements should be designed to retain soil with a moist unit weight of 120 pounds per cubic foot (pcf) and an internal angle of friction of 30 degrees. The design criteria for retaining walls are presented in Table 5.3 below.

TABLE 5.3: Recommended Lateral Earth Pressures (Ultimate Values) For Walls Up To 20 Feet In Height With Level Backfill Sloping At 6h:1v Or Less

		Equivalent Fluid Density (pcf)
Backfill Configuration	**Earth Pressure**	**Drained**
Level	Active	45
Level	At Rest	65
Level	Passive	375
Surcharge factor = 0.4 x surcharge pressure for active case Surcharge factor = 0.6 x surcharge pressure for at-rest case Sliding friction factor = 0.40		

The above recommended active earth pressure does not include consideration of sloping backfill behind the wall. If a slope with an inclination steeper than 6h:1v will be present behind the wall(s), the recommended equivalent fluid pressure for the active case should be increased to 65 pounds per cubic foot (pcf). The inclination of sloping backfill behind the wall should not be steeper than 2h:1v for a horizontal distance equal to the wall height.

In accordance with Section 1802A.2.7 of the 2007 CBC, retaining should be designed to accommodate an additional lateral earthquake-induced force. Unrestrained walls with level backfill subject to the active earth pressure condition should be designed to accommodate an additional lateral earthquake-induced force of $3.6H^2$ pounds per foot, where H is the retained wall height (Mononobe-Okabe solution). This resultant of the earthquake-induced earth pressure may be assumed to act at a point that is 0.6H above the base of the wall. The additional seismic earth pressure distribution for the wall with level backfill is an inverted triangle with the maximum pressure of 7.2H pounds per square foot at the top of the wall. Unrestrained walls with sloping backfill (2h:1v) subject to the active earth pressure condition should be designed to accommodate an additional lateral earthquake-induced force of $16.2H^2$ pounds per foot, where H is the retained wall height (Mononobe-Okabe solution). This resultant of the earthquake-induced earth pressure may be assumed to act at a point that is 0.6H above the base of the wall. The additional seismic earth pressure distribution for the wall with sloping (2h:1v) backfill is an inverted triangle with the maximum pressure of 32.4H pounds per square foot at the top of the wall. A peak horizontal ground acceleration of 0.169g (DE ground motion), a horizontal seismic coefficient (k_h) of 0.085g (one-half of the DE peak horizontal ground acceleration), and cohesionless wall backfill with a moist unit weight of 120 pounds per cubic foot (pcf) and an internal angle of friction of 30 degrees were used in these analyses. Restrained and basement walls do not need to have an additional seismic earth pressure applied for design.

The above recommended pressures do not include expansive pressures due to expansive soils and assume that the walls will be backfilled with a wedge of "non-expansive" material. The width of this wedge behind the top of the wall should be equal to the height of the wall and may incline downward toward the heel of the wall at a 1(h):1(v) inclination.

Resistance to lateral forces may be computed using a soil-to-concrete sliding friction factor of 0.40. The passive resistance of soils in contact with the wall foundation should be neglected within the upper one foot, unless the soils are protected by concrete or pavement adjacent to the foundation. Where passive resistance is used for the design of retaining walls, the area within 5 feet of the front of the wall footing should not be disturbed by excavation or other means. Passive resistance and sliding friction may be combined provided that the sliding friction component of the total resistance is reduced by 50 percent.

Lateral resistance parameters provided above are ultimate values. Therefore, a suitable factor of safety should be applied to these values for design purposes. The appropriate factor of safety will depend on the design condition and should be determined by the project Structural Engineer.

The above recommended values do not include compaction or equipment-induced wall pressures. Care must be taken during the compaction operations not to overstress the walls. Heavy construction equipment should be maintained a distance of at least 3 feet away from the walls while the backfill soils are being placed. Hand operated compaction equipment should be used to compact the backfill soils within a 3-foot wide zone adjacent to the walls. Kleinfelder should be contacted when development plans are finalized so we can review wall and backfill conditions on a case-by-case basis.

Wall backfill materials should meet the requirements for nonexpansive Engineered Fill presented in this report (see Section 5.11, Engineered Fill).

5.14.2 Wall Drainage

The above recommended lateral earth pressures assume that drainage is provided behind the walls to prevent accumulation of hydrostatic pressures. Wall drainage may be provided by a minimum 12-inch wide zone of free-draining gravel extending to within 1 foot of the ground surface, surrounded by synthetic filter fabric. As an alternate, prefabricated, synthetic drain panels may be used for wall drainage. In either case, drainage should be collected by perforated pipes and directed to a sump, storm drain, weep hole(s), or other suitable location for disposal. Synthetic filter fabric should have an equivalent opening size (EOS), U.S. Standard Sieve, of between 40 and 70, a minimum flow rate of 110 gallons per minute per square foot of fabric, and a minimum puncture strength of 50 pounds.

If wall drainage is not practical for truck loading dock or other retaining walls, the walls should be designed to resist the additional hydrostatic forces that may result from the undrained condition.

5.14.3 Backfill Placement

All backfill should be placed and compacted in accordance with recommendations provided above for engineered fill. Light equipment should be used during backfill compaction to minimize possible overstressing of the wall.

5.14.4 Construction Considerations

Properly compacted retaining wall backfill may experience some settlement or deflection after construction. This is a result of normal deflection of the wall and settling of relatively deep engineered fills. This post-construction "settling in period" will vary with wall type, size, and construction and should be taken into account in overall site design.

5.15 INTERIOR CONCRETE SLABS SUPPORTED-ON-GRADE

5.15.1 Subgrade Preparation

Prior to constructing interior concrete slabs supported-on-grade, surficial soils should be processed as recommended in the SITE PREPARATION and ENGINEERED FILL sections of this report. Scarification and compaction may not be required if floor slabs are to be placed directly on undisturbed engineered fill or native soil compacted during site preparation, and if approved by the project Geotechnical Engineer during construction.

5.15.2 Rock Capillary Break

We recommend interior concrete slabs supported-on-grade be underlain by a capillary break to reduce the potential for soil moisture migrating upwards toward the slab. This capillary break should consist of compacted, free-draining crushed rock at least 4 inches thick, graded so that 100 percent passes the 1-inch sieve and less than 5 percent passes the No. 4 sieve. In general, Caltrans Class 2 aggregate base or similar materials do not meet the above recommendations and should not be used to underlay interior concrete slabs supported-on-grade.

A capillary break may neither be desired nor required for some types of construction (such as warehouses, equipment buildings, garages, and other non-habitable structures). For these types of structures, the gravel capillary break recommended above may be omitted and the slab placed directly on the prepared subgrade or other approved surface (i.e., it may be desirable to place aggregate base beneath floor slabs subjected to forklift or vehicle traffic). Such a design should allow for damp or wet spots to develop on the floor slab since subsurface moisture and water vapor are more likely to penetrate the floor slab in such cases. In the event omission of the capillary break is considered, we recommend Kleinfelder review the planned structure in order to assess the applicability of the approach and provide (if necessary) additional recommendations regarding subgrade preparation and/or slab support.

5.15.3 Interior Concrete Slabs-On-Grade Construction Considerations

Subsurface moisture and moisture vapor naturally migrate upward through the soil and, where the soil is covered by a building or pavement, this subsurface moisture will collect. To reduce the impact of this subsurface moisture and the potential impact of introduced moisture (such as landscape irrigation or plumbing leaks) the current industry standard is to place a vapor retarder on the compacted crushed rock layer (described above). This membrane typically consists of a polyethylene or polyolefin membrane that conforms to ASTM Standard E1745-97. It should be noted that although capillary break and vapor retarder systems are commonly used in the area, this system may not be completely effective in preventing floor slab moisture problems. These systems will not "moisture proof" the floor slab nor will it assure floor slab moisture transmission rates will meet floor-covering manufacturer standards. The design and construction of such systems are dependent on the proposed use and design of the proposed building and all elements of building design and function should be considered in the slab-on-grade floor design. Building design and construction may have a greater role in perceived moisture problems since sealed buildings/rooms or inadequate ventilation may result in excessive moisture in a building and affect indoor air quality.

Various factors such as surface grades, adjacent planters, the quality of slab concrete, and the permeability of the on-site soils affect slab moisture control performance. In many cases, perceived floor moisture problems are the result of improper curing of floor slabs and flooring adhesives, not excessive slab moisture transmission. We recommend contacting a flooring consultant experienced in the area of concrete slab-on-grade floors for specific recommendations regarding your proposed flooring applications.

Special precautions must be taken during the placement and curing of all concrete slabs. Excessive slump (high water-cement ratio) of the concrete and/or improper curing procedures used during either hot or cold weather conditions could lead to excessive shrinkage, cracking, or curling in the slabs. High water-cement ratio and/or improper curing also greatly increase the water vapor permeability of concrete. We recommend that all concrete placement and curing operations be performed in accordance with the American Concrete Institute (ACI) Manual.

It is emphasized that we are not concrete slab-on-grade floor moisture proofing experts. We make no guarantee nor provide any assurance that use of the capillary break/vapor retarder system will reduce concrete slab-on-grade floor moisture penetration to any specific rate or level, particularly those required by floor covering manufacturers. The builder and designers should consider all available measures for slab moisture protection.

5.16 MOISTURE PROTECTION

Foundation and slab performance depends greatly on how well runoff waters drain from the site. This drainage should be maintained both during construction and over the entire life of the project. The ground surface around structures should be graded so that water flows rapidly away from structures without ponding. The surface gradient needed to do this depends on the landscaping type. In general, pavement and lawns within five feet of buildings should slope away at gradients of at least two percent. Densely vegetated areas should have minimum gradients of 5 percent away from buildings in the first five feet if it is practical to do so.

We recommend all structures which have interior concrete slabs supported-on-grade be supported on a deepened (minimum 18 inches below the lowest final adjacent subgrade or to a depth of at least 2 inches below the top of the building pad subgrade), continuous perimeter foundation to reduce water migration beneath interior floor slabs. We recommend that perimeter footings be placed in one continuous operation. This will prevent the forming of a cold joint in the footing that can be a pathway for water to infiltrate beneath the slab-on-grade floor slab. In areas where this is not practical (i.e. at column footing locations) a water stop should be incorporated into foundation design.

Planters should be built so that water exiting from them will not seep into the foundation areas or beneath slabs and pavement. In general, the elevation of exterior grades should not be higher than the elevation of the subgrade beneath the slab to help prevent water intrusion beneath slabs. In any event, maintenance personnel should be instructed to limit irrigation to the minimum actually necessary to properly sustain landscaping plants. Should excessive irrigation, waterline breaks, or unusually high rainfall occur, saturated zones and "perched" groundwater may develop. Consequently, the site should be graded so that water drains away readily without saturating the foundation or landscaped areas. Potential sources of water, such as water pipes, drains, swimming pools, garden ponds, and the like, should be frequently examined for signs of leakage or damage. Any such leakage or damage should be promptly repaired.

All utility trenches should be backfilled with compacted non-pervious fill material. Special care should be taken during installation of sub-floor water and sewer lines to reduce the possibility of leaks.

5.17 EXTERIOR CONCRETE SLABS SUPPORTED-ON-GRADE

5.17.1 Subgrade Preparation

Prior to constructing exterior concrete slabs supported-on-grade[3] surficial soils should prepared as recommended above in the SITE PREPARATION and ENGINEERED FILL sections of this report. Scarification and compaction may not be required if exterior slabs are to be placed directly on undisturbed engineered fill or native soil compacted during site preparation, or within earthwork cut areas consisting of rock and if approved by the project Geotechnical Engineer during construction. Where flatwork will support vehicular traffic, we recommend that the flatwork be designed as a pavement.

Once the slab subgrade soil has been moisture conditioned and compacted, the soil should not be allowed to dry prior to concrete placement. If the subgrade soil is allowed to dry, the moisture content of the soil should be restored by sprinkling or wetting prior to placement of concrete. Kleinfelder should check the moisture content of the subgrade soil prior to construction of the slabs.

Proper moisture conditioning and compaction of subgrade soils is important. Even with proper site preparation, we anticipate that over time there will be some soil moisture change on the subgrade soil supporting the concrete flatwork. For example, exterior flatwork will be subjected to edge effects (shrink-swell) due to the drying out or wetting of subgrade soils where adjacent to landscaped or vacant

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[3] *Within this report exterior concrete slab supported-on-grade refers to walkways, driveways, patios, etc. and specifically excludes roadway pavements.*

areas. To help reduce edge effects, lateral cutoffs such as an inverted curb are suggested. Control joints should be also used to reduce the potential for flatwork panel cracks as a result of minor soil shrink-swell. Steel reinforcement will aid in keeping the control joints and other cracks closed.

Exterior concrete slabs-on-grade should be cast free from adjacent footings or other rigid edge restraints. This may be accomplished by using a strip of 1/2-inch asphalt-impregnated felt material between the slab edges and the adjacent structure.

5.18 PAVEMENTS

5.18.1 General

Three resistance value (R-value) tests were performed on representative samples of anticipated pavement subgrade materials encountered at the site. Laboratory R-values of 24, less than 5, and 32 were obtained on samples from Test Pits TP-7, TP-15, and TP-20, respectively. Based on the subsurface conditions encountered and the test results, a somewhat conservative R-value of 5 was used for design of pavements at the site.

5.18.2 Asphalt Concrete Pavement Sections

Pavement sections presented in Table 5.4 below are based on a design subgrade R-value of 5 and current Caltrans design procedures. Traffic indices of 4.5, 5.5, and 6.5 were assumed for the design of automobile parking areas, automobile driveways/access ways, and truck driveways/access ways, respectively. These traffic indices and our pavement section design analyses do not include consideration of repeated heavy truck or equipment traffic loads (i.e., heavily-loaded lumber trucks, equipment/machinery delivery/service trucks, and/or heavy wheeled equipment including cranes, forklifts, etc.). The traffic indices and vehicle loading conditions assumed above should be reviewed by the project Owner, Architect, and/or Civil Engineer to evaluate their suitability for this project. Changes in the traffic indices and/or vehicle loading conditions will affect the corresponding pavement section and may require further analysis. Additional recommendations regarding pavement design for areas subjected to heavy truck or equipment traffic loads may be provided at a later date, upon request.

Table 5.4 Recommended Asphalt Concrete Pavement Sections[4]

Pavement Description	Assumed Traffic Indices	Asphalt Concrete		Aggregate Base	
		(feet)	(inches)	(feet)	(inches)
Automobile Parking Areas	4.5	0.25 Or 0.20	3.0 Or 2.5	0.70 Or 0.75	8.0 Or 9.0
Automobile Driveways/Access Ways	5.5	0.25 Or 0.30	3.0 Or 3.5	1.00 Or 0.90	12.0 Or 11.0
Heavy Truck Driveways/Access Ways	6.5	0.30 Or 0.35	3.5 Or 4.0	1.25 Or 1.20	15.0 Or 14.0

Pavement sections provided above are contingent on the following recommendations being implemented during construction.

- All pavement subgrades should be prepared as recommended in the SITE PREPARATION and ENGINEERED FILL sections of this report.
- Subgrade soils should be in a stable, non-pumping condition at the time aggregate base materials are placed and compacted.
- Aggregate base materials should be compacted to at least 95 percent relative compaction.
- Adequate drainage (both surface and subsurface) should be provided such that the subgrade soils and aggregate base materials are not allowed to become wet.
- Aggregate base materials should meet current Caltrans specifications for Class 2 aggregate baserock.
- Asphalt paving materials and placement methods should meet current Caltrans specifications for asphalt concrete.
- All concrete curbs separating pavement and landscaped areas should extend into the subgrade and below the bottom of adjacent, aggregate base materials.

[4] *Caltrans design procedures for asphalt concrete pavements provide sections in units of feet, rounded to the nearest 0.05 feet. We have also provided sections in units of inches, rounded to the nearest 1/2-inch. Sections provided above include a Gravel Equivalent Safety Factor of 0.2 (as recommended by Caltrans).*

5.18.3 Portland Cement Concrete Pavement Sections

Portland cement concrete pavements are typically better able to resist the intense stresses induced in pavements by the turning motions of vehicles - particularly delivery and garbage trucks. Concrete pavements should be used in areas frequented by such vehicles as well as in driveway and entry aprons. Concrete pavement sections presented in Table 5.5 below are based on current Portland Cement Association (PCA) design procedures and the assumptions listed below. These assumptions should be reviewed by the project Owner, Architect, and/or Civil Engineer to evaluate their suitability for this project. Changes in the assumptions will affect the corresponding pavement section.

- Modulus of subgrade reaction = 100 psi/in
- Modulus of rupture of concrete = 600 psi
- Aggregate Interlock Joints
- No concrete shoulders
- 30-year design life
- Load Safety Factor = 1.0

Table 5.5: Recommended Portland Cement Concrete Pavement Sections[5]

Proposed Use	Assumed Traffic Indices	Portland Cement Concrete		Aggregate Base	
		(feet)	(inches)	(feet)	(inches)
Main Drive Aisles/Light Truck Traffic	5.5	0.40	5.0	0.90	11.0
Truck Lanes and Access ways	6.5	0.50	6.0	0.90	11.0

Portland cement concrete pavement sections provided above are contingent on the following recommendations being implemented during construction.

[5] *Caltrans design procedures for asphalt concrete pavements provide sections in units of feet, rounded to the nearest 0.05 feet. We have also provided sections in units of inches, rounded to the nearest 1/2-inch. Sections provided above include a Gravel Equivalent Safety Factor of 0.2 (as recommended by Caltrans).*

- All pavement subgrades should be prepared as recommended in the SITE PREPARATION and ENGINEERED FILL sections of this report.
- Adequate drainage (both surface and subsurface) should be provided such that the subgrade soils are not allowed to become wet.
- Concrete pavement should have a minimum 28 day compressive strength of 4,000 psi. Concrete slumps should be from 3 to 4 inches. The concrete should be properly cured in accordance with PCA recommended procedures and vehicular traffic should not be allowed for 3 days (automobile traffic) or 7 days (truck traffic).
- To help offset plastic shrinkage, concrete pavement may be reinforced with at least No. 3 bars, 24 inches on-center, each way or 6x6-W2.9xW2.9 wire mesh (located ⅓ of the slab thickness from the top of the slab).
- Construction and/or control joint spacing should not exceed 12 feet.
- Thickened edges should be used along outside edges of concrete pavements. Edge thickness should be at least 2 inches greater than the concrete pavement thickness and taper to the actual concrete pavement thickness 36 inches inward from the edge. Integral curbs may be used in lieu of thickened edges.
- Overfinishing of concrete pavements should be avoided. Typically, a broom or burlap drag finish should be used.

The above pavement recommendations should be incorporated into project plans and specifications by the project architect and/or engineer. These recommendations are not intended to be used as a specification for construction.

5.18.4 Unstable Subgrade

In the event unstable (pumping) subgrades are encountered within planned pavement areas, we recommend a heavy, rubber-tired vehicle (typically a loaded water truck) be used to test the load/deflection characteristics of the finished subgrade materials. We recommend this vehicle have a minimum rear axle load (at the time of testing) of 16,000 pounds with tires inflated to at least 65 pounds per square inch pressure. If the tested surface shows a visible deflection extending more than 6 inches from the wheel track at the time of loading, or a visible crack remains after loading, corrective measures should be implemented. Such measures could include disking to aerate, chemical treatment, replacement with drier material, or other methods. We recommend Kleinfelder be retained to assist in developing which method (or methods) would be applicable for this project.

5.18.5 Variations in Subgrade Materials

Pavement sections provided above are based on the soil conditions encountered during our field investigation, our assumptions regarding final site grades, and limited laboratory testing. In the event actual pavement subgrade materials are significantly different than those tested for this study, we recommend representative subgrade samples be obtained and additional R-value tests performed. Should the results of these tests indicate a significant difference, the design pavement section(s) provided above may need to be revised.

5.18.6 Drainage Considerations

Drainage of pavements is critical to the proper functioning of the pavement section and obtaining the full design life from the pavement. All grades should be designed to achieve rapid runoff and removal of surface water from pavements and adjacent landscaping.

The use of permeable pavements where pavements will overlie relatively poorly draining subsurface soils (i.e. clay or cemented soils) is discouraged. Over time water infiltrating through the permeable pavement will collect on the poorly draining subgrade. This can result is softening of the subgrade and saturation of the aggregate base layer which can lead to premature pavement failure.

6 ADDITIONAL SERVICES

6.1 PLANS AND SPECIFICATIONS REVIEW

We recommend Kleinfelder be provided an opportunity to conduct a general review of final plans and specifications to evaluate that our earthwork and foundation recommendations have been properly interpreted and implemented during design. In the event Kleinfelder is not retained to perform this recommended review, we will assume no responsibility for misinterpretation of our recommendations.

6.2 CONSTRUCTION OBSERVATION AND TESTING

We recommend that all earthwork during construction be monitored by a representative from Kleinfelder, including site preparation, placement of all engineered fill and trench backfill, construction of slab and roadway subgrades, and all foundation excavations. The purpose of these services would be to provide Kleinfelder the opportunity to observe the soil conditions encountered during construction, evaluate the applicability of the recommendations presented in this report to the soil conditions encountered, and recommend appropriate changes in design or construction procedures if conditions differ from those described herein.

7 LIMITATIONS

Recommendations contained in this report are based on our field observations and subsurface explorations, limited laboratory tests, and our present knowledge of the proposed construction. It is possible that soil or rock conditions could vary between or beyond the points explored. If soil or rock conditions which differ from those described herein are encountered during construction, we should be notified immediately in order that a review may be made and any supplemental recommendations provided. If the scope of the proposed construction, including the proposed site grading, structural loads or structural locations, changes from that described in this report, our recommendations should also be reviewed.

We have prepared this report in substantial accordance with the generally accepted engineering geology and geotechnical engineering practices as they exist in the site area at the time of our study. No warranty either expressed or implied is made. The recommendations provided in this report are based on the assumption that an adequate program of tests and observations will be conducted by Kleinfelder during the construction phase in order to evaluate compliance with our recommendations herein.

This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both on site and off site) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify Kleinfelder of such intended use. Based on the intended use of the report, Kleinfelder may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party.

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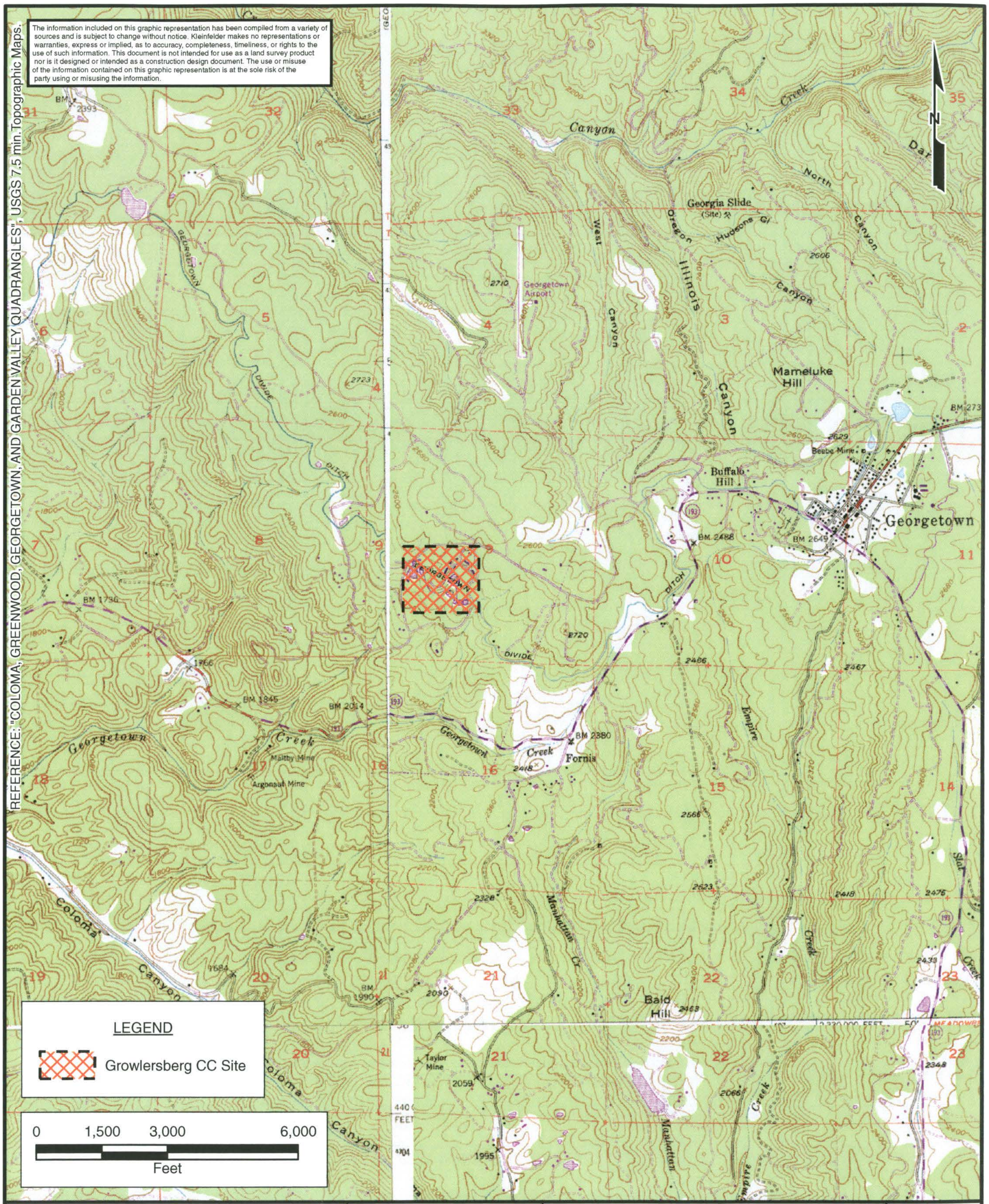

KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO. 96004 DRAWN: 8/11/08 DRAWN BY: D. Anderson CHECKED BY: C. White FILE NAME: Gb CDF Fac Site.mxd	**SITE LOCATION MAP** CAL FIRE GROWLERSBERG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	PLATE 1

New Water Storage Tanks
TP-1
SL-4
New Building B-Inmate Recreation and Hobby Barn
New Building D-Inmate Barracks
TP-6
TP-7
New CMU Retaining Wall
TP-5
New Sport Court
SL-3
TP-2
TP-4
TP-8
TP-9
KB-1
New Parking Lot 5
TP-10
TP-3
New Building L-Mess Hall and Kitchen
New CMU Retaining Wall
New Building A-Administration and Multi-Purpose
Pzcv
B
A'
New CMU Retaining Wall
KB-5
KB-3
C
af
af
Existing Parking Lot 1
Pzcv
(Possible) Temporary Recreation Building
New Building K-Staging Restroom
New Building G-Pole Barn
New Building F-Sawmill Planer Assembly
KB-8
TP-13
TP-12
New Building J1-Fire Pump Electrical Equipment
New Parking Lot 4
KB-4
New Fuel Tank and Generator Pad
af
KB-6
New Keystone Landscape Walls
Existing 4 Bay Garage
KB-7
af
KB-2
New Building F-Sawmill Shed
Existing 4 Bay Garage
KB-9
TP-11
Existing Visitor Parking Lot 2
TP-14
Existing Utility Building
New CMU Retaining Wall
SL-2
Pzcv
New Building M-Warehouse
TP-15
TP-21
C'
TP-25
TP-19
New Building H-Cabinet Shop
Pzcv
af
Existing Garage
New Building O-Garage Wash Rack and Filtration
TP-18
SL-1
TP-17
TP-20
TP-16
TP-22
TP-23
New Building L-Auto Shop / Garage
B'
New Propane Tank Pad
TP-24
New CMU Retaining Wall
New Building J2-Storage Shed
S00°40'55"W
1356.21'
S89°36'01"E
732.35'
New Parking Lot 3
New Building N-Officers Barracks
New CMU Retaining Wall
LEGEND
TP-1 - Approximate Test Pit Location
KB-3 - Approximate Test Boring Location
SL-1 - Approximate Seismic Refraction Survey Line Location
A A' - Cross-Section Line Location (See Plate 9)
af - Artificial Fill
Pzcv - Calaveras Complex Metavolcanic rock with residual soil of variable depths
- Proposed Construction
- Existing Construction
N
50 0 25 50 100
APPROXIMATE SCALE: 1 inch = 50 feet
PLOTTED: 12 Dec 2008, 11:20am, rhills
LAYOUT: Layout2
CAD FILE: L:\2008\Projects\96004\CAD\
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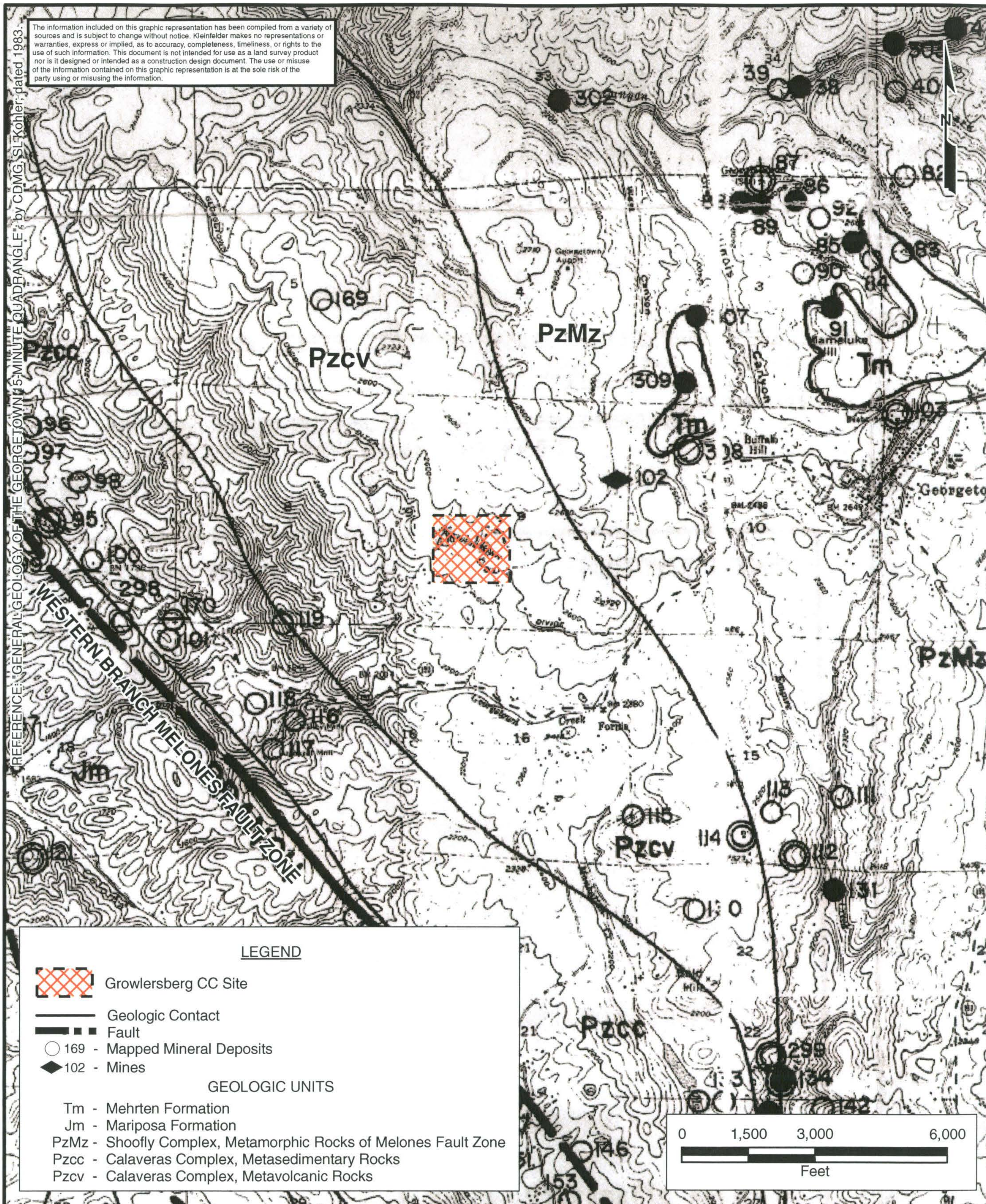
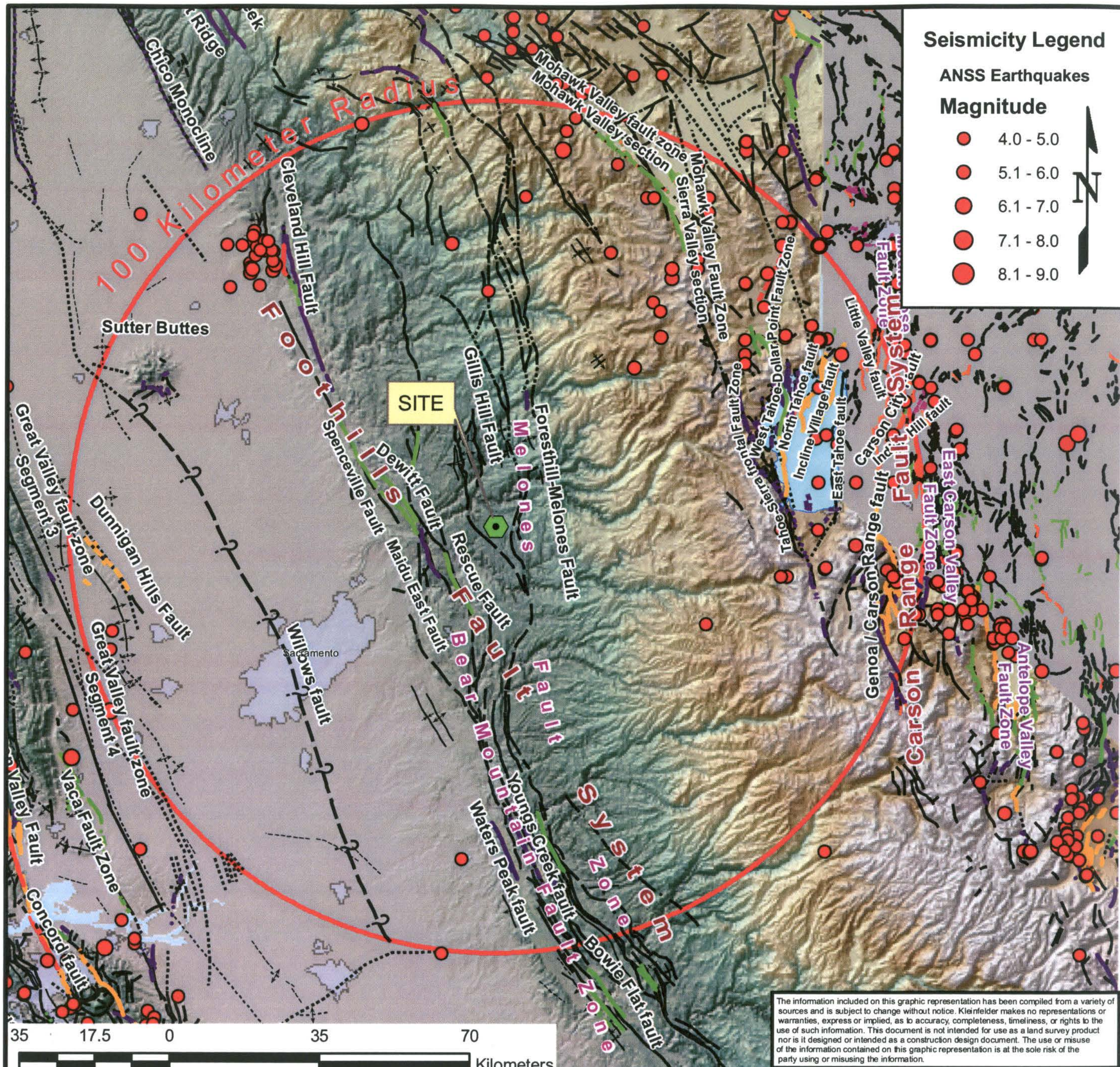
PROJECT NO. 96004
DRAWN: 12/11/2008
DRAWN BY: RLH
CHECKED BY: CAW
FILE NAME: Site Plan-1.dwg
SITE PLAN, SITE GEOLOGY, AND EXPLORATION LOCATION MAP
CAL FIRE GROWLERSBERG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA
PLATE
2



KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO. 96004 DRAWN: 8/11/08 DRAWN BY: D. Anderson CHECKED BY: C. White FILE NAME: Gb CDF Fac Geo.mxd	**REGIONAL GEOLOGIC MAP** CAL FIRE GROWLERSBERG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	PLATE **3**



Faulting Legend

Quaternary Faults (Bryant, 2005; USGS, 2007)

Historic displacement (< 200 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Holocene displacement (< 11,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Late Quaternary displacement (< 750,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Quaternary displacement (< 1,600,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Pre-Quaternary Geologic Structures (CGS, 2000)
- fault, approx. located
- ? fault, approx. located, queried
- fault, certain
- fault, concealed
- fault, concealed, queried
- fault, inferred, queried

Source:
Seismicity - Compiled ANSS Database

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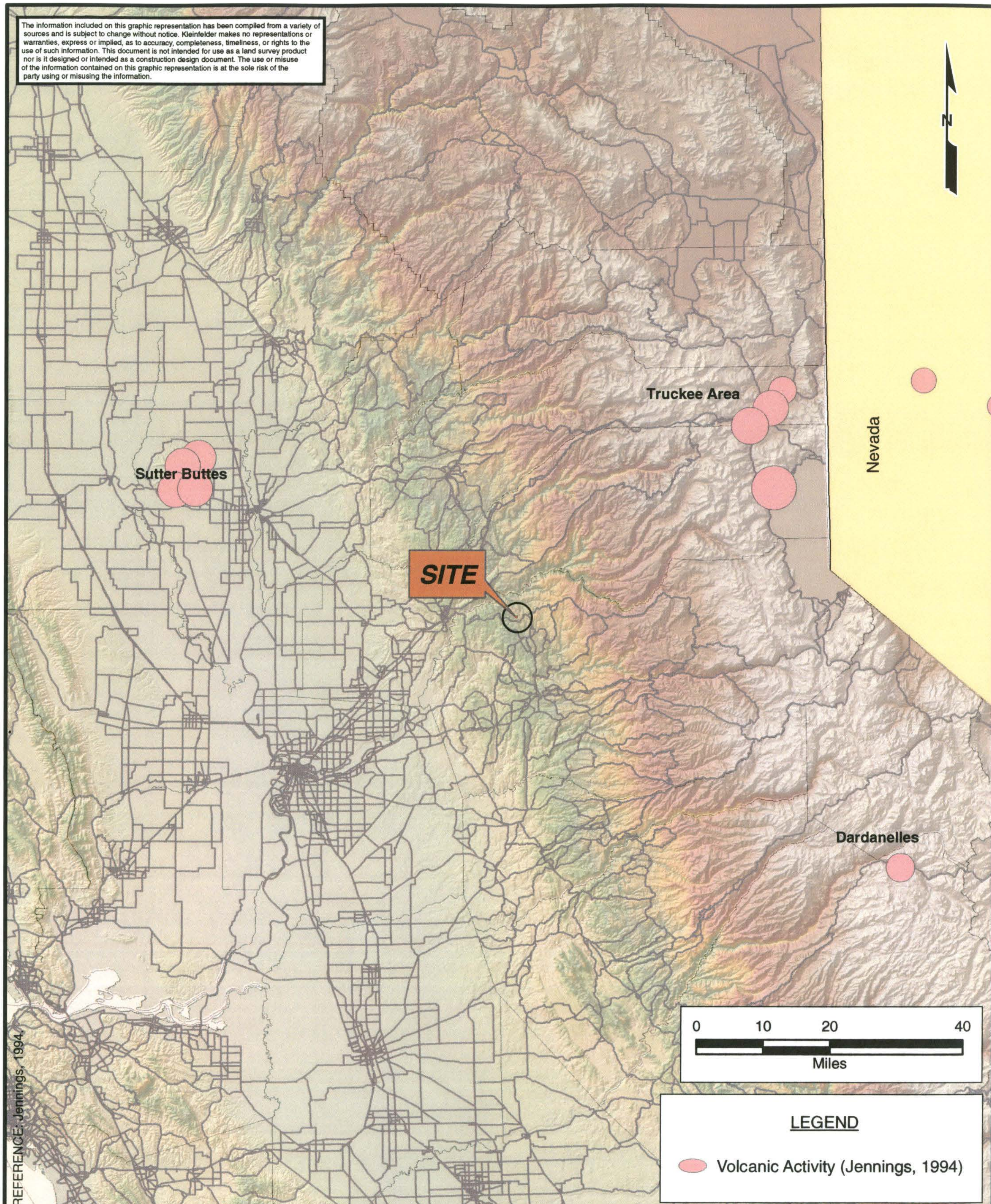
PROJECT NO.	92826
DRAWN:	11/25/08
DRAWN BY:	I.McGovern
CHECKED BY:	B.Anderson
FILE NAME: 92826.MXD	

REGIONAL FAULTING AND SEISMICITY 1898 - OCTOBER 2008

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
4



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PROJECT NO.	96004
DRAWN:	9/18/08
DRAWN BY:	D. Anderson
CHECKED BY:	B. Anderson
FILE NAME:	GwlrsbCDF Fac Volcanics.mxd

RECENT REGIONAL VOLCANIC ACTIVITY MAP

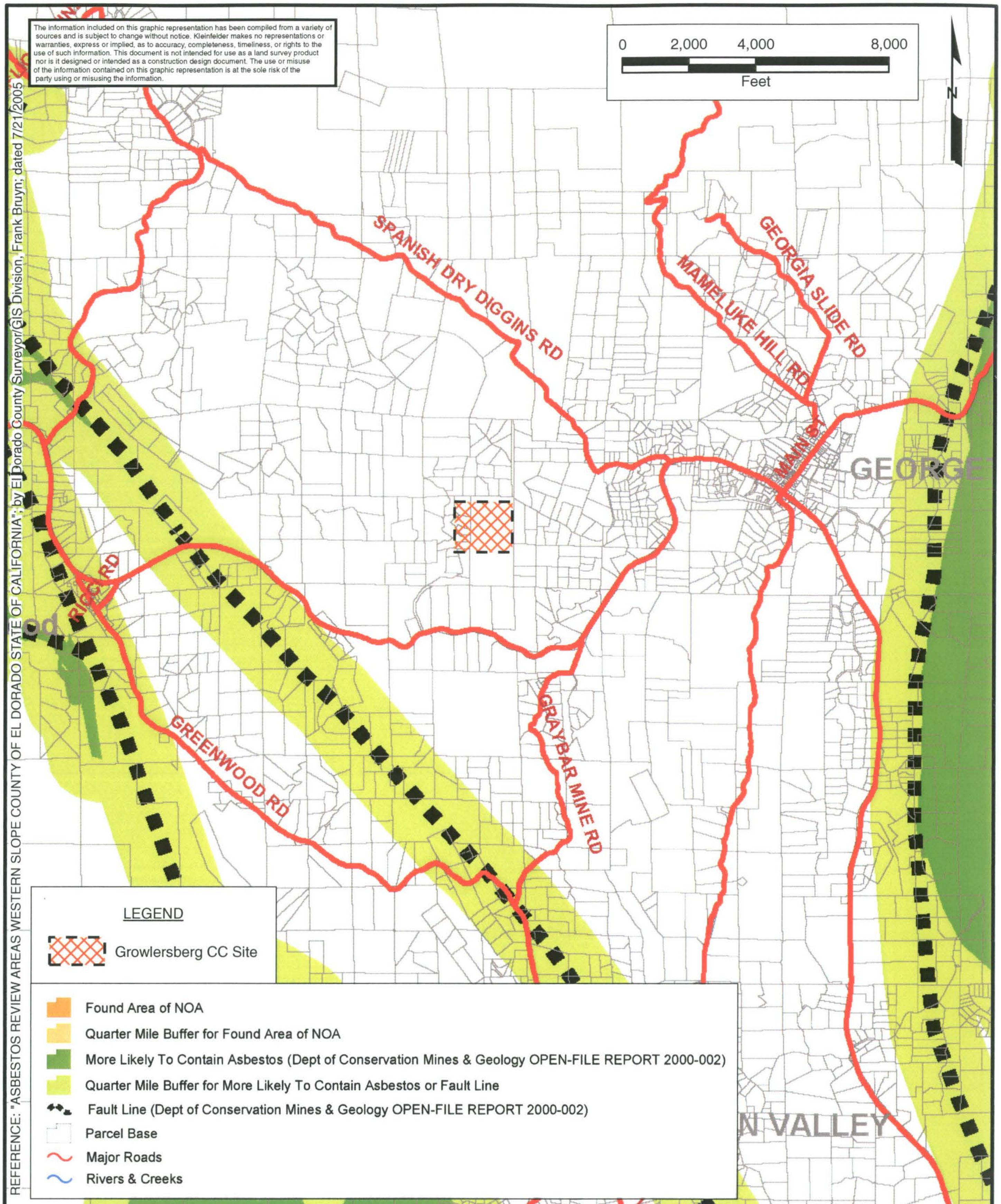
CAL FIRE
GROWLERSBERG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE

5

REFERENCE: FEMA, Q3 (1999), AND GARDEN VALLEY, COLOMA, GREENWOOD, & GEORGETOWN QUADRANGLES; 7.5 min USGSTopographic Maps (all 1973).

KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO. 96004	**FEMA FLOOD ZONE MAP**	PLATE
	DRAWN: 8/11/08		
	DRAWN BY: D. Anderson		**6**
	CHECKED BY: C. White	CAL FIRE GROWLERSBERG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	
	FILE NAME: Gb CDF Fac FEMA.mxd		



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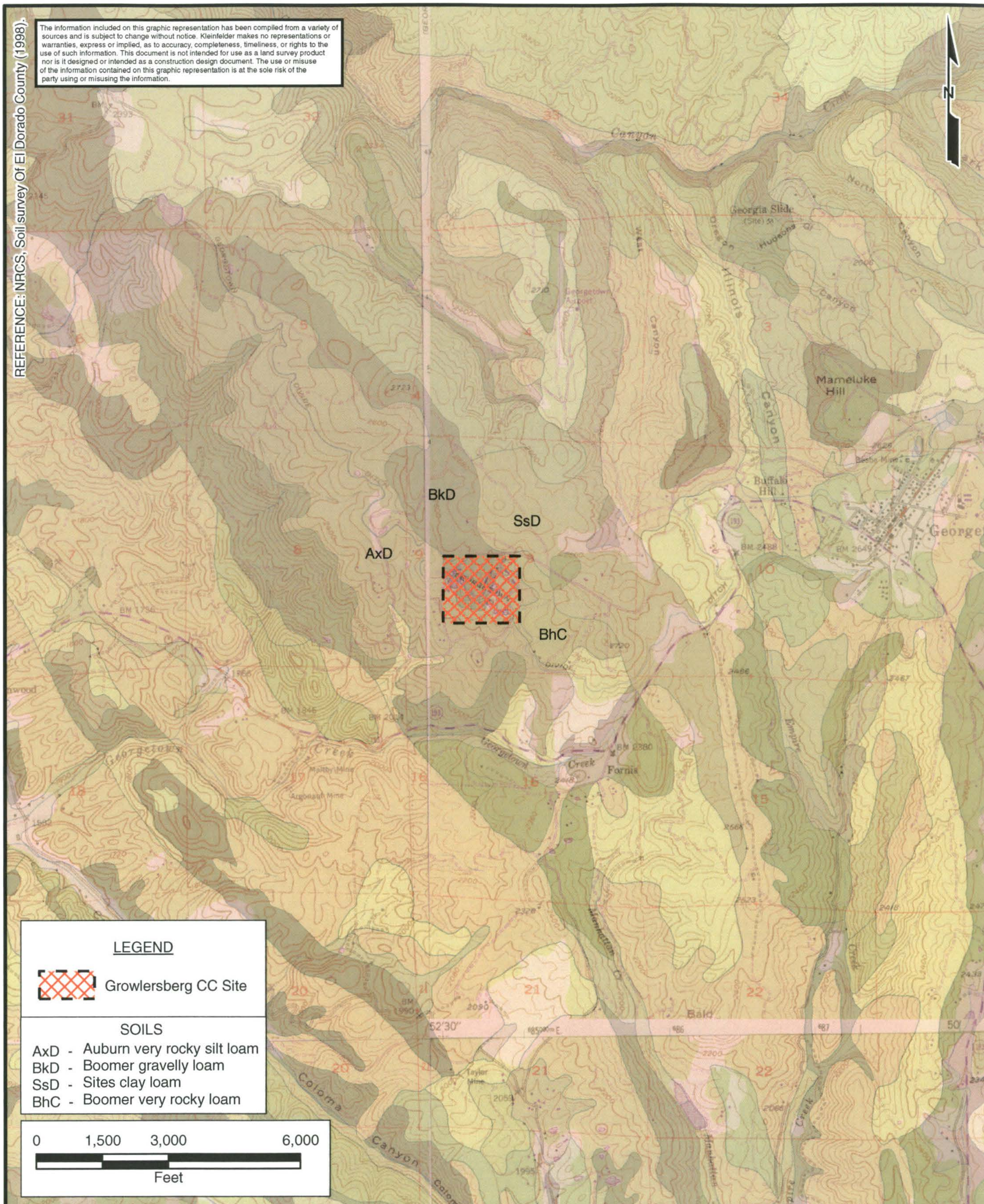
PROJECT NO.	96004	NATURALLY OCCURING ASBESTOS MAP	PLATE
DRAWN:	8/11/08		
DRAWN BY:	D. Anderson		7
CHECKED BY:	C. White	CAL FIRE GROWLERSBERG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	
FILE NAME:	Gb CDF Fac NOA.mxd		



PROJECT NO.	96004
DRAWN:	8/11/08
DRAWN BY:	D. Anderson
CHECKED BY:	C. White
FILE NAME:	Gb CDF Fac Soils.mxd

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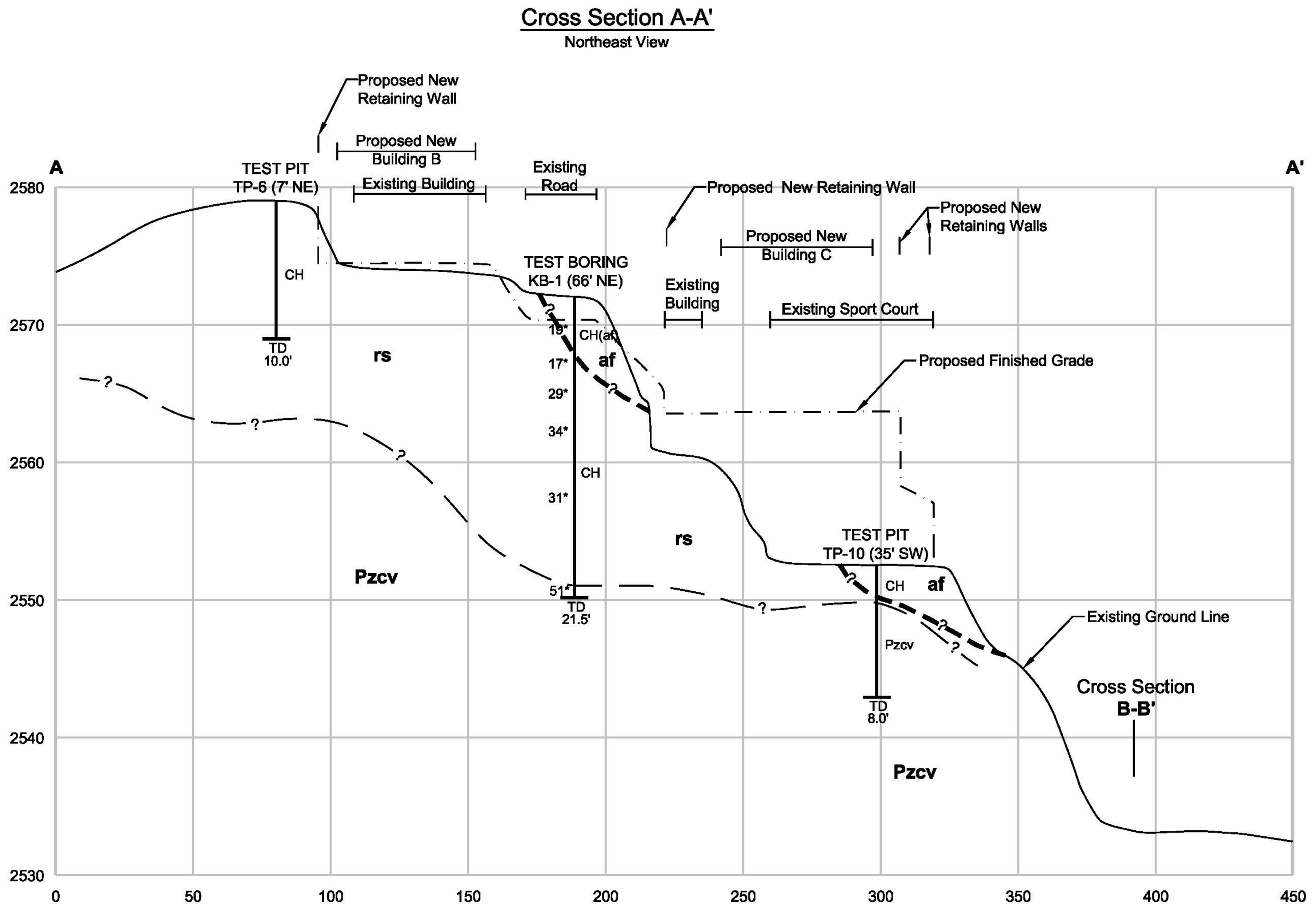
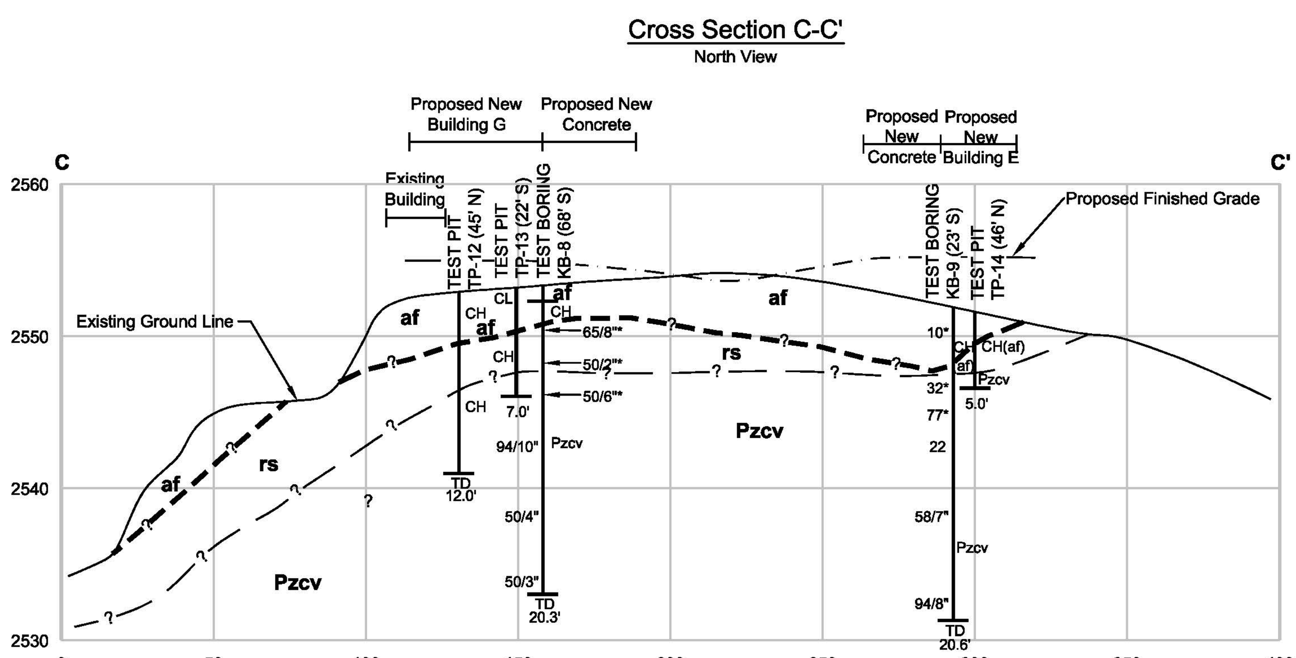
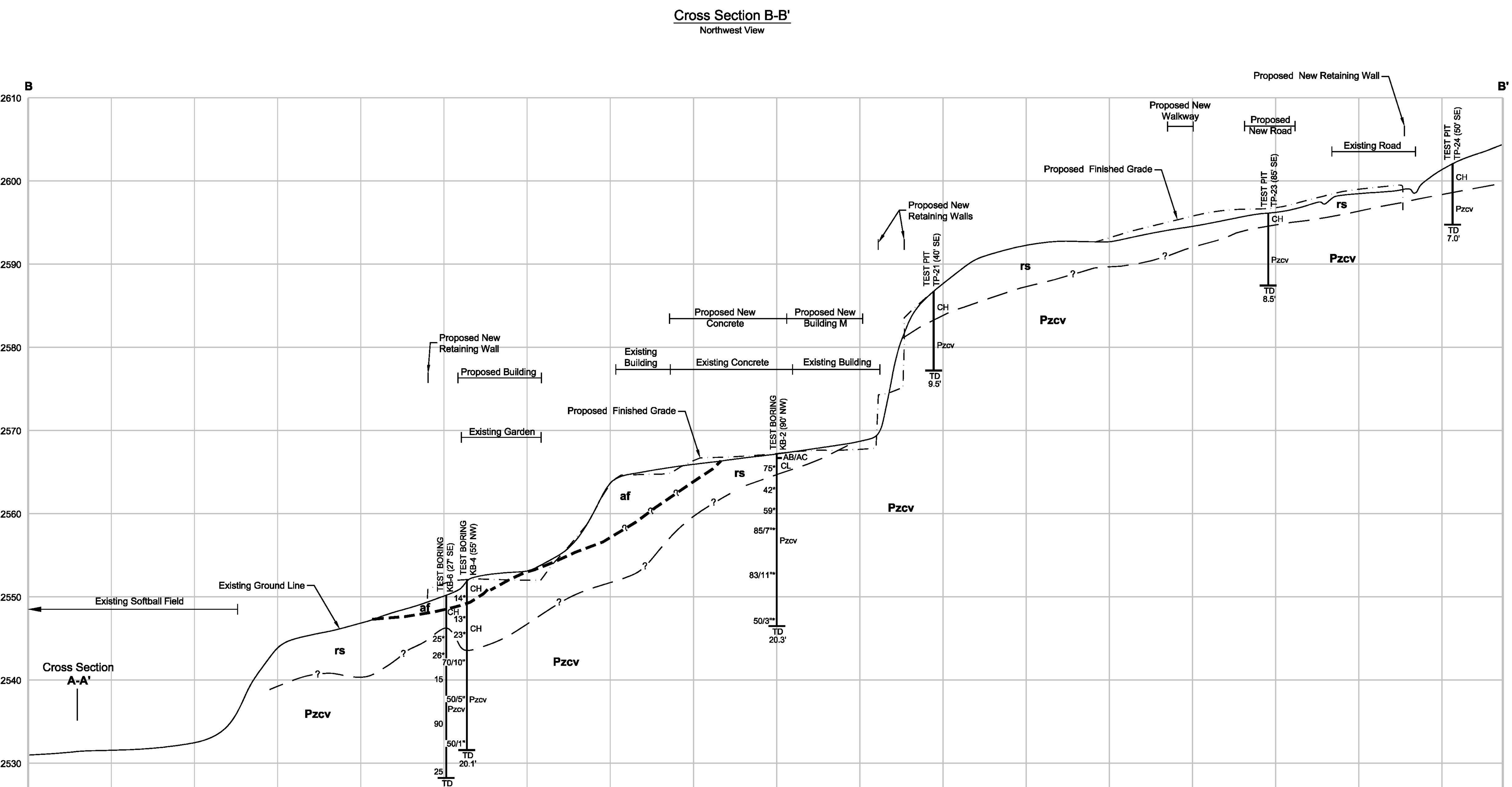
NRCS SOILS MAP

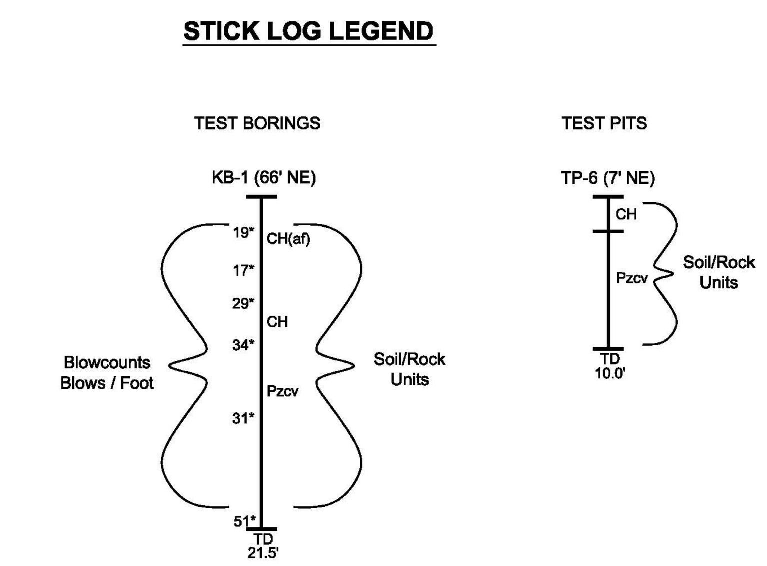
CAL FIRE GROWLERSBERG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
8









NOTE: * Indicates Blow Counts Measured using 3 inch Outer Diameter California Sampler; Otherwise Blow Counts Measured by 2 inch Outer Diameter SPT Sampler

EXPLANATION

af - Fill

rs - Residual Soil

Pzcv - Calaveras Complex Metavolcanic Bedrock

- - - - Fill contact (? where queried)

— — Geologic contact (? where queried)

– – – Proposed Finished Grade (Received from Warren Consulting Engineers 9/24/2008)

~ - Existing Ground

VERTICAL SCALE: 1 inch = 10 ft.

HORIZONTAL SCALE: 1 inch = 50 ft.

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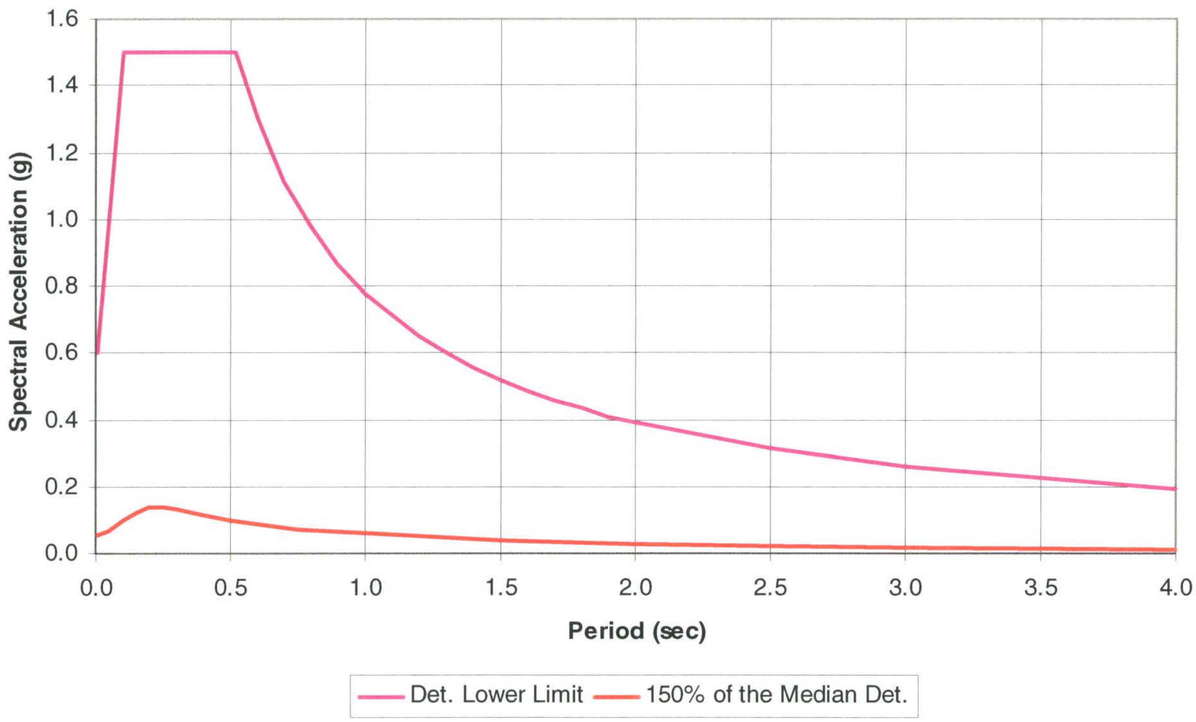
PROJECT NO.	96004
DRAWN:	12/12/2008
DRAWN BY:	BSVD/RLH
CHECKED BY:	CAW
FILE NAME:	96004_cross.dwg

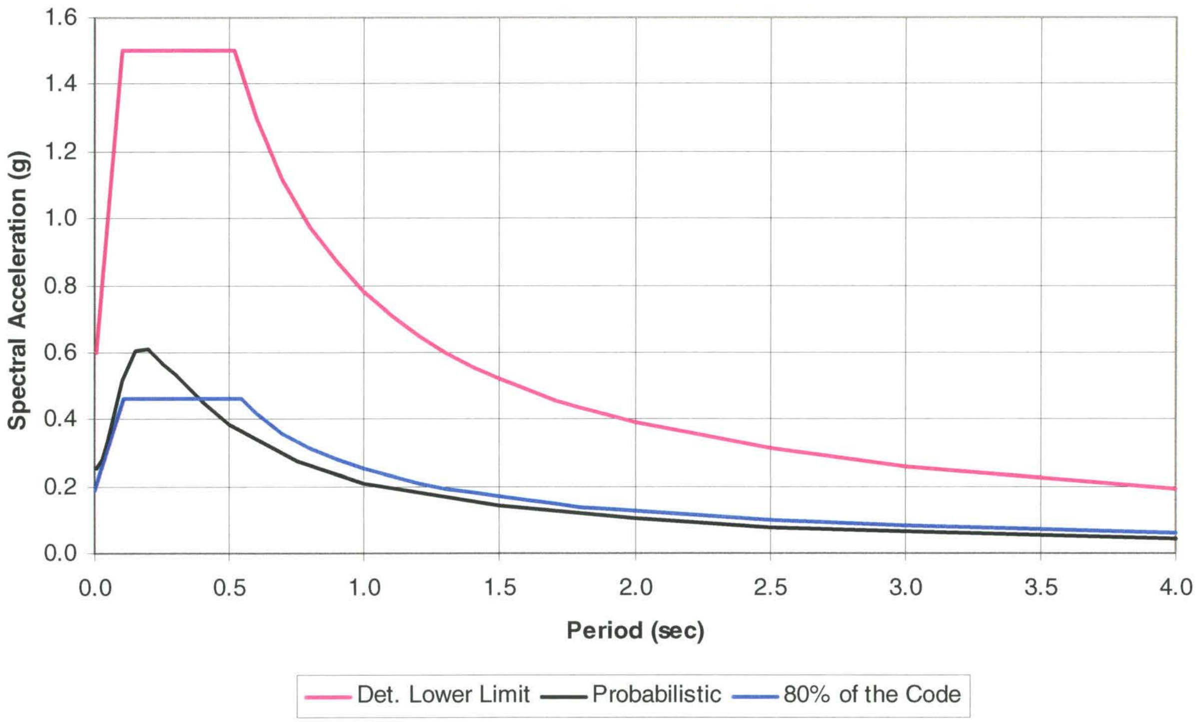
CROSS SECTION A-A', B-B', AND C-C'

CAL FIRE GROWLERSBERG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
9



KLEINFELDER *Bright People. Right Solutions.* 3077 Fite Circle Sacramento, CA 95827-1815 Phone: (916) 366-1701 Fax: (916) 366-7013 www.kleinfelder.com		**DETERMINISTIC SPECTRA COMPARISON 5% DAMPING** Cal Fire Growlersburg Conservation Camp Proposed Facility Remodel Georgetown, California	**DRAWN BY: E. ORTAKCI** **REVISED BY:** **CHECKED BY: Z. ZAFIR** PLATE **10**
DRAWN: August 2008	**APPROVED BY_______**	**PROJECT NO. 96004**	



KLEINFELDER Bright People. Right Solutions. 3077 Fite Circle Sacramento, CA 95827-1815 Phone: (916) 366-1701 Fax: (916) 366-7013 www.kleinfelder.com	**SPECTRA COMPARISON MCE 5% DAMPING** Cal Fire Growlersburg Conservation Camp Proposed Facility Remodel Georgetown, California	**DRAWN BY: E. ORTAKCI** **REVISED BY:** **CHECKED BY: Z. ZAFIR**
DRAWN: August 2008 **APPROVED BY______**	**PROJECT NO. 96004**	PLATE **11**

APPENDIX A
FIELD INVESTIGATION

FIELD INVESTIGATION

General

The subsurface conditions at the site were explored August 11, 2008 through August 12, 2008 by digging 25 test pits to depths of 1 foot to 12 feet below existing grade; August 25, 2008 through August 26, 2008 by drilling 9 borings to depths of 11 to 21.5 feet below existing grade; and August 28, 2008 by performing 4 seismic refraction surveys. The test pits were excavated using a rubber-tired backhoe equipped with 30-inch wide bucket, and the test borings were drilled using a CME 75 truck-mounted drill rig advancing 8-inch outside diameter, continuous flight hollow-stem auger. Seismic refraction surveys were performed using a Geometrics SmartSeis 12-channel, 32 bit digital stacking seismograph and twelve 14 Hz geophones, and are further discussed in Appendix C. Subsurface conditions encountered in these explorations were used to characterize the subsurface conditions beneath the project site and were utilized in the liquefaction analysis. The locations of the test pits, test borings, and seismic refraction survey lines performed for this investigation are shown on Plate 2 of the report.

Test pits, test borings, and seismic refraction survey lines were located in the field by visual sighting and/or pacing from existing site features. Therefore, the location of exploration locations shown on Plate 2 should be considered approximate and may vary from that indicated on the plate.

Our geologist maintained logs of the borings, visually classified soils and rock encountered according to the Unified Soil Classification System (see Plate A-1) and Kleinfelder's Rock Classification Chart (Plate A-2) using relatively undisturbed samples of the subsurface materials. A key to the Logs of Borings and Test Pits is presented on Plate A-3 of this appendix. Logs of the test pits and test borings are presented on Plates A-4 through A-37.

Underground Service Alert was contacted prior to excavation and test drilling to identify and clear the site for underground utilities.

Sampling Procedures

Soil samples were obtained from the borings using a Modified California Sampler driven 18 inches (unless otherwise noted) into undisturbed soil using a 30-inch drop of a 140-pound hammer. Blow counts were recorded at 6-inch intervals for each sample attempt and are reported on the logs in terms of blows-per-foot for the last foot of penetration. Soil samples obtained from the borings were packaged and sealed in the field to reduce moisture loss and disturbance, and returned to our Sacramento laboratory for further testing. After borings were completed, they were backfilled with grout.

Soil samples were obtained from the test pits by placing the sample in sealed bags. Soil samples obtained from the test pits were packaged and sealed in the field to reduce moisture loss, and returned to our Sacramento laboratory for further testing. After the test pits were completed, they were backfilled with the excavated material.

LIST OF ATTACHMENTS

The following plates are attached and complete this appendix.

Plate A-15	Log of Test Pit TP-12
Plate A-16	Log of Test Pit TP-13
Plate A-17	Log of Test Pit TP-14
Plate A-18	Log of Test Pit TP-15
Plate A-19	Log of Test Pit TP-16
Plate A-20	Log of Test Pit TP-17
Plate A-21	Log of Test Pit TP-18
Plate A-22	Log of Test Pit TP-19
Plate A-23	Log of Test Pit TP-20
Plate A-24	Log of Test Pit TP-21
Plate A-25	Log of Test Pit TP-22
Plate A-26	Log of Test Pit TP-23
Plate A-27	Log of Test Pit TP-24
Plate A-28	Log of Test Pit TP-25
Plate A-29	Log of Boring KB-1
Plate A-30	Log of Boring KB-2
Plate A-31	Log of Boring KB-3
Plate A-32	Log of Boring KB-4
Plate A-33	Log of Boring KB-5
Plate A-34	Log of Boring KB-6
Plate A-35	Log of Boring KB-7
Plate A-36	Log of Boring KB-8
Plate A-37	Log of Boring KB-9

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487)

MAJOR DIVISIONS				GRAPHIC LOG		TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS (More than half of material is larger than the #200 sieve)	GRAVELS (More than half of coarse fraction is larger than the #4 sieve)	CLEAN GRAVELS WITH <5% FINES	Cu ≥4 and 1≤ Cc≤3		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			Cu <4 and/or 1>Cc>3		GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GRAVELS WITH 5 to 12% FINES	Cu ≥4 and 1≤ Cc≤3		GW-GM	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
					GW-GC	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
			Cu <4 and/or 1>Cc>3		GP-GM	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
					GP-GC	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
		GRAVELS WITH >12% FINES			GM	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
					GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
					GC-GM	CLAYEY GRAVELS, GRAVEL-SAND-CLAY-SILT MIXTURES
	SANDS (More than half of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH <5% FINES	Cu ≥6 and 1≤ Cc≤3		SW	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			Cu <6 and/or 1>Cc>3		SP	POORLY-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH 5 to 12% FINES	Cu ≥6 and 1≤ Cc≤3		SW-SM	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
					SW-SC	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
			Cu <6 and/or 1>Cc>3		SP-SM	POORLY-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
					SP-SC	POORLY-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
		SANDS WITH >12% FINES			SM	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES
					SC-SM	CLAYEY SANDS, SAND-SILT-CLAY MIXTURES
FINE GRAINED SOILS (More than half of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid limit less than 50)				ML	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY,
					CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
					CL-ML	INORGANIC CLAYS-SILTS OF LOW PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
					OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (Liquid limit greater than 50)				MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
					CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
					OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY

USCS (2487) 96004LOGS.GPJ 12/4/08

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Date: 12/4/2008   File Number: 96004logs

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487)

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
A-1

SYMBOL	ROCK TYPE	SYMBOL	ROCK TYPE	SYMBOL	ROCK TYPE
	BRECCIA		SILTSTONE		PHYLLITE
	CLAYSTONE		MUDSTONE		SANDSTONE
	CONGLOMERATE		SHALE		GREENSTONE
	GRANITE		BEDROCK		VOLCANIC

WEATHERING

Designation	Criteria
Decomposed	Rock reduced to soil with relict rock texture/structure; Generally molded and crumbled by hand.
Highly Weathered	Entire mass discolored; Alteration pervading nearly all rock with some slightly weathered pockets noticeable; Some minerals may be leached away.
Moderately Weathered	Discoloring evident; Surface pitted and alteration penetrating well below surface; Weathering "halos" evident; 10-50% of rock altered.
Slightly Weathered	Slight discoloration on surface; Slight alteration along discontinuities; <10% of rock volume altered.
Unweathered	No evidence of chemical/mechanical alteration.

FRACTURE SPACING

Designation	Criteria
Intensely Fractured	Spacing <2 inches
Highly Fractured	Spacing 2 inches to 8 inches
Moderately Fractured	Spacing 8 inches to 2 feet.
Slightly Fractured	Spacing 2 feet to 6 feet.
Unfractured	Spacing greater than 6 feet.

HARDNESS/STRENGTH

Designation	Criteria
Decomposed	Can be readily indented, grooved, or gouged with fingernail or carved with knife; Breaks with moderate to light manual pressure.
Soft	Can be grooved/gouged easily by knife or sharp pick with light pressure; Can be scratched by fingernail; Breaks under moderate manual pressure.
Moderately Soft	Can be grooved/gouged 2mm deep by knife or sharp pick with moderate to heavy pressure; Breaks with light hammer blow or heavy manual pressure.
Moderately Hard	Can be scratched with a knife or sharp pick with light to moderate pressure; Breaks with moderate hammer blow.
Hard	Can be scratched with a knife or sharp pick with difficulty (heavy pressure); Breaks with heavy hammer blow.
Very Hard	Cannot be scratched with a knife or sharp pick; Breaks with repeated hammer blows.
Extremely Hard	Cannot be scratched with a knife or sharp pick; Can only be chipped with repeated heavy hammer blows.

KA-ROCK_KEY 96004LOGS.GPJ 12/4/08

KLEINFELDER Bright People. Right Solutions. Drafted By: D. Anderson Project No.: 96004 Date: 12/4/2008 File Number: 96004logs	**ROCK DESCRIPTION CRITERIA** CAL FIRE GROWLERSBURG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	PLATE A-2

LOG SYMBOLS

BULK / BAG SAMPLE	-4 PERCENT FINER THAN THE NO. 4 SIEVE (ASTM Test Method C 136)
MODIFIED CALIFORNIA SAMPLER (2-1/2 inch outside diameter)	-200 PERCENT FINER THAN THE NO. 200 SIEVE (ASTM Test Method C 117)
CALIFORNIA SAMPLER (3 inch outside diameter)	LL LIQUID LIMIT (ASTM Test Method D 4318)
STANDARD PENETRATION SPLIT SPOON SAMPLER (2 inch outside diameter)	PI PLASTICITY INDEX (ASTM Test Method D 4318)
CONTINUOUS CORE	TXCU CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (EM 1110-1-1906)
SHELBY TUBE	EI EXPANSION INDEX (UBC STANDARD 18-2)
ROCK CORE	COL COLLAPSE POTENTIAL
WATER LEVEL (level where first encountered)	UC UNCONFINED COMPRESSION (ASTM Test Method D 2166)
WATER LEVEL (level after completion)	
SEEPAGE	MC MOISTURE CONTENT (ASTM Test Method D 2216)

GENERAL NOTES

1. *Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual.*

2. *No warranty is provided as to the continuity of soil conditions between individual sample locations.*

3. *Logs represent general soil conditions observed at the point of exploration on the date indicated.*

4. *In general, Unified Soil Classification System designations presented on the logs were evaluated by visual methods. Where laboratory tests were performed, the designations reflect the laboratory test results.*

KA-LOG_KEY 96004LOGS.GPJ 12/4/08

KLEINFELDER *Bright People. Right Solutions.*	**LOG KEY**	PLATE
Drafted By: D. Anderson Project No.: 96004	CAL FIRE GROWLERSBURG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	A-3
Date: 12/4/2008 File Number: 96004logs		

Surface Conditions: Grasses

Groundwater: Groundwater not encountered during excavation..

Method: 30 inch bucket

Equipment: CAT 420D Backhoe

Date Completed: 8/12/2008

Logged By: B. Von Dessonneck

Total Depth: 9 feet

Boring Diameter:

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
		1											**Fat CLAY** (CH): Red, dry, firm, high plasticity, roots
													Sandy Fat CLAY (CH): Yellow-red, dry, hard, high plasticity, fine sand
5		2									pH=4.08, Min Res=16.62 ohm-cm, Cl=16.0ppm, SO4=4.4ppm		
		3											grades to yellow below 7 feet, with trace cobble sized metavolcanic rock fragments; fragments are moderately strong and slightly weathered
10													Test Pit completed at a depth of 9 feet below existing site grade.
15													
20													
25													

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

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Drafted By: D. Anderson Project No.: 96004

Date: 12/4/2008 File Number: 96004logs

LOG OF TEST PIT TP- 1

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE 1 of 1

A-4

Surface Conditions:	Grasses	Date Completed:	8/12/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	7-1/2 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
	☒	1											**Fat CLAY with Sand** (CH): Red, dry, firm, high plasticity, fine grained sand, roots
	☒	2				19	51	22		74	EI=49		
5													**Elastic SILT with Sand** (MH): Yellow-red, moist, hard, high plasticity, fine sand
													Test Pit completed at a depth of 7-1/2 feet below existing site grade.
10													
15													
20													
25													

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

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Drafted By: D. Anderson
Date: 12/4/2008
Project No.: 96004
File Number: 96004logs

LOG OF TEST PIT TP- 2

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-5

Surface Conditions:	Grasses	Date Completed:	8/12/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	10 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
		1											**Fat CLAY with Sand** (CH): Red, dry, firm, high plasticity, fine sand, roots
		2											**Sandy Fat CLAY** (CH): Yellow-red, dry, hard, high plasticity, fine sand, trace of gravel and cobble-size fragments of decomposed to highly weathered and extremely weak to weak metavolcanic rock
5													
													Metavolcanic Rock : Yellow and yellow-red, decomposed, very weak to moderately strong
10													Test Pit terminated at a depth of 10 feet below existing site grade due to backhoe refusal.
15													
20													
25													

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Drafted By: D. Anderson Project No.: 96004
Date: 12/4/2008 File Number: 96004logs

LOG OF TEST PIT TP- 3

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-6

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

Surface Conditions:	Grasses	Date Completed:	8/12/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	5 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

	FIELD				LABORATORY								
Depth (feet)	Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
		1											**Fat CLAY with Sand** (CH): Red, dry, firm, fine sand, high plasticity, trace gravel and cobble sized metavolcanic rock fragments up to 6 inches, roots
		2											**Sandy Fat CLAY** (CH): Yellow-red, dry, firm to hard, fine sand, high plasticity
5		3											**Metavolcanic Rock** : Yellow, highly to moderately weathered, very weak to moderately strong
													Test Pit completed at a depth of 5 feet below existing site grade.
10													
15													
20													
25													

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LOG OF TEST PIT TP- 4

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-7

Surface Conditions:	Grasses	Date Completed:	8/12/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	4 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD				LABORATORY							Graphic Log	DESCRIPTION
	Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests		
		1											**Fat CLAY with Sand** (CH): Red, dry, firm, fine sand, trace gravel and cobble sized metavolcanic rock fragments, roots
													Metavolcanic Rock : Yellow-red, dry, highly to moderately weathered, very weak to moderately strong
5													Test Pit terminated at a depth of 4 feet below existing site grade due to backhoe refusal.
10													
15													
20													
25													

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

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LOG OF TEST PIT TP- 5

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-8

Surface Conditions:	Grasses	Date Completed:	8/12/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	10 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
	☒	1				24							**Fat CLAY with Sand** (CH): Red, moist, firm, high plasticity, fine sand, trace angular gravel and cobble sized metavolcanic rock fragments up to 6 inches, roots
5	☒	2									pH=4.35, Min Res=9.65 ohm-cm, Cl=28.1ppm, SO4=1.9ppm		**Fat CLAY** (CH): Yellow-red, dry, firm to hard, high plasticity, fine sand, trace angular gravel and cobble sized metavolcanic rock fragments up to 4 inches, roots
10													Test Pit completed at a depth of 10 feet below existing site grade.
15													
20													
25													

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LOG OF TEST PIT TP- 6

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-9

Surface Conditions:	Dirt	Date Completed:	8/12/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	1 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
	X	1									R-Value=24, See Plate B-7		**Fat CLAY with Sand** (CH): Red, dry, high plasticity, fine to medium sand
													Test Pit completed at a depth of 1 feet below existing site grade.
5													
10													
15													
20													
25													

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

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LOG OF TEST PIT TP- 7

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE 1 of 1

A-10

Surface Conditions: Grasses

Groundwater: Groundwater not encountered during excavation..

Method: 30 inch bucket

Equipment: CAT 420D Backhoe

Date Completed: 8/12/2008

Logged By: B. Von Dessonneck

Total Depth: 9 feet

Boring Diameter:

Depth (feet)	FIELD: Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
		1											**Fat CLAY with Sand** (CH): Red, dry, firm, high plasticity, fine sand, few angular to subangular gravel, cobble, and boulder-sized fragments of metavolcanic rock up to 24 inches, blocky, roots
													no roots
5													**Fat CLAY** (CH): Yellow-red, moist, hard, high plasticity, fine sand, trace cobble and boulder sized fragments
		2				15							
													Metavolcanic Rock : Yellow and yellow-red, decomposed to moderately weathered, very weak to moderately strong
10													Test Pit terminated at a depth of 9 feet below existing site grade due to backhoe refusal.
15													
20													
25													

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LOG OF TEST PIT TP- 8

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1

A-11

Surface Conditions: Dirt

Groundwater: Groundwater not encountered during excavation..

Method: 30 inch bucket

Equipment: CAT 420D Backhoe

Date Completed: 8/12/2008

Logged By: B. Von Dessonneck

Total Depth: 4 feet

Boring Diameter:

Depth (feet)	FIELD: Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
		1											**Fat CLAY with Sand** (CH): Red, dry, firm, high plasticity, fine sand, trace gravel, cobble, and boulder sized fragments of slightly weathered to highly weathered, weak to moderately strong metavolcanic rock up to 24 inches, blocky, roots
		2											**Metavolcanic Rock** : Yellow-red, decomposed to moderately weathered, very weak to moderately strong
5													Test Pit terminated at a depth of 4 feet below existing site grade due to backhoe refusal.
10													
15													
20													
25													

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

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LOG OF TEST PIT TP- 9

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1

A-12

Surface Conditions:	Dirt	Date Completed:	8/12/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	8 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
	☒	1									pH=5.15, Min Res=8.58 ohm-cm, Cl=12.6ppm, SO4=0.7ppm		**Fat CLAY with Sand** (CH): Red, dry, firm to hard, high plasticity, fine sand, trace gravel and cobble sized fragments of metavolcanic rock, trace asphalt and broken pipe fragments (FILL)
5	☒	2											**Metavolcanic Rock** : Orange, decomposed to highly weathered, extremely weak to weak, manganese surficial staining on some fractures
													Test Pit terminated at a depth of 8 feet below existing site grade due to backhoe refusal.
10													
15													
20													
25													

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LOG OF TEST PIT TP-10

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-13

Surface Conditions:	Grass	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	9-1/2 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
		1											**Sandy Fat CLAY** (CH): Red, dry, fine to medium sand, high plasticity, trace angular gravel, cobble, and boulder-sized rock fragments up to 24 inches, roots (FILL) Note: 2-10 inch thick layer of crushed serpentine gravel at base of fill
													Sandy Fat CLAY (CH): Red-brown to olive-brown, moist, firm to hard, high plasticity, fine to medium sand, roots
5		2				33							
10													**Metavolcanic Rock** : Predominantly decomposed with slightly to moderately weathered zones, red-brown to red-yellow, moderately strong, silicious
													Test Pit terminated at a depth of 9-1/2 feet below existing site grade due to backhoe refusal.
15													
20													
25													

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LOG OF TEST PIT TP-11

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-14

Surface Conditions:	Gravel lot	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	12 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
	⊠	1				19							**Gravelly Fat CLAY** (CH): Dark red-brown to dark gray-brown, firm to hard, high plasticity, fine to coarse sand, fine to coarse angular gravel, trace subangular cobbles and boulders, roots (FILL)
													Fat CLAY (CH): Olive-brown to yellow and gray, firm to hard, high plasticity
5	⊠	2											
10													
													Test Pit completed at a depth of 12 feet below existing site grade.
15													
20													
25													

Surface Conditions:	Gravel lot	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
Method:	30 inch bucket	Total Depth:	7 feet
Equipment:	CAT 420D Backhoe	Boring Diameter:	

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
		1					33	12	73	56			**Gravelly Lean CLAY with Sand** (CL): Dark brown to dark gray, moist, firm to hard, medium plasticity, little fine to coarse angular gravel, trace cobble and boulder-sized rock fragments, roots (FILL) Note: Tree stumps encountered at bottom of fill layer
5													**Fat CLAY** (CH): Red-yellow, moist, firm to hard, high plasticity
		2											
													Metavolcanic Rock : Yellow-brown, decomposed, with moderately weathered zones, weak
													Test Pit terminated at a depth of 7 feet below existing site grade due to backhoe refusal.
10													
15													
20													
25													

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LOG OF TEST PIT TP-13

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-16

Surface Conditions:	Gravel lot	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	5 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
													Gravelly Fat CLAY (CH): Gray-brown, dry, high plasticity, fine to coarse angular gravel (FILL)
	X	1											**Sandy Fat CLAY** (CH): Red, dry to moist, high plasticity, fine sand, roots
5	X	2											**Metavolcanic Rock** : Yellow, highly weathered, very weak to weak
													Test Pit terminated at a depth of 5 feet below existing site grade due to backhoe refusal.
10													
15													
20													
25													

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LOG OF TEST PIT TP-14

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-17

Surface Conditions:	Gravel lot		Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..		Logged By:	B. Von Dessonneck
Method:	30 inch bucket		Total Depth:	12 feet
Equipment:	CAT 420D Backhoe		Boring Diameter:	

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
													Silty GRAVEL with Sand (GM): Gray, dry, fine to coarse angular gravel (Aggregate Base)
	☒	1									R-Value<5, See Plate B-8		**Sandy Fat CLAY** (CH): Red-yellow to yellow, moist, firm to hard, high plasticity, fine sand (FILL)
	☒	2				25					pH=6.72, Min Res=1.37 ohm-cm, Cl=12.3ppm, SO4=8.8ppm		
5													**Sandy Fat CLAY** (CH): Red-yellow to yellow, moist, firm to hard, high plasticity, fine sand, quartz fragments (veins)
10													grades with highly weathered, very weak, metavolcanic rock fragments below 10 feet
	☒	3											
													Test Pit completed at a depth of 12 feet below existing site grade.
15													
20													
25													

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LOG OF TEST PIT TP-15

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-18

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

Surface Conditions:	Cut slope	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	8 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
	X	1					42	11	99	67			**Metavolcanic Rock** : Yellow, decomposed, extremely weak to very weak; Note: reduced to sandy silt, low plasticity, firm to hard, fine sand
5													
	X	2											
													Test Pit terminated at a depth of 8 feet below existing site grade due to backhoe refusal.
10													
15													
20													
25													

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LOG OF TEST PIT TP-16

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-19

Surface Conditions:	Dirt	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	1 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD				LABORATORY							Graphic Log	DESCRIPTION
	Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests		
0–1	X	1											**Sandy Fat CLAY** (CH): Red-brown, dry, high plasticity, fine sand
1													Test Pit completed at a depth of 1 feet below existing site grade.
5													
10													
15													
20													
25													

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LOG OF TEST PIT TP-17

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-20

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

Surface Conditions:	Dirt	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	1 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD				LABORATORY							Graphic Log	DESCRIPTION
	Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests		
	⊠	1											**Sandy Fat CLAY with Gravel** (CH): Red-brown, dry, fine to coarse sand, fine to coarse gravel, trace cobble sized angular rock fragments up to 10 inches, roots
													Test Pit terminated at a depth of 1 feet below existing site grade due to backhoe refusal on metavolcanic rock.
5													
10													
15													
20													
25													

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LOG OF TEST PIT TP-18

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-21

Surface Conditions:	Dirt lot	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	12-1/2 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
	X	1											**Silty GRAVEL with Sand** (GM): Gray-brown, dry, fine to coarse sand, fine to coarse angular gravel, serpentine fragments (FILL)
	X	2 Bulk									pH=5.49, Min Res=2.63 ohm-cm, Cl=15.3ppm, SO4=5.6ppm		**Sandy Lean CLAY** (CL): Red-brown, moist, medium plasticity, fine to coarse angular sand (FILL)
													Fat CLAY with Sand (CL): Red-brown to gray-green, moist, medium to high plasticity (FILL)
5	X	3				30	51	24	98	81	EI=101		**Fat CLAY with Sand** (CL): Red-brown to gray-green, moist, medium to high plasticity
10													
													Test Pit completed at a depth of 12-1/2 feet below existing site grade.
15													
20													
25													

Surface Conditions:	Dirt	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	1 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	LABORATORY Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
	☒	1									R-Value=32, See Plate B-9		**Sandy Fat CLAY with Gravel** (CH): Red-brown, dry, fine to coarse sand, fine to coarse gravel, trace angular cobble sized rock fragments up to 12 inches
													Test Pit completed at a depth of 1 feet below existing site grade.
5													
10													
15													
20													
25													

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

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LOG OF TEST PIT TP-20

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-23

Surface Conditions:	Dirt	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	9-1/2 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	Sample Type (FIELD)	Sample No. (FIELD)	Blows/foot (FIELD)	Pocket Penetrometer (tsf) (FIELD)	Dry Density (pcf) (LABORATORY)	Moisture Content (%) (LABORATORY)	Liquid Limit (LABORATORY)	Plasticity Index (LABORATORY)	Passing #4 Sieve (%) (LABORATORY)	Passing #200 Sieve (%) (LABORATORY)	Other Tests (LABORATORY)	Graphic Log	DESCRIPTION
	X	1				19							**Sandy Fat CLAY** (CH): Red-brown, moist, high plasticity, fine to medium sand, trace subrounded gravel and cobble-sized rock fragments, roots
5	X	2											**Metavolcanic Rock** : Yellow, decomposed to highly weathered, extremely weak to weak, weathering to sandy clay with high plasticity
													below 6 feet, grades to highly weathered, very weak to weak, manganese surficial staining on fractures
10													Test Pit terminated at a depth of 9-1/2 feet below existing site grade due to backhoe refusal.
15													
20													
25													

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LOG OF TEST PIT TP-21

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-24

Surface Conditions: Dirt		Date Completed: 8/11/2008
Groundwater: Groundwater not encountered during excavation..		Logged By: B. Von Dessonneck
		Total Depth: 5 feet
Method: 30 inch bucket		Boring Diameter:
Equipment: CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
	☒	1											**Sandy Fat CLAY** (CH): Red, dry, high plasticity, fine to coarse sand, trace angular gravel, cobble and boulder sized rock fragments up to 24 inches, roots
	☒	2											**Metavolcanic Rock** : Yellow, highly weathered, very weak to weak, weathering to sandy clay with high plasticity
5													Test Pit terminated at a depth of 5 feet below existing site grade due to backhoe refusal.
10													
15													
20													
25													

P-LOG_2006 BLOWS PER FOOT 96004LOGS.GPJ 12/4/08

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LOG OF TEST PIT TP-22

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-25

Surface Conditions:	
Groundwater:	Groundwater not encountered during excavation..
Method:	30 inch bucket
Equipment:	CAT 420D Backhoe
Date Completed:	8/11/2008
Logged By:	B. Von Dessonneck
Total Depth:	8-1/2 feet
Boring Diameter:	

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
		1											**Fat CLAY with Sand** (CH): Red, dry, firm, high plasticity, fine to medium sand
		2				22	68	44		87			**Metavolcanic Rock** : Yellow, decomposed, extremely weak to very weak, weathering to sandy clay, some manganese nodules, manganese surficial staining on fracture surfaces
5													
		3											
													Test Pit terminated at a depth of 8-1/2 feet below existing site grade due to backhoe refusal.
10													
15													
20													
25													

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LOG OF TEST PIT TP-23

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-26

Surface Conditions:	Grass	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	7 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
		1											**Fat CLAY with Sand** (CH): Red, Dry, firm, high plasticity, fine to medium sand, trace angular gravel and cobble-sized rock fragments, roots
		2				21							yellow, moist, hard, no roots below 2-1/2 feet
5		3											**Metavolcanic Rock** : Yellow, decomposed to highly weathered, very weak to weak, manganese surfical staining on fractures
													Test Pit terminated at a depth of 7 feet below existing site grade due to backhoe refusal.
10													
15													
20													
25													

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LOG OF TEST PIT TP-24

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-27

Surface Conditions:	Dirt	Date Completed:	8/11/2008
Groundwater:	Groundwater not encountered during excavation..	Logged By:	B. Von Dessonneck
		Total Depth:	1 feet
Method:	30 inch bucket	Boring Diameter:	
Equipment:	CAT 420D Backhoe		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
	X	1											**Fat CLAY with Sand** (CH): Red, dry, firm, high plasticity, fine to medium sand, roots
													Test Pit completed at a depth of 1 feet below existing site grade.
5													
10													
15													
20													
25													

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LOG OF TEST PIT TP-25

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-28

Surface Conditions:	Asphalt	Date Completed:	8/25/2008
Groundwater:	Groundwater not encountered during drilling.	Logged By:	B. Von Dessonneck
		Total Depth:	21-1/2 feet
Method:	Hollow Stem Auger with 140lb Autohammer	Boring Diameter:	8 inch
Equipment:	CME 75		

Depth (feet)	Sample Type	Sample No. (FIELD)	Blows/foot (FIELD)	Pocket Penetrometer (tsf) (FIELD)	Dry Density (pcf) (LABORATORY)	Moisture Content (%) (LABORATORY)	Liquid Limit (LABORATORY)	Plasticity Index (LABORATORY)	Passing #4 Sieve (%) (LABORATORY)	Passing #200 Sieve (%) (LABORATORY)	Other Tests (LABORATORY)	Graphic Log	DESCRIPTION
0													**Asphalt Concrete** : Approximately 2 inches thick
													Aggregate Base : Approximately 6 inches thick
													Sandy Fat CLAY with Gravel (CH): Brown, moist, firm, high plasticity, fine to coarse sand, fine to coarse subangular gravel up to 1 inch, wood fragments (FILL)
		1B 1A	19		96	20							
5													**Sandy Fat CLAY with Gravel** (CH): Brown, moist, firm, high plasticity, fine to coarse sand, fine to coarse subangular gravel up to 1 inch, roots
		2B 2A	17										
		3B 3A	29										
10													**Fat CLAY with Sand** (CH): Red-yellow, moist, firm to hard, high plasticity, fine to medium sand
		4B 4A	34										
													Fat CLAY (CH): Red-yellow, moist, firm to hard, high plasticity
15		5B 5A	31										
20													hard
		6B 6A	51										**Metavolcanic Rock** : Yellow, decomposed, extremely weak
													Boring completed at a depth of 21-1/2 feet below existing site grade.
25													

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LOG OF BORING KB-1

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-29

Surface Conditions:	Asphalt	Date Completed:	8/25/2008
Groundwater:	Groundwater not encountered during drilling.	Logged By:	B. Von Dessonneck
		Total Depth:	20-1/2 feet
Method:	Hollow Stem Auger with 140lb Autohammer	Boring Diameter:	8 inch
Equipment:	CME 75		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
													Asphalt Concrete : Approximately 2 inches thick
													Aggregate Base : Approximately 4 inches thick
		Bulk					42	24	97	72			**Lean CLAY with Sand** (CL): Brown, moist, firm, medium to high plasticity, fine sand, trace fine subangular gravel
		1B											**Metavolcanic Rock** : Yellow, decomposed, extremely weak
		1A	75		119	17							
5		2B											
		2A	42										
		3B											yellow to gray-green, roots
		3A	59										
10		4A	85/7"										yellow
													harder drilling
15		5	83/11"										weak to very weak, foliated
20		6	50/3"										
													Boring completed at a depth of 20-1/2 feet below existing site grade.
25													

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LOG OF BORING KB- 2

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-30

Surface Conditions:	Grass	Date Completed:	8/25/2008
Groundwater:	Groundwater not encountered during drilling.	Logged By:	B. Von Dessonneck
		Total Depth:	20 feet
Method:	Hollow Stem Auger with 140lb Autohammer	Boring Diameter:	8 inch
Equipment:	CME 75		

Depth (feet)	Sample Type	Sample No. (FIELD)	Blows/foot (FIELD)	Pocket Penetrometer (tsf) (FIELD)	Dry Density (pcf) (LABORATORY)	Moisture Content (%) (LABORATORY)	Liquid Limit (LABORATORY)	Plasticity Index (LABORATORY)	Passing #4 Sieve (%) (LABORATORY)	Passing #200 Sieve (%) (LABORATORY)	Other Tests (LABORATORY)	Graphic Log	DESCRIPTION
0													**Sandy Fat CLAY with Gravel** (CH): Red-brown, dry, firm, moderate to high plasticity, fine to coarse sand, fine to coarse subangular gravel, trace cobble-sized rock fragments (FILL)
													Note: No sample at 2-1/2 feet due to rock fragment
4													**Metavolcanic Rock** : Yellow, decomposed, extremely weak, foliated, weathering to fat clay with fine sand, manganese surficial staining of fractures
5		1B			111	18							
		1A	47										
		2	53										
10		3	30										orange
15		4	53										yellow-brown
20		5	50/2"										extremely weak to very weak
													Boring completed at a depth of 20 feet below existing site grade.
25													

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LOG OF BORING KB- 3

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-31

Surface Conditions:	Grass	Date Completed:	8/26/2008
Groundwater:	Groundwater not encountered during drilling.	Logged By:	B. Von Dessonneck
		Total Depth:	20 feet
Method:	Hollow Stem Auger with 140lb Autohammer	Boring Diameter:	8 inch
Equipment:	CME 75		

Depth (feet)	Sample Type	Sample No. (FIELD)	Blows/foot (FIELD)	Pocket Penetrometer (tsf) (FIELD)	Dry Density (pcf) (LABORATORY)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
0													**Sandy Fat CLAY with Gravel** (CH): Red-brown, moist, firm, high plasticity, fine to coarse sand, fine to coarse subangular gravel (FILL)
3		1B 1A	14								Collapse Potential, See Plate B-6		**Fat CLAY with Sand and Gravel** (CH): Olive-brown, moist to wet, soft to firm, high plasticity, fine to coarse sand, fine to coarse subangular gravel
5		2B 2A	13		96	27					UC=2.9 tsf, See Plate B-5		moist
		3B 3A	23										
9													**Metavolcanic Rock** : Yellow-brown, decomposed, extremely weak, foliated, manganese stains on fracture surfaces, weathering to fat clay with sand
10		4	70/10"										extremely weak to very weak
15		5	50/5"										
20		6	50/1"										Boring completed at a depth of 20 feet below existing site grade.
25													

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LOG OF BORING KB- 4

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-32

Surface Conditions: Dirt

Groundwater: Groundwater not encountered during drilling.

Method: Hollow Stem Auger with 140lb Autohammer

Equipment: CME 75

Date Completed: 8/26/2008

Logged By: B. Von Dessonneck

Total Depth: 11 feet

Boring Diameter: 8 inch

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	Other Tests	Graphic Log	DESCRIPTION
0													**Sandy Fat CLAY with Gravel** (CH): Red-brown, dry, firm, high plasticity, fine to coarse sand, fine to coarse subangular gravel (FILL)
													Fat CLAY (CH): Olive-light brown, moist, firm to hard
		1B 1A	21								Direct Shear, See Plate B-4		
5													**Metavolcanic Rock** : Yellow-brown to red, decomposed, extremely weak, foliated, manganese staining on fracture surfaces, weathering to sandy fat clay
		2B 2A	28		102	18							
		3B 3A	17										
10		4	50/3"										light brown, decomposed to highly weathered, extremely weak to weak
													Boring terminated at a depth of 11 feet below existing site grade due to auger refusal.
15													
20													
25													

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LOG OF BORING KB- 5

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-33

Surface Conditions: Grass

Groundwater: Groundwater not encountered during drilling.

Method: Hollow Stem Auger with 140lb Autohammer

Equipment: CME 75

Date Completed: 8/26/2008

Logged By: B. Von Dessonneck

Total Depth: 21-1/2 feet

Boring Diameter: 8 inch

Depth (feet)	Sample Type	Sample No. (FIELD)	Blows/foot (FIELD)	Pocket Penetrometer (tsf) (FIELD)	Dry Density (pcf) (LABORATORY)	Moisture Content (%) (LABORATORY)	Liquid Limit (LABORATORY)	Plasticity Index (LABORATORY)	Passing #4 Sieve (%) (LABORATORY)	Passing #200 Sieve (%) (LABORATORY)	Other Tests (LABORATORY)	Graphic Log	DESCRIPTION
0													**Sandy Fat CLAY with Gravel** (CH): Red-brown, moist, firm, high plasticity, fine to coarse sand, fine to coarse subangular gravel (FILL)
3.5													**Metavolcanic Rock** : Yellow-brown, moist, decomposed, extremely weak, foliated, manganese staining on fracture surfaces, weathering to sandy clay
5		1B 1A	25		103	22							
		2B 2A	26										
10		3	15										
15		4	90										olive-gray to light brown
20		5	25										wet
21.5													Boring completed at a depth of 21-1/2 feet below existing site grade.
25													

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File Number: 96004logs

LOG OF BORING KB- 6

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-34

Surface Conditions:	Sawdust	Date Completed:	8/26/2008
Groundwater:	Groundwater not encountered during drilling.	Logged By:	B. Von Dessonneck
		Total Depth:	21-1/2 feet
Method:	Hollow Stem Auger with 140lb Autohammer	Boring Diameter:	8 inch
Equipment:	CME 75		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
													Sawdust : Approximately 5 inches thick
													Sandy Fat CLAY with Gravel (CH): Brown to red-brown, moist, firm, high plasticity, fine to coarse sand, fine to coarse subangular gravel (FILL)
		1B 1A	23										**Fat CLAY** (CH): Olive-brown, moist, firm, high plasticity, trace fine to coarse sand and gravel
5													**Metavolcanic Rock** : Yellow-brown to red-brown, decomposed, extremely weak, foliated, manganese staining on fracture *surfaces, weathering to fat clay with sand*
		2B 2A	32										
		3	9										
10		4	16										
15		5	92/11"										yellow-brown, extremely weak to very weak
													difficult drilling from 15 to 20 feet
20		6	26										
													Boring completed at a depth of 21-1/2 feet below existing site grade.
25													

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LOG OF BORING KB-7

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-35

Surface Conditions:	Dirt	Date Completed:	8/25/2008
Groundwater:	Groundwater not encountered during drilling.	Logged By:	B. Von Dessonneck
		Total Depth:	20-1/2 feet
Method:	Hollow Stem Auger with 140lb Autohammer	Boring Diameter:	8 inch
Equipment:	CME 75		

Depth (feet)	FIELD: Sample Type	FIELD: Sample No.	FIELD: Blows/foot	FIELD: Pocket Penetrometer (tsf)	LABORATORY: Dry Density (pcf)	LABORATORY: Moisture Content (%)	LABORATORY: Liquid Limit	LABORATORY: Plasticity Index	LABORATORY: Passing #4 Sieve (%)	LABORATORY: Passing #200 Sieve (%)	LABORATORY: Other Tests	Graphic Log	DESCRIPTION
0													**Poorly Graded GRAVEL with Sand and Silt** (GP-GM): Gray-brown, dry, fine to coarse sand, fine to coarse angular gravel, serpentine material (FILL)
													Fat CLAY with Sand (CH): Red-yellow, dry to moist, firm, high plasticity, fine sand
		1A	65/8"		106	11							**Metavolcanic Rock** : Light yellow-brown, decomposed, extremely weak, foliated
5		2A	50/2"										
		3	50/6"										
10		4	94/10"										
													difficult drilling
15		5	50/4"										
20		6	50/3"										
													Boring completed at a depth of 20-1/2 feet below existing site grade.
25													

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File Number: 96004logs

LOG OF BORING KB- 8

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-36

Surface Conditions: Dirt

Groundwater: Groundwater not encountered during drilling.

Method: Hollow Stem Auger with 140lb Autohammer

Equipment: CME 75

Date Completed: 8/25/2008

Logged By: B. Von Dessonneck

Total Depth: 20-1/2 feet

Boring Diameter: 8 inch

Depth (feet)	Sample No.	Blows/foot	Pocket Penetrometer (tsf)	Dry Density (pcf)	Moisture Content (%)	Liquid Limit	Plasticity Index	Passing #4 Sieve (%)	Passing #200 Sieve (%)	Other Tests	DESCRIPTION
0											**Sandy Fat CLAY with Gravel** (CH) : Brown, gray-green, moist, firm, high plasticity, fine to coarse sand, fine to coarse subangular gravel to 3 inches (FILL)
	1B 1A	10									
5											**Metavolcanic Rock** : Yellow-orange, decomposed, extremely weak, foliated, white stringers and manganese staining on fracture faces, weathering to fat clay with fine sand
	2B 2A	32		96	27						
	3B 3A	77									
10	4	22									
15	5	58/7"									
20	6	94/8"									light yellow-brown
											Boring completed at a depth of 20-1/2 feet below existing site grade.
25											

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LOG OF BORING KB- 9

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
A-37

APPENDIX B
LABORATORY TESTING

General

Laboratory tests were performed on selected samples to aid in soil classification and to evaluate physical properties of the soils that may affect the geotechnical aspects of project design and construction. A description of the laboratory testing program is presented below. A summary of all laboratory tests performed is presented on the Summary of Laboratory Tests, Plate B-1.

Atterberg Limits

Six Atterberg Limits tests were performed to aid in soil classification and to evaluate the plasticity characteristics of the material. Additionally, test results were correlated to published data to evaluate the shrink/swell potential of near-surface site soils. Tests were performed in general accordance with ASTM Test Method D 4318. Results of these tests are presented on Summary of Laboratory Tests, Plate B-1, and on Plate B-2.

Sieve Analysis

Five sieve analyses were performed to evaluate the gradational characteristics of the material and to aid in soil classification. The tests were performed in general accordance with ASTM Test Method C 136. Results of the tests are presented on the Summary of Laboratory Tests, Plate B-1 and on Plate B-3.

Sieve Analysis/Wash #200

One Sieve Analysis/Wash #200 was performed to evaluate the gradational characteristics of the material and to aid in soil classification. The test was performed in general accordance with ASTM Test Method C 136. Results of the test are presented on the Summary of Laboratory Tests, Plate B-1 and on Plate B-3.

Direct Shear

One direct shear test was performed on a selected, undisturbed sample to evaluate the shear strength of the fine-grained site soils. Test procedures were in general accordance with ASTM Test Method D 3080. Results of this test are presented on the Summary of Laboratory Tests, Plate B-1 and on Plate B- 4.

Unconfined Compression

One unconfined compression test was performed on a selected, undisturbed sample to evaluate the undrained shear strength of the fine-grained site soils. Test procedures were in general accordance with ASTM Test Method D 2166. Results of this test are presented on the Summary of Laboratory Tests, Plate B-1 and on Plate B-5.

Collapse Potential

One collapse potential test was performed on a selected, undisturbed sample to evaluate the settlement potential of the near-surface site soils when subjected to typical foundation loads and wetting. The collapse potential test was conducted by loading the sample to both overburden and estimated foundation pressures and then inundating the sample with water. Test procedures were in general accordance with ASTM Test Methods D 2435 and D 5333. Results of this test are presented on the Summary of Laboratory Tests, Plate B-1 and on Plate B-6.

R-Value

Three resistance value (R-value) tests were performed on bulk soil samples to evaluate pavement support characteristics of the near-surface site soils. Test procedures were in general accordance with California Test 301. Results of these tests are presented on the Summary of Laboratory Tests, Plate B-1 and on Plates B-7 through B-9.

Expansion Index

One Expansion Index (EI) test was performed on a selected sample of near-surface soils to evaluate the expansion characteristics of the near-surface site soils. Test procedures were in general accordance with ASTM Test Method D 4829. Results of this test are presented on the Summary of Laboratory Tests, Plate B-1.

Corrosion

Six series of tests were performed on selected samples of the near-surface soils to evaluate corrosive potential. The samples were tested in general accordance with California Test Methods 643, 422, and 417 for determination of soil pH and minimum resistivity, and contents of soluble chlorides and soluble sulfates, respectively. The results of these tests are presented in Section 4.6 of this report, on the Summary of Laboratory Tests, Plate B-1, and in Appendix D.

Asbestos Analysis

Five tests were performed on selected samples of the near-surface site soils, the native bedrock, and the existing aggregate and crushed rock stockpiled materials at the site in order to evaluate the presence of asbestiform materials. The samples were tested in general accordance with CARB 435 test methods. Results of these tests are presented in Section 4.8 of this report and in Appendix D.

LIST OF ATTACHMENTS

The following plates are attached and complete this appendix.

Plate B-1	Summary of Laboratory Tests
Plate B-2	Plasticity Chart
Plate B-3	Sieve Analysis
Plate B-4	Direct Shear Test
Plate B-5	Unconfined Compression
Plate B-6	Collapse Potential
Plate B-7 – B-9	Resistance Value

BORING NO.	SAMPLE DEPTH (ft)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (% of dry weight)	PARTICLE SIZE SIEVE SIZE (percent passing)						ATTERBERG LIMITS		OTHER TESTS
				6"	3"	3/4"	#4	#10	#200	L.L.	P.I.	
KB- 1	3.5	96	20									
KB- 2	1.0					100	97	95	72	42	24	
KB- 2	3.5	119	17									
KB- 3	5.5	111	18									
KB- 4	3.5											Collapse Potential, See Plate B-6
KB- 4	5.5	96	27									
KB- 4	6.0											UC=2.9 tsf, See Plate B-5
KB- 5	3.5											Direct Shear, See Plate B-4
KB- 5	6.0	102	18									
KB- 6	6.0	103	22									
KB- 8	2.5	106	11									
KB- 9	6.0	96	27									
TP- 1	4.5											pH=4.08, Min Res=16.62 ohm-cm, Cl=16.0ppm, SO4=4.4ppm
TP- 2	3.5		19						74	51	22	EI=49
TP- 6	0.5		24									
TP- 6	5.5											pH=4.35, Min Res=9.65 ohm-cm, Cl=28.1ppm, SO4=1.9ppm
TP- 7	0.0											R-Value=24, See Plate B-7
TP- 8	5.0		15									
TP-10	0.5											pH=5.15, Min Res=8.58 ohm-cm, Cl=12.6ppm, SO4=0.7ppm
TP-11	4.5		33									
TP-12	0.5		19									
TP-13	0.5				100	78	73	71	56	33	12	
TP-15	0.5											R-Value<5, See Plate B-8
TP-15	1.5		25									pH=6.72, Min Res=1.37 ohm-cm, Cl=12.3ppm, SO4=8.8ppm
TP-16	0.5						99	99	67	42	11	
TP-19	1.0											pH=5.49, Min Res=2.63 ohm-cm, Cl=15.3ppm, SO4=5.6ppm
TP-19	4.5		30				98	97	81	51	24	EI=101
TP-20	0.5											R-Value=32, See Plate B-9
TP-21	0.5		19									
TP-23	3.0		22					100	87	68	44	
TP-24	2.5		21									
TP-24	5.0											pH=6.10, Min Res=2.68 ohm-cm, Cl=6.1ppm, SO4=3.3ppm

KLEINFELDER
Bright People. Right Solutions.

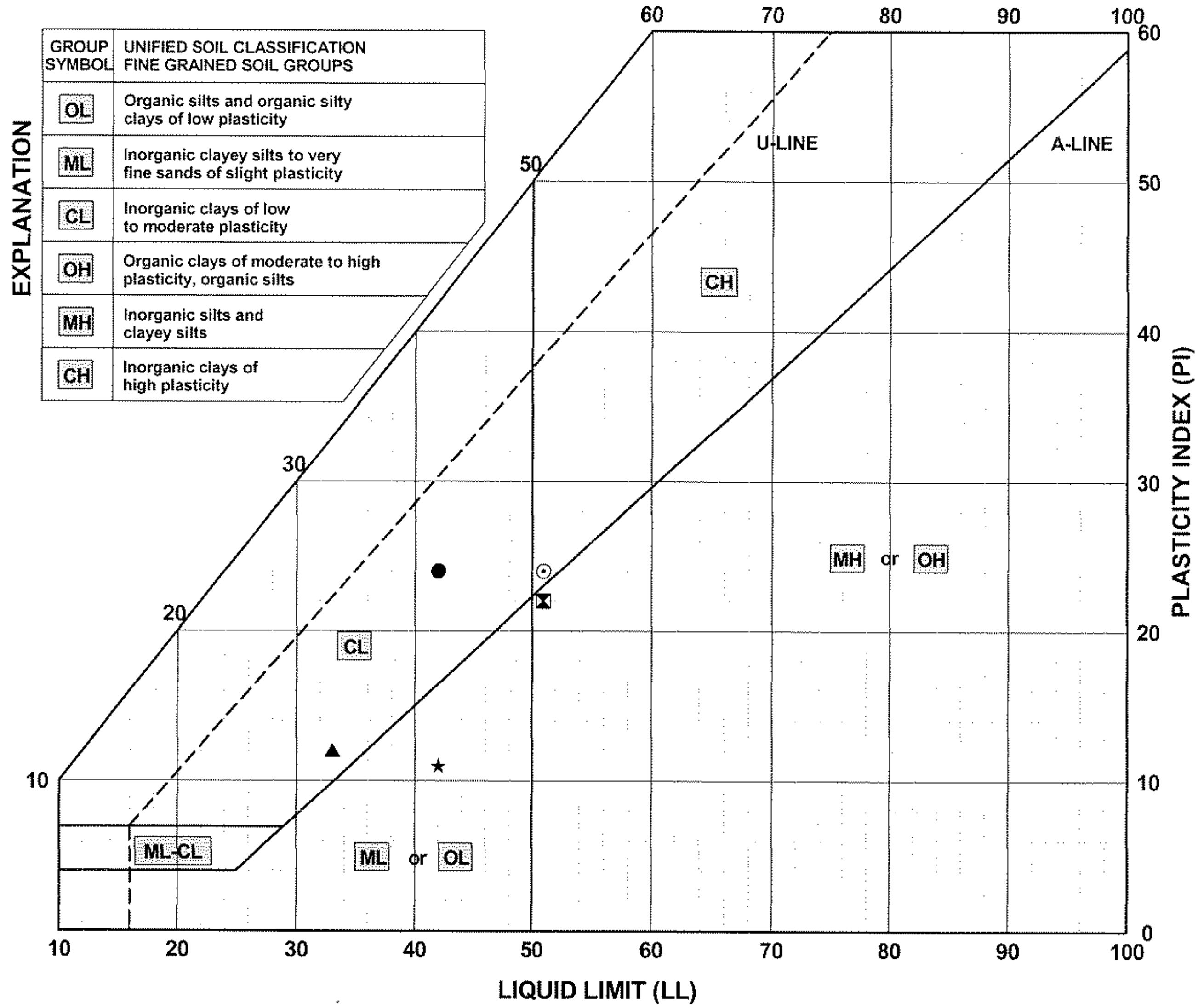
Drafted By: D. Anderson Project No.: 96004
Date: 9/29/2008 File Number: 96004logs

SUMMARY OF LABORATORY TESTS

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 1
B-1

KA-LAB WITH COBBLE TO 6 INCHES 96004LOGS.GPJ 9/29/08



LEGEND:	SOURCE	DEPTH (ft)	LL	PL	PI	DESCRIPTION
●	KB- 2	1.0	42	18	24	LEAN CLAY with SAND(CL)
⊠	TP- 2	3.5	51	29	22	ELASTIC SILT with SAND(MH)
▲	TP-13	0.5	33	21	12	GRAVELLY LEAN CLAY with SAND(CL)
★	TP-16	0.5	42	31	11	SANDY SILT(ML)
⊙	TP-19	4.5	51	27	24	FAT CLAY with SAND(CH)

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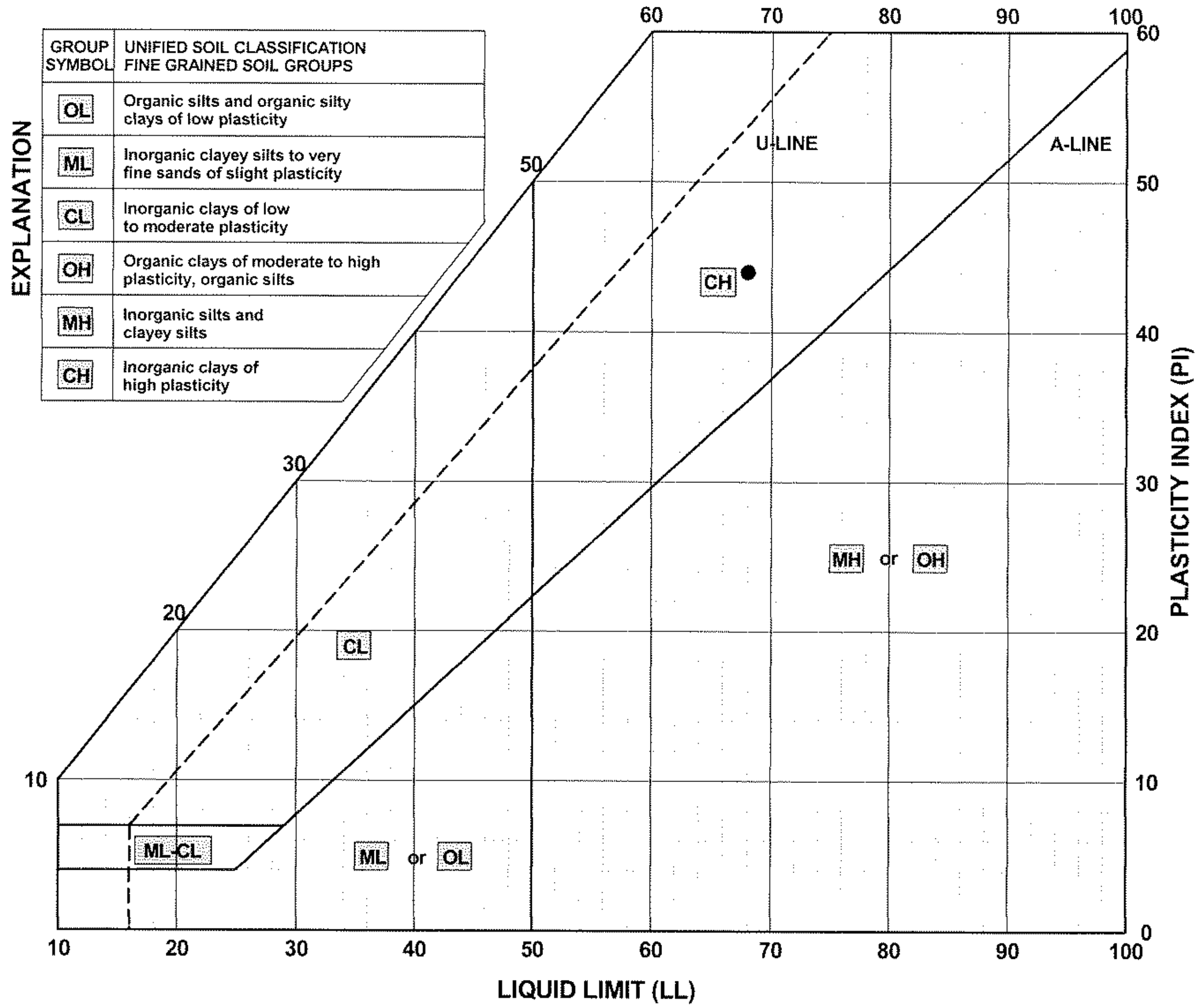
Drafted By: D. Anderson Project No.: 96004
Date: 9/22/2008 File Number: 96004logs

PLASTICITY CHART

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 2
B-2

KA_ATTERBERG 96004LOGS.GPJ 9/22/08



LEGEND:	SOURCE	DEPTH (ft)	LL	PL	PI	DESCRIPTION
●	TP-23	3.0	68	24	44	FAT CLAY(CH)

KA_ATTERBERG 96004LOGS.GPJ 9/22/08

KLEINFELDER
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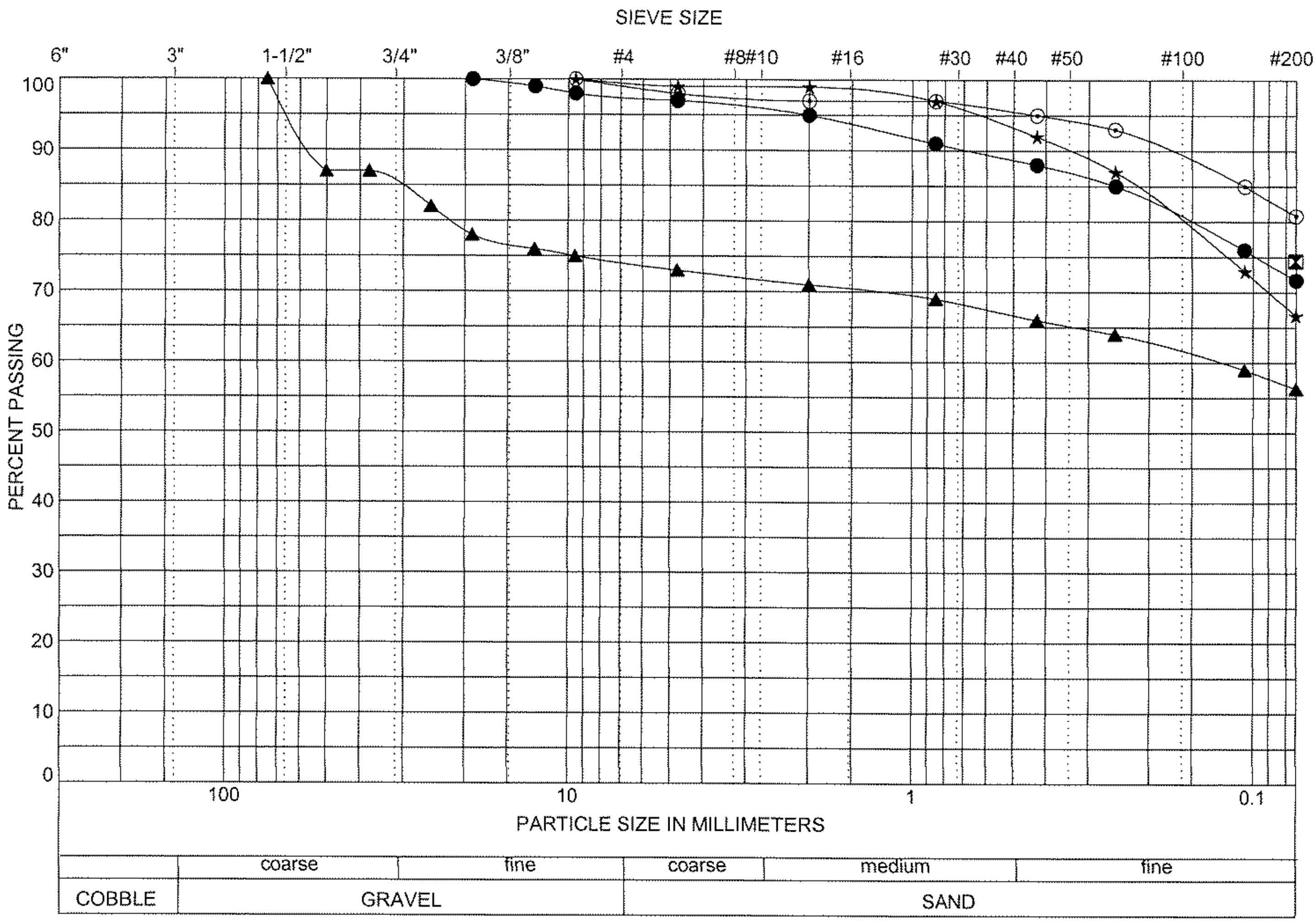
Drafted By: D. Anderson | Project No.: 96004
Date: 9/22/2008 | File Number: 96004logs

PLASTICITY CHART

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
2 of 2
B-2



LEGEND:	SOURCE	DEPTH (ft)	COBBLE (%)	GRAVEL (%)	SAND (%)	FINES (%)	D60 (mm)	D10 (mm)	Cu	Cc	DESCRIPTION
●	KB- 2	1.0	0	3	25	72					LEAN CLAY with SAND(CL)
⊠	TP- 2	3.5	0	0	0	74					ELASTIC SILT with SAND(MH)
▲	TP-13	0.5	0	27	17	56	0.13				GRAVELLY LEAN CLAY with SAND(CL)
★	TP-16	0.5	0	1	32	67					SANDY SILT(ML)
⊙	TP-19	4.5	0	2	17	81					FAT CLAY with SAND(CH)

KA_SIEVE 96004LOGS.GPJ 9/22/08

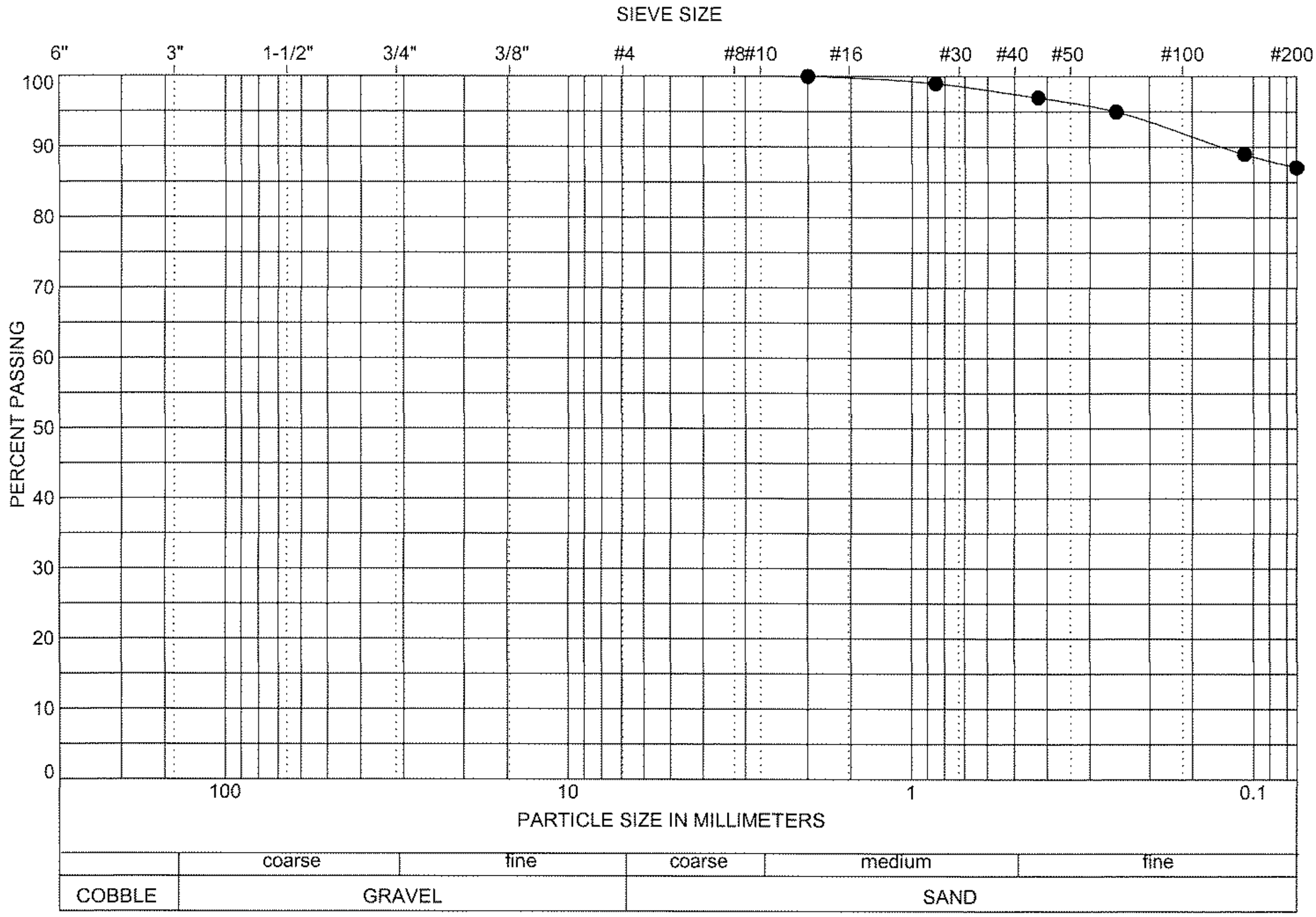
KLEINFELDER
Bright People. Right Solutions.

Drafted By: D. Anderson Project No.: 96004
Date: 9/5/2008 File Number: 96004logs

SIEVE ANALYSIS

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
1 of 2
B-3



LEGEND:	SOURCE	DEPTH (ft)	COBBLE (%)	GRAVEL (%)	SAND (%)	FINES (%)	D60 (mm)	D10 (mm)	Cu	Cc	DESCRIPTION
●	TP-23	3.0	0	0	13	87					FAT CLAY(CH)

KA_SIEVE 96004LOGS.GPJ 9/22/08

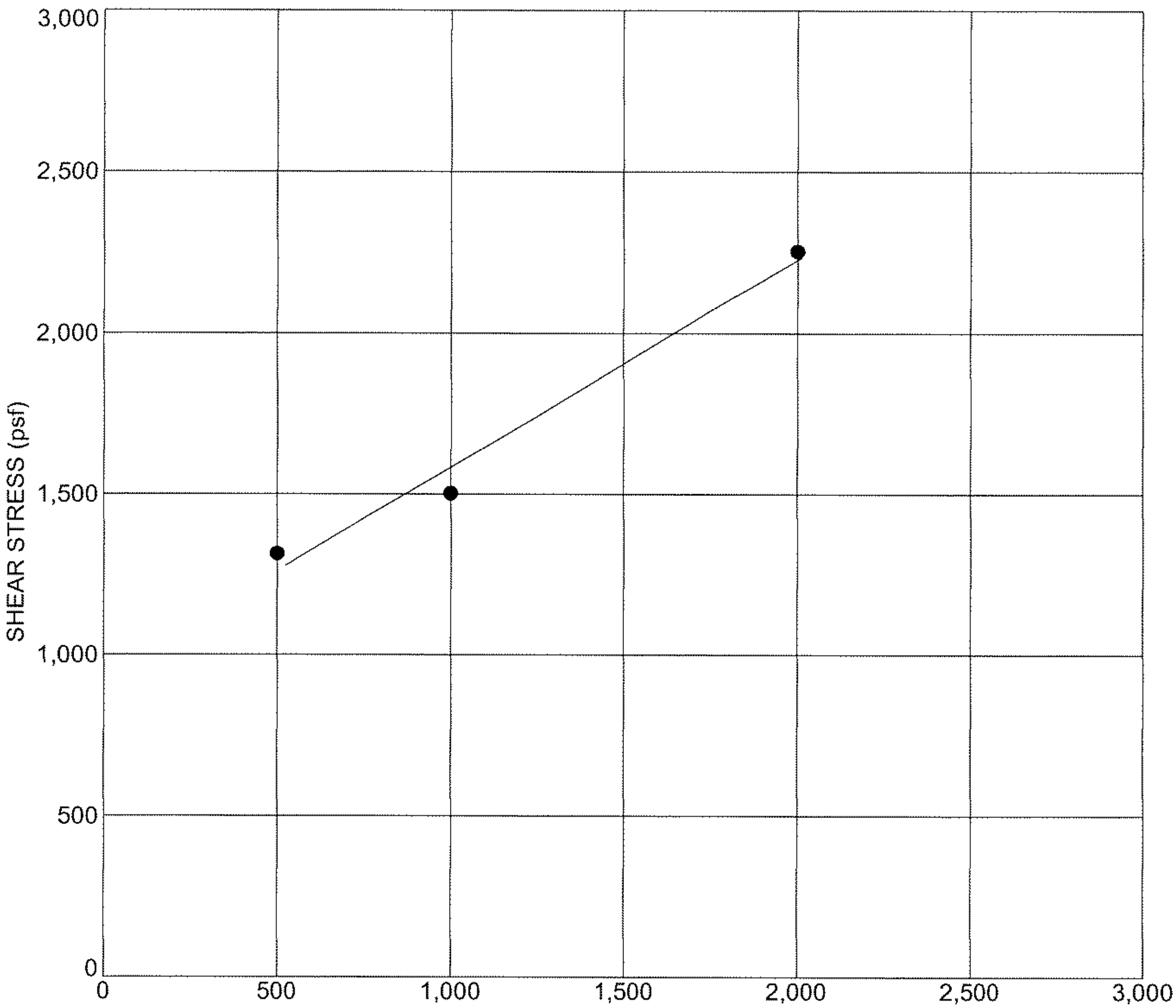
KLEINFELDER
Bright People. Right Solutions.

Drafted By: D. Anderson Project No.: 96004
Date: 9/5/2008 File Number: 96004logs

SIEVE ANALYSIS

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
2 of 2
B-3



SOURCE: KB- 5
DEPTH: 3.5 ft
SOIL DESCRIPTION:

FRICTION ANGLE = 33 deg
COHESION = 939.2 psf

FINAL DRY DENSITY (pcf)	89.7	91.5	91.2
INITIAL WATER CONTENT (%)	18.5	16.8	16.3
FINAL WATER CONTENT (%)	30.4	31.2	29.2
NORMAL STRESS (psf)	500	1000	2000
MAXIMUM SHEAR (psf)	1314.9	1502.7	2254.1

KLEINFELDER
Bright People. Right Solutions.

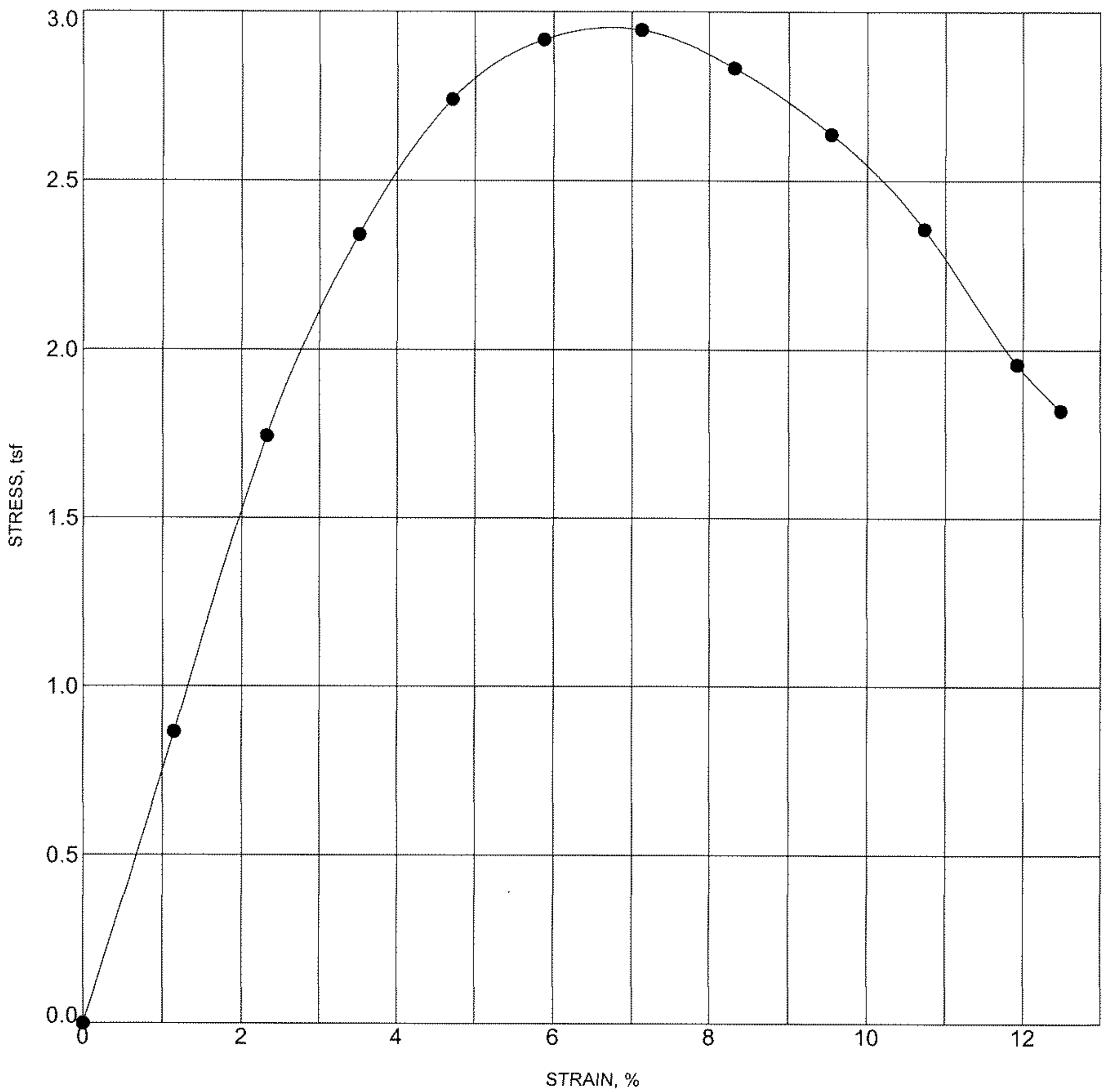
Drafted By: D. Anderson
Date: 9/24/2008
Project No.: 96004
File Number: 96004logs

DIRECT SHEAR TEST

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE
B-4

KA_DIRECT_SHEAR 96004LOGS.GPJ 9/24/08



Legend	Source	Depth	Description	DD (pcf)	MC (%)
●	**KB- 4**	**6.0**	**Fat CLAY (CH)**	**94**	**31**

KA_UNCONFINED 96004LOGS.GPJ 9/30/08

KLEINFELDER
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Drafted By: D. Anderson Project No.: 96004
Date: 9/30/2008 File Number: 96004logs

UNCONFINED COMPRESSION

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

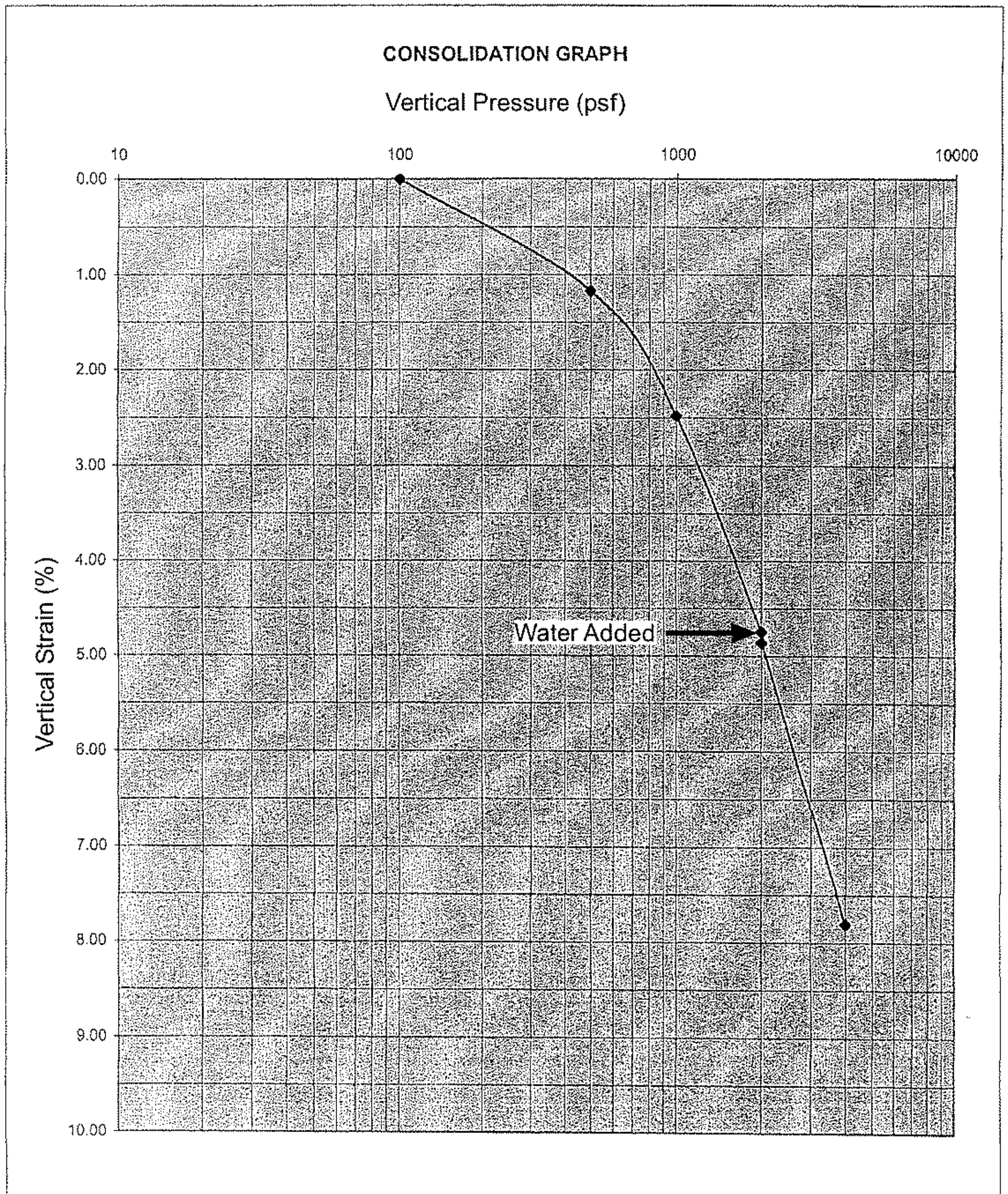
PLATE

B-5

Laboratory Test Data

Project Name: CDF Growlerburg CC
Project No.: 96004
Report Date: 9/15/2008
Sample No.: KB-4 1A
Sample Depth: 3.5'

Measurement of Collapse Potential of Soil (ASTM D 5333)

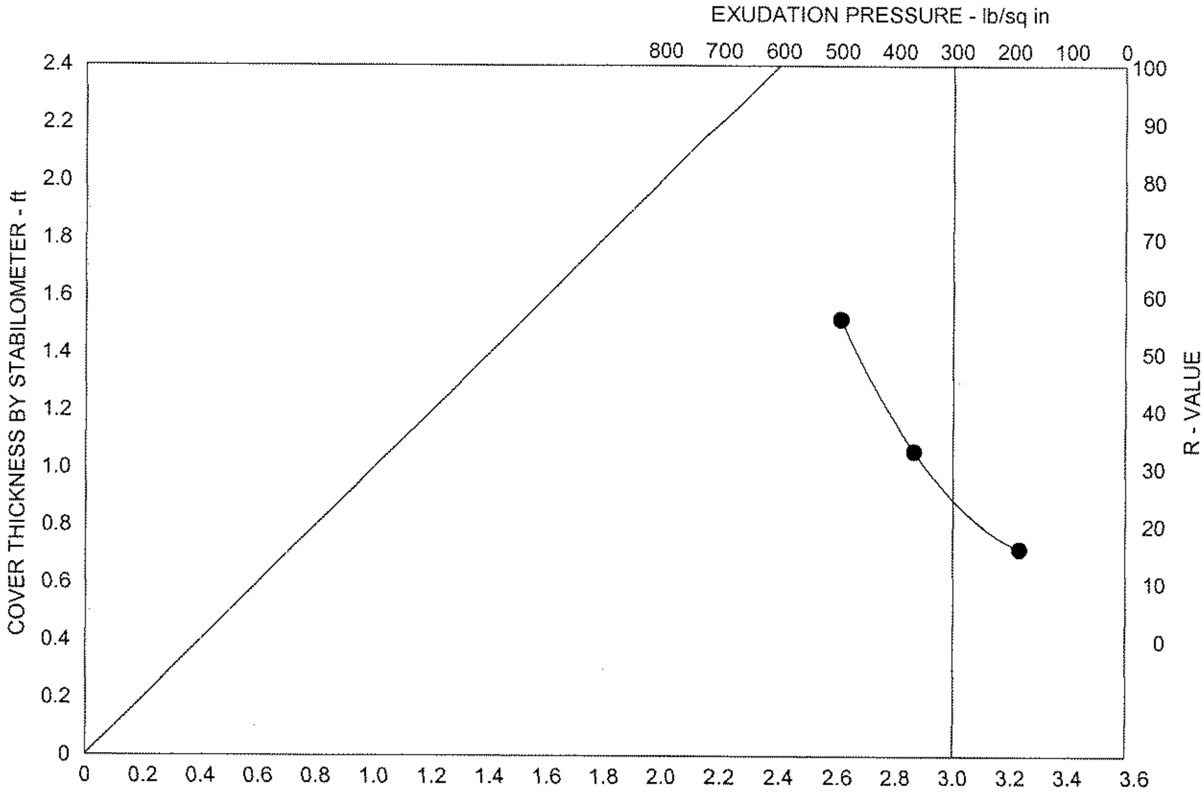


KLEINFELDER www.Kleinfelder.com	Project Number: 96004	COLLAPSE POTENTIAL	Plate
	Graphic Date: 9/22/08		B-6
	Graphic By: D. Anderson		
	Checked By: C. White	CAL FIRE GROWLERSBERG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	
	File Name: 96004CP.fh11		

SAMPLE LOCATION: TP-7 at 0 to 1 foot

SAMPLE DESCRIPTION: Fat CLAY with Sand (CH)

DATE SAMPLED: 8/12/2008



SPECIMEN	A	B	C
EXUDATION PRESSURE, lb/sq in	496	368	184
EXPANSION PRESSURE, lb/sq ft	234	74	9
RESISTANCE VALUE, R	56	33	16
MOISTURE AT TEST, %	22.2	23.2	25.1
DRY DENSITY AT TEST, lb/cu ft	102.2	99.6	98.4
R-VALUE AT 300 lb/sq in EXUDATION PRESSURE	**24**		

KA_R_VALUE 96004LOGS.GPJ 9/29/08

KLEINFELDER
Bright People. Right Solutions.

Drafted By: D. Anderson Project No.: 96004
Date: 9/29/2008 File Number: 96004logs

RESISTANCE VALUE

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

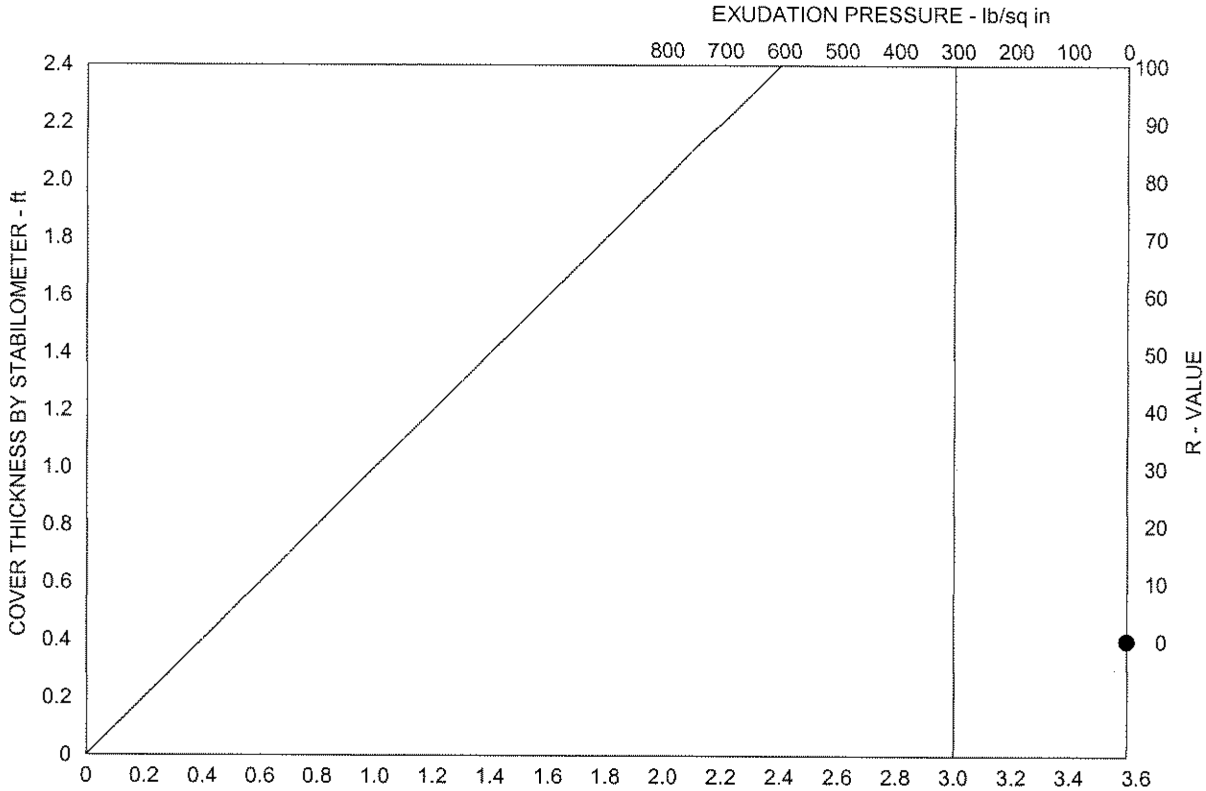
PLATE

B-7

SAMPLE LOCATION: Test Pit TP-15 at a depth of 1/2 to 1-1/2 feet

SAMPLE DESCRIPTION: Sandy Fat CLAY (CH)

DATE SAMPLED: 8/11/2008



SPECIMEN	A	B	C
EXUDATION PRESSURE, lb/sq in	0	0	0
EXPANSION PRESSURE, lb/sq ft	0	0	0
RESISTANCE VALUE, R	0	0	0
MOISTURE AT TEST, %	0	0	0
DRY DENSITY AT TEST, lb/cu ft	0	0	0
R-VALUE AT 300 lb/sq in EXUDATION PRESSURE	**<5**		

KA_R_VALUE 96004LOGS.GPJ 9/29/08

KLEINFELDER
Bright People. Right Solutions.

Drafted By: D. Anderson
Date: 9/29/2008
Project No.: 96004
File Number: 96004logs

RESISTANCE VALUE

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

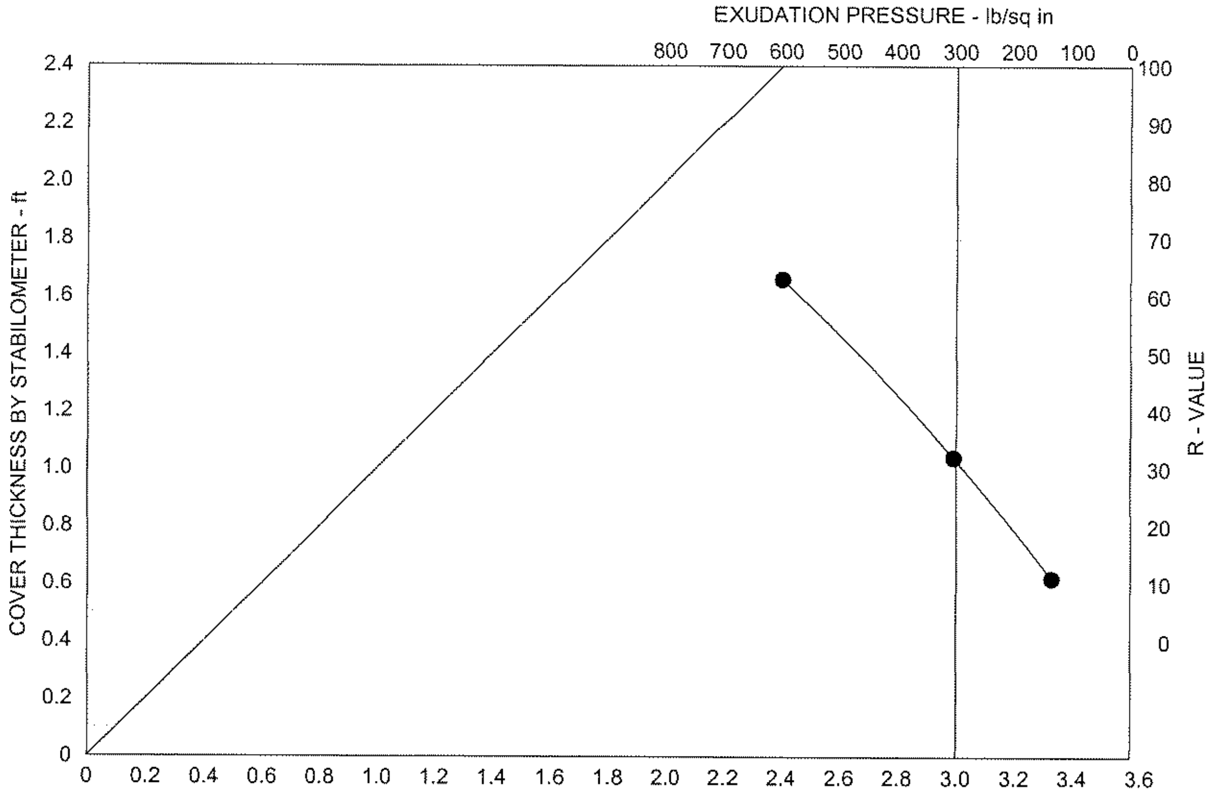
PLATE

B-8

SAMPLE LOCATION: Test Pit TP-20 at a depth of 1/2 to 1 foot

SAMPLE DESCRIPTION: Sandy Fat CLAY with Gravel (CH)

DATE SAMPLED: 8/11/2008



SPECIMEN	A	B	C
EXUDATION PRESSURE, lb/sq in	600	304	136
EXPANSION PRESSURE, lb/sq ft	390	121	30
RESISTANCE VALUE, R	63	32	11
MOISTURE AT TEST, %	17.5	19.5	21.4
DRY DENSITY AT TEST, lb/cu ft	109.5	107.7	105.0
R-VALUE AT 300 lb/sq in EXUDATION PRESSURE		**32**	

KA_R_VALUE 96004LOGS.GPJ 9/29/08

KLEINFELDER
Bright People. Right Solutions.

Drafted By: D. Anderson Project No.: 96004
Date: 9/29/2008 File Number: 96004logs

RESISTANCE VALUE

CAL FIRE GROWLERSBURG CONSERVATION CAMP
PROPOSED FACILITY REMODEL
GEORGETOWN, CALIFORNIA

PLATE

B-9

APPENDIX C
SEISMIC REFRACTION SURVEY METHOD AND RESULTS

METHODOLOGY

The seismic refraction method involves measuring the total time for compressional waves (P-waves) to travel from a shotpoint through the subsurface to a set of geophones placed along the ground. Based on Snell's law, when two or more layers are present with increasingly higher acoustic velocity, waves become critically refracted across the layer boundaries and begin traveling at the speed of the underlying layer. The advancing waves then generate new wavefronts that propagate back to the ground surface. The first surge of energy hitting the geophone is termed the "first arrival" and is depicted on the seismogram as a high angle deflection along each trace.

Recognition of direct wave arrivals (non-refracted) versus refracted waves is a key element of refraction interpretation. To assist this process, the first arrival times measured from the seismic records are plotted on graphs of time versus distance called Time-Distance (T-D) graphs. Based on changes in slope on the graphs, a preliminary layer number is assigned to each segment of the T-D graph. The layer assignments together with time, distance, and elevation data are input to a computer for additional processing to evaluate the layer velocities and depths of the layer boundaries.

DATA ACQUISITION AND FIELD PROCEDURES

Four seismic lines were completed at the site on August 28, 2008 in order to evaluate pertinent engineering geologic and geotechnical engineering characteristics of subsurface native soil and rock. The locations of the lines are shown on the Exploration Location Map, Plate 2.

Seismic refraction data were recorded with a Geometrics 12-channel SmartSeis, 32 bit digital stacking seismograph and twelve 14 Hz geophones spaced at 10-foot intervals along the line of survey. The stacking feature allowed repeated shots from one location to be stacked, thus improving the signal in areas with high background noise. The data were recorded with a record length of 128 mSec and a sample interval of 125 uSec. The digital records were stored on 3.5-inch disks and sample recordings were plotted in the field on paper directly from the seismograph.

A 10-pound sledgehammer was used to provide the source of seismic energy. A sledgehammer was selected for this survey because shots (impacts) could be repeated in a matter of seconds, versus other shot sources which require additional materials, time, and (in some cases) permits.

Lines 1 and 2 extended 120 feet each and ran approximately northwest-southeast, approximately parallel to the cut behind the machine shops to determine the depth of the soil and weathered bedrock. This provided for geophone spacing at 10-feet intervals. The seismic refraction line locations are shown on the Exploration Location Map, Plate 2.

Line 3 extended 120 feet northeast-southwest, and was set up in the approximate location of the cut and retaining wall for the northern parking lot. This provided for geophone spacing at 10-feet intervals. The seismic refraction line location is shown on the Exploration Location Map, Plate 2.

Line 4 extended 120 feet east-west, and was set up in the approximate location of the water storage tanks on the northwest side of the site. This provided for geophone spacing at 10-feet intervals. The seismic refraction line location is shown on the Exploration Location Map, Plate 2.

DATA PROCESSING AND MODELING

Interpretation of the seismic data was assisted by use of the SeisImager software program. Data were analyzed using the time-term procedures of the Reciprocal Method, which allowed the layer boundaries (travel times) to be picked manually. Using this method, the program calculates the apparent velocities from each shot by the inverse slope of the best-fit line through the layer boundaries (travel times). True velocities are then calculated using more sophisticated equations that include these apparent velocity values. The true velocities are those values presented herein for the individual layers.

SEISMIC REFRACTION RESULTS

Three seismic velocity layers were defined for each of the seismic lines performed for this study. The layer depths defined by the changes in the velocity profile for each of the seismic line performed and the average velocities for each of the layers defined by these boundaries are presented in Table C-1, below.

Layer boundaries and velocities presented are not definitive, but rather, represent averaged values across the entire line. Variations and gradations both along the length of the survey line and through the depth of the modeled layers should be anticipated.

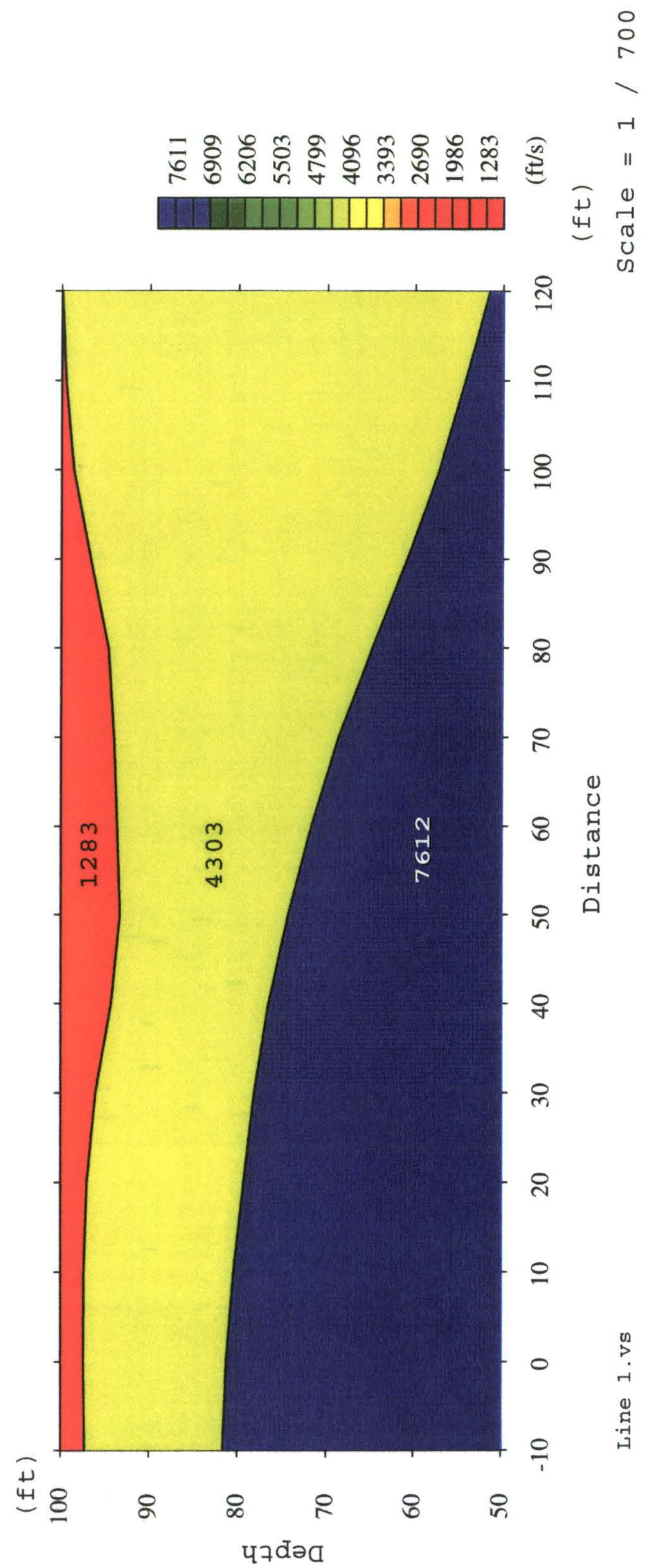
TABLE C-1
SUMMARY OF SEISMIC REFRACTION SURVEY RESULTS

Seismic Line	Approximate Layer Depths (below existing ground surface)	Approximate Velocities
Line 1	Layer 1 Bottom: 0-4 feet Layer 2 Bottom: 18-47 ft Total Depth: 50 feet	Layer 1 = 1,300 ft/s Layer 2 = 4,300 ft/s Layer 3 = 7,600 ft/s
Line 2	Layer 1 Bottom: 7-13 feet Layer 2 Bottom: 25-28 ft Total Depth: 50 feet	Layer 1 = 1,500 ft/s Layer 2 = 2,800 ft/s Layer 3 = 6,900 ft/s
Line 3	Layer 1 Bottom: 13-18 feet Layer 2 Bottom: 33-53 ft Total Depth: 55 feet	Layer 1 = 1,200 ft/s Layer 2 = 4,000 ft/s Layer 3 = 6,500 ft/s
Line 4	Layer 1 Bottom: 15-28 feet Layer 2 Bottom: 41-42 ft Total Depth: 70 feet	Layer 1 = 1,300 ft/s Layer 2 = 6,700 ft/s Layer 3 = 12,300 ft/s

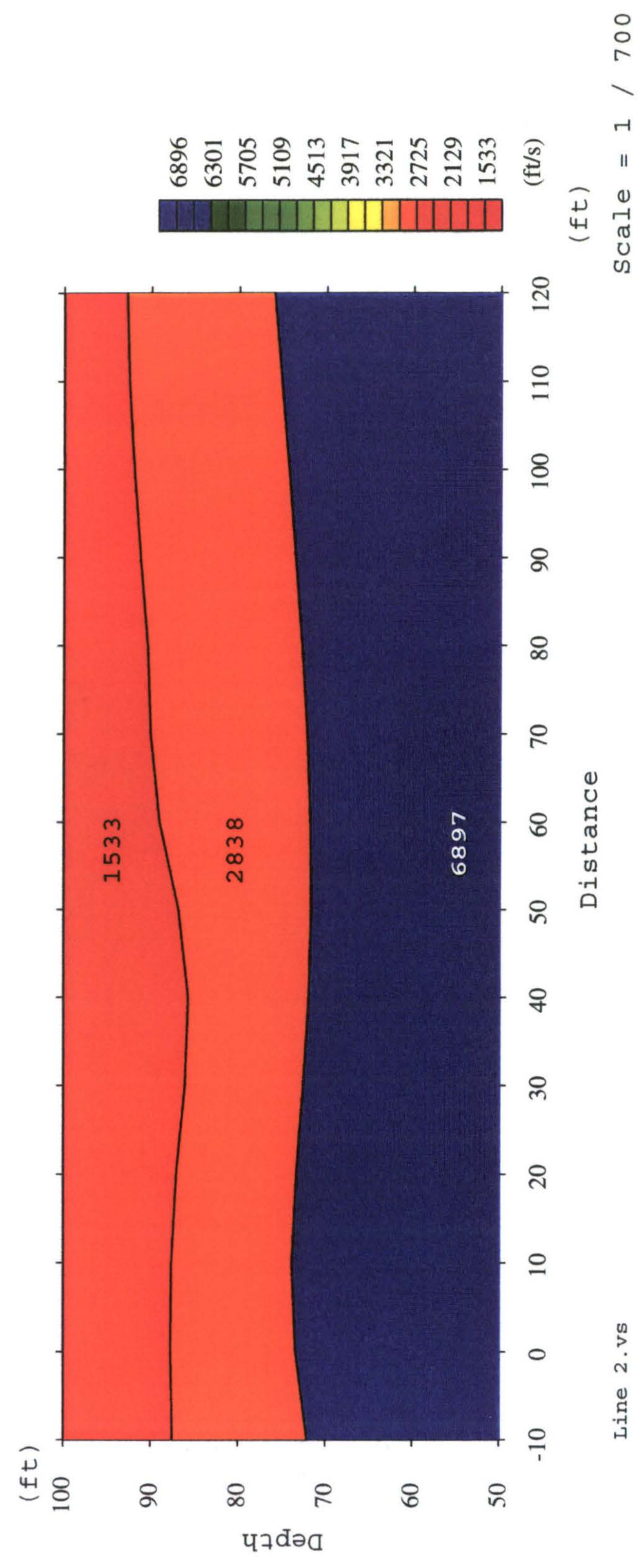
LIST OF ATTACHMENTS

The following plates are attached and complete this appendix.

Plate C-1 through C-4	Results for Seismic Refraction Survey Lines 1 through 4



KLEINFELDER www.Kleinfelder.com	Project Number: 96004 Graphic Date: 8/4/08 Graphic By: D. Anderson	**SEISMIC REFRACTION SURVEY** **LINE 1**	Plate C-1
	Checked By: C. White File Name: 96004sr1.fh11	CAL FIRE GROWLERSBERG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	



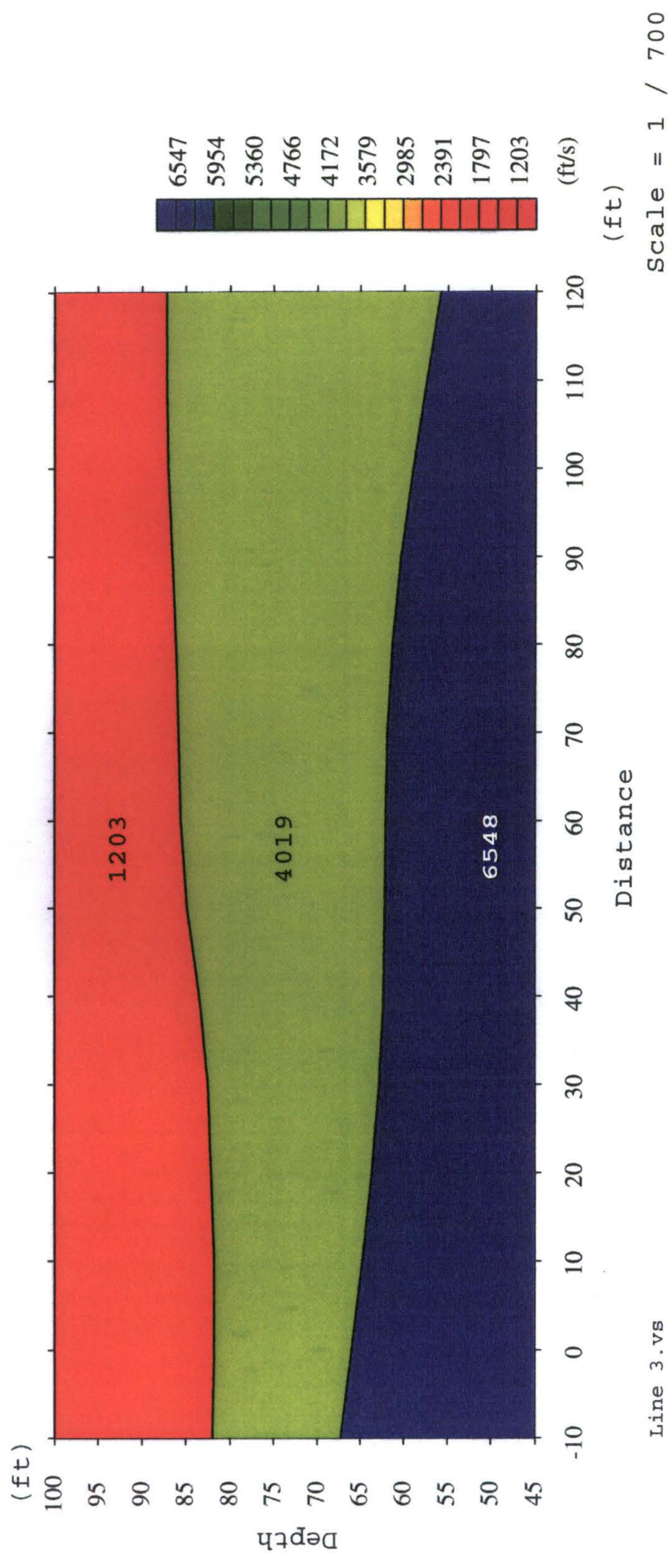
KLEINFELDER

www.Kleinfelder.com

Project Number: 96004	**SEISMIC REFRACTION SURVEY LINE 2**
Graphic Date: 8/4/08	
Graphic By: D. Anderson	
Checked By: C. White	CAL FIRE GROWLERSBERG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA
File Name: 96004sr2.fh11	

Plate

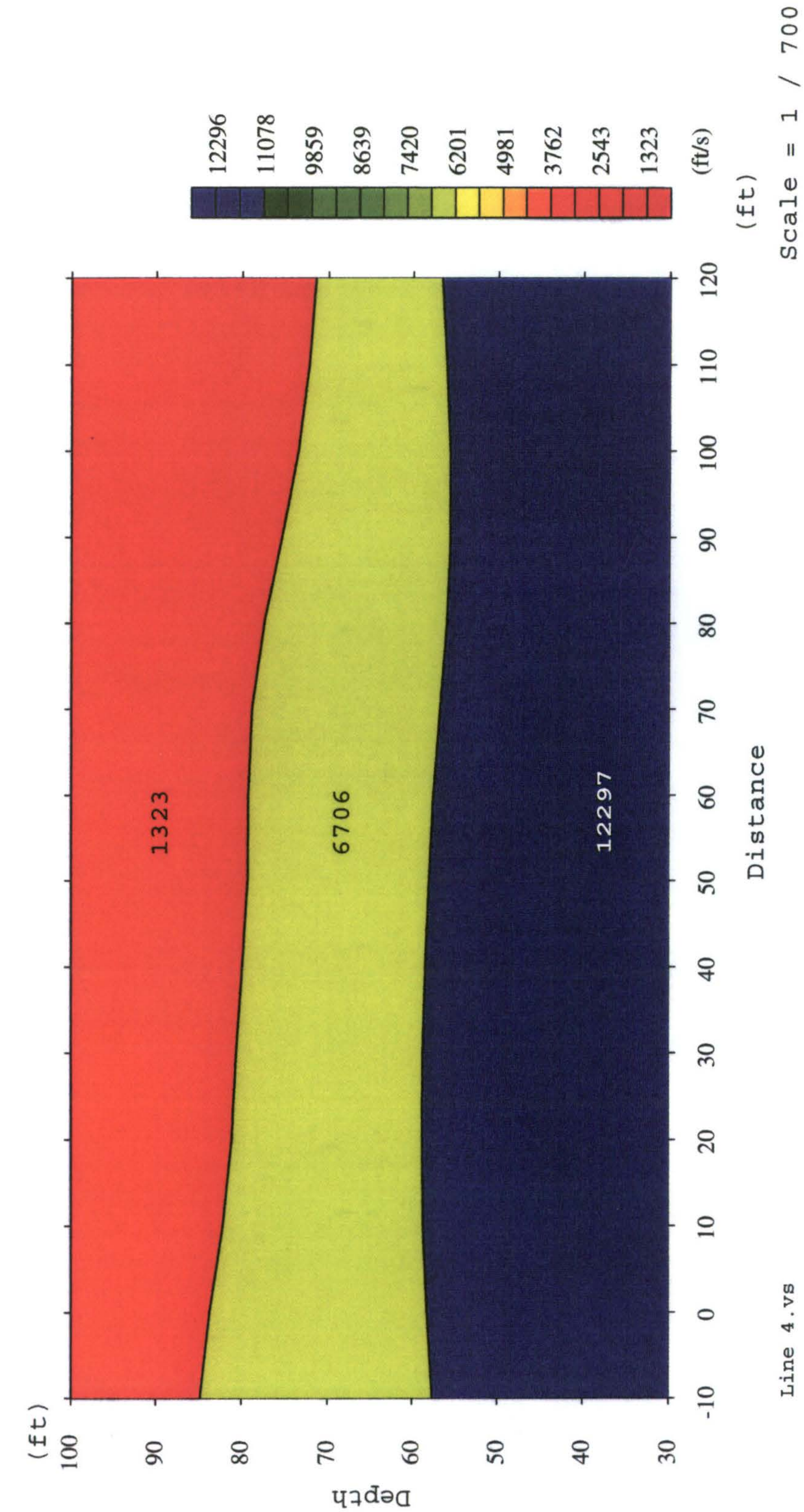
C-2



KLEINFELDER

www.Kleinfelder.com

Project Number: 96004	**SEISMIC REFRACTION SURVEY LINE 3**	Plate
Graphic Date: 8/4/08		C-3
Graphic By: D. Anderson		
Checked By: C. White	CAL FIRE GROWLERSBERG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	
File Name: 96004sr3.fh11		



KLEINFELDER www.Kleinfelder.com	Project Number: 96004	**SEISMIC REFRACTION SURVEY LINE 4**	Plate
	Graphic Date: 8/4/08		C-4
	Graphic By: D. Anderson		
	Checked By: C. White	CAL FIRE GROWLERSBERG CONSERVATION CAMP PROPOSED FACILITY REMODEL GEORGETOWN, CALIFORNIA	
	File Name: 96004sr4.fh11		

APPENDIX D
OUTSIDE LABORATORY TESTING REPORTS

LIST OF ATTACHMENTS

The following plates are attached and complete this appendix.

Soil Corrosion
Asbestos Analysis

Sunland Analytical
11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

AUG 21 2008

Date Reported 08/20/2008
Date Submitted 08/15/2008

To: Brad Von Dessonneck
Kleinfelder
3077 Fite Circle
Sacramento, CA 95827

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 96004/CDF Site ID : TP-1-2 @ 5'. 4.5
Thank you for your business.

* For future reference to this analysis please use SUN # 54195-108758.

EVALUATION FOR SOIL CORROSION

Soil pH	4.08		
Minimum Resistivity	16.62	ohm-cm (x1000)	
Chloride	16.0 ppm	00.00160	%
Sulfate	4.4 ppm	00.00044	%

METHODS
pH and Min.Resistivity CA DOT Test #643 Mod.(Sm.Cell)
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Sunland Analytical

11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 08/20/2008
Date Submitted 08/15/2008

To: Brad Von Dessonneck
Kleinfelder
3077 Fite Circle
Sacramento, CA 95827

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 96004/CDF Site ID : TP6-2 @ 6'.
Thank you for your business. 5.5

* For future reference to this analysis please use SUN # 54195-108759.

EVALUATION FOR SOIL CORROSION

Soil pH	4.35	
Minimum Resistivity	9.65 ohm-cm (x1000)	
Chloride	28.1 ppm	00.00281 %
Sulfate	1.9 ppm	00.00019 %

METHODS
pH and Min.Resistivity CA DOT Test #643 Mod.(Sm.Cell)
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Sunland Analytical
11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 08/20/2008
Date Submitted 08/15/2008

To: Brad Von Dessonneck
Kleinfelder
3077 Fite Circle
Sacramento, CA 95827

From: Gene Oliphant, Ph.D. \ Randy Horney R.H.
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 96004/CDF Site ID : TP10-1 @ 1'.
Thank you for your business. 0.5

* For future reference to this analysis please use SUN # 54195-108760.

EVALUATION FOR SOIL CORROSION

Soil pH	5.15	
Minimum Resistivity	8.58 ohm-cm (x1000)	
Chloride	12.6 ppm	00.00126 %
Sulfate	0.7 ppm	00.00007 %

METHODS
pH and Min.Resistivity CA DOT Test #643 Mod.(Sm.Cell)
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Sunland Analytical
11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 08/20/2008
Date Submitted 08/15/2008

To: Brad Von Dessonneck
Kleinfelder
3077 Fite Circle
Sacramento, CA 95827

From: Gene Oliphant, Ph.D. \ Randy Horney RH
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 96004/CDF Site ID : TP-15-2 @ 2'. 1.5
Thank you for your business.

* For future reference to this analysis please use SUN # 54195-108761.

EVALUATION FOR SOIL CORROSION

Soil pH	6.72	
Minimum Resistivity	1.37 ohm-cm (x1000)	
Chloride	12.3 ppm	00.00123 %
Sulfate	8.8 ppm	00.00088 %

METHODS
pH and Min.Resistivity CA DOT Test #643 Mod.(Sm.Cell)
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Sunland Analytical
11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 08/20/2008
Date Submitted 08/15/2008

To: Brad Von Dessonneck
Kleinfelder
3077 Fite Circle
Sacramento, CA 95827

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 96004/CDF Site ID : TP-19-2 @ 2'.
Thank you for your business. 1.01

* For future reference to this analysis please use SUN # 54195-108762.

EVALUATION FOR SOIL CORROSION

Soil pH	5.49	
Minimum Resistivity	2.63 ohm-cm (x1000)	
Chloride	15.3 ppm	00.00153 %
Sulfate	5.6 ppm	00.00056 %

METHODS
pH and Min.Resistivity CA DOT Test #643 Mod.(Sm.Cell)
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Sunland Analytical
11353 Pyrites Way, Suite 4
Rancho Cordova, CA 95670
(916) 852-8557

Date Reported 08/20/2008
Date Submitted 08/15/2008

To: Brad Von Dessonneck
Kleinfelder
3077 Fite Circle
Sacramento, CA 95827

From: Gene Oliphant, Ph.D. \ Randy Horney RH
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 96004/CDF Site ID : TP-24-3 @ 5'. 4.5
Thank you for your business.

* For future reference to this analysis please use SUN # 54195-108763.

EVALUATION FOR SOIL CORROSION

Soil pH	6.10	
Minimum Resistivity	2.68 ohm-cm (x1000)	
Chloride	6.1 ppm	00.00061 %
Sulfate	3.3 ppm	00.00033 %

METHODS
pH and Min.Resistivity CA DOT Test #643 Mod.(Sm.Cell)
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

Forensic Analytical

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Kleinfelder Inc
Brad Von Dessonneck

3077 Fite Cir
Sacramento, CA 95827

Client ID: 1257
Report Number: N001005
Date Received: 09/05/08
Date Analyzed: 09/12/08
Date Printed: 09/12/08

Job ID/Site: Growlerburg CC - 96004

FASI Job ID: 1257

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
1	10794953	**Red-Brown Soil**

Visual Estimation Results:

Layer percentage of entire sample:	100
Visual estimation percentage:	None Detected
Asbestos type(s) detected:	None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Sample ID	Lab Number	Layer Description
2	10794954	**Brown Soil**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Layer percentage of entire sample:	100
Percent asbestos in layer:	< 0.25
Visual estimation percentage:	Trace
Asbestos type(s) detected:	Actinolite

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

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Forensic Analytical

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Kleinfelder Inc		**Client ID:**	1257
Brad Von Dessonneck		**Report Number:**	N001005
		Date Received:	09/05/08
3077 Fite Cir		**Date Analyzed:**	09/12/08
Sacramento, CA 95827		**Date Printed:**	09/12/08
Job ID/Site:	Growlerburg CC - 96004	**FASI Job ID:**	1257

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
3	10794955	**Brown Soil**

Point Count Results:

Number of asbestos points counted:	0
Number of non-empty points:	400
Layer percentage of entire sample:	100
Percent asbestos in layer:	< 0.25
Visual estimation percentage:	Trace
Asbestos type(s) detected:	Actinolite

Comment: Asbestos was detected but no points were counted due to counting criteria. Therefore quantitation deemed to be < 0.25%.

Sample ID	Lab Number	Layer Description
Tank	10794956	**Grey Stones**

Point Count Results:

Number of asbestos points counted:	5
Number of non-empty points:	400
Layer percentage of entire sample:	100
Percent asbestos in layer:	1.3
Visual estimation percentage:	Trace
Asbestos type(s) detected:	Chrysotile

Comment:

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Forensic Analytical

Final Report

Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

Kleinfelder Inc		**Client ID:**	1257
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		Date Received:	09/05/08
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Sacramento, CA 95827		**Date Printed:**	09/12/08

Job ID/Site: Growlerburg CC - 96004 **FASI Job ID:** 1257

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
Stockpile	10794957	**Grey Stones**

Visual Estimation Results:

Layer percentage of entire sample:	100
Visual estimation percentage:	12.0
Asbestos type(s) detected:	Chrysotile

Comment: This result meets the requirements of Exception II as defined by the 435 Method.

Jim Flores

James Flores, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 0.25%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

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APPENDIX F2

Limited Geotechnical Engineering Report, Wallace-Kuhl & Associates, September 2, 2020.

Limited Geotechnical Engineering Report

CALIFORNIA DEPARTMENT OF GENERAL SERVICES

GROWLERSBURG CONSERVATION CAMP

WKA No. 12811.01P

September 2, 2020

Prepared for:

Lionakis

1919 Nineteenth Street

Sacramento, California 95811

Limited Geotechnical Engineering Report

CALIFORNIA DEPARTMENT OF GENERAL SERVICES

GROWLERSBURG CONSERVATION CAMP

WKA No. 12811.01P

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Limited Geotechnical Engineering Report
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP
5440 Longview Lane
Georgetown, El Dorado County, California
WKA No. 12811.01P
September 2, 2020

INTRODUCTION

As authorized, we have completed a “limited” geotechnical study for the proposed Cal Fire Growlersburg Conservation Camp located at 5440 Longview Drive in Georgetown, El Dorado County, California. The purpose of our “limited” study has been to evaluate the applicability of the *Geologic Hazards Evaluation and Geotechnical Investigation Report* prepared for the project site by Kleinfelder, Inc. of Sacramento, California (their File No. 96004, dated December 15, 2008.

Our study has been performed in general conformance with our revised *Geotechnical Engineering Services Proposal*, dated April 21, 2020, and authorized on August 12, 2020. Specifically, our scope of services has included the following services:

- Perform a site reconnaissance;
- Collect of six representative bulk samples of near surface soil;
- Perform laboratory testing on selected bulk samples for various geotechnical soil properties;
- Review Kleinfelder’s *Geologic Hazards Evaluation and Geotechnical Investigation Report*
- *Perform* engineering analyses of the data collected; and,
- Prepare this report.

<u>Previous Studies</u>

Supplemental information reviewed for this study included review of the following documents prepared for the site:

- Kleinfelder, Inc. 2008a, *Preliminary Geotechnical Recommendations*. Growlersburg Conservation Camp, Georgetown, California: Kleinfelder, Inc., File No. 96004, pp. 5;

- Kleinfelder, Inc. 2008b, *Geologic Hazards Evaluation and Geotechnical Investigation Report*. CalFire Growlersburg Conservation Camp Remodel, Georgetown, California: Kleinfelder Inc. File No. 96004, pp. 169.; and,
- Lionakis, 2008, 75 Percent Design Development. *Growlersburg Conservation Camp Remodel*. Georgetown, California: Lionakis.

Proposed Improvements

We understand the project will involve razing the existing buildings and construct new buildings with associated site work. Project elements include, but are not limited to, an administrative building, inmate dorm building, inmate recreation building, inmate hobby building, CDCR/CDF barracks building, inmate kitchen & mess hall, multi-purpose facility for inmate programs, inmate staging area/restrooms & showers, warehouse, carpentry shop, auto/welding shop, vehicle storage building, sawmill shed, sawmill building, planer/assembly building including dry kilns, pole barn, generator/pump/storage building, covered vehicle wash rack, and vehicle wash recycling building. Site work includes, but is not limited to, demolition, clearing and grubbing, grading, paving, site retaining walls, new domestic use water distribution system, new fire water distribution system including above ground water storage tanks, new sewer collection system, new propane tank and LPG distribution piping, storm drainage, utility connections and distribution, covered parking integrating photovoltaic panels, security fencing and gates, site lighting, communications tower, hose wash rack, above-ground vaults with dispensing system, fuel storage tanks and distribution, signage, equipment storage areas, and landscaping. The project will be Leadership in Energy and Environmental Design (LEED) Silver certified at a minimum and meet Zero Net Energy (ZNE) requirements. Demolition of the existing systems may involve asbestos and lead containing materials or other hazardous materials requiring abatement design, air monitoring and observation.

FINDINGS

Site Reconnaissance, Field Sampling, and Laboratory Testing

The Growlersburg Conservation Camp is located southwest of Reservoir Court, near the intersection of Reservoir Court and Longview Lane in El Dorado County, California. The site is bounded on all sides by rural properties. The site gently slopes to the southwest, and has many cut and fill pads for existing structures, asphalt concrete roads, and recreational areas.

On July 15, 2020, an engineer from our office performed a site reconnaissance to observe the site conditions. The site includes dormitories, administration buildings, automobile service buildings, portable classrooms, and multiple outbuildings. The site has asphalt concrete driveways along with Portland cement driveways throughout. There are also four detention ponds on the southern portion of the site.

At the time of our site reconnaissance, six bulk samples were collected and brought back to our laboratory for analyses including Atterberg Limits testing in accordance with American Society of Testing and Materials (ASTM) D4318 test method, Expansion Index testing in accordance with ASTM D4829 test method, and Resistance (“R”)-value testing in accordance with California Test 301.

Historical Aerial Photographs

We reviewed historical aerial photographs of the site available from the Google Earth website and historicaerials.com. Available photographs were taken in the years 1946, 1993, 1998 through 2016, and 2018. In the photographs from 1946, the area was moderate to dense forest land. The photographs from 1993 through 2018, show the site similar to the condition during our site visit on July 15, 2020.

Site Geology

The site is located on the western slope the Sierra Nevada geomorphic province. The 450-mile long Sierra Nevada is a 40- to 50-mile wide west dipping fault block consisting of a series of uplifted Mesozoic granitic batholiths overlain by metamorphic and volcanic units. Elevations in the range extend from 400 feet in the western foothills up to 14,000 feet on its eastern edge where extensional block faulting of the basin and range province has produced high peaks and dramatic relief. Steep, rocky faces and glacier carved valleys feed high-energy streams descending to rolling foothills, where plutonic and metamorphosed rock abut flat-lying alluvial sediments of the province’s western boundary with the Great Valley. (Norris and Webb, 1990).The Sierran block extends west beneath the Cenozoic alluvium of the Great Valley to presumably contact the Eastern Franciscan Formation of the Coast Ranges.

The complex structure of the Sierra Nevada is reflective of its equally complex geologic history. Faulting in the western Sierra Nevada Mountains trends North-northwest.

According to the *Geologic map of the Sacramento quadrangle, California, 1:250,000: California Division of Mines and Geology, Regional Geologic Map 1A,* the Paleozoic-aged Calaveras Complex volcanic rock (Pzcv) formations underlie the site. The geologic materials that comprise this formation is primarily metasedimentary rock and volcanic rock. The mapped geology was found to be generally consistent with the subsurface soil conditions encountered within the borings performed across the site by Kleinfelder during their 2008 study.

Subsurface Soil Conditions

Based on our “limited” field sampling, the surface and near-surface soils consisted of reddish brown, silty sand with traces of clay to the explored depth of three feet below site grades. Review of the subsurface conditions encountered by Kleinfelder indicates that native clayey and silty colluvial soil and residual sandy soil to depths ranging from 3 to 10 feet below existing grades underlain by weathered metavolcanic rock. Kleinfelder reportedly encountered fill soil in several areas on site to depths ranging from one to five feet below existing grades. The fill soils ranged between one to five feet and were underlain by native and/or weathered rock.

Groundwater

Permanent groundwater was not observed in the samples performed on July 24, 2019. Based on our experience in the area, groundwater is anticipated to be at depths greater than 50 feet below the ground surface.

CONCLUSIONS

Building Support

Our study, along with Kleinfelder’s 2008 study, indicates that the underlying native soils are considered capable of supporting the planned improvements, provided the recommendations of this report are carefully followed. These studies also indicate new engineered fill that is properly placed and compacted in accordance with the recommendations of this report will be capable of supporting the proposed structures and pavements.

The buildings should not be supported upon cut/fill or fill differentials that exceed five feet in depth. Over-excavation and compaction of the building pad would be required to limit the differential fill depths on the building pad with differential fill depths greater than five feet. Over-excavation may also be required in seasonal drainages and ponds located in the proposed development areas.

Following site clearing activities, we anticipate the upper foot of soils will become disturbed. Recommendations for moisture conditioning, ripping and cross-ripping and compaction of the site have been provided in this report.

2019 California Building Code Seismic Design Parameters

Previous work by Kleinfelder West, Inc. (2008) indicates that underlying metavolcanic typically classifies as Site Class C. This is consistent with the explored portions of the subsurface and the geology at the site. Based on this, we have assigned CBC Site Class C for the subject site.

The 2019 *California Building Code* (CBC) references the *American Society of Civil Engineers (ASCE), Minimum Design Loads and Associated Criteria for Buildings and Other Structures 7-16*. To assist with the structural design of the project, we have provided seismic design parameters for the 2019 CBC, which have been determined based on the site location and the web interface developed by the *Structural Engineers Association of California* (SEAOC) and the *Office of Statewide Health Planning and Development* (OSHPD) (https://seismicmaps.org).

The following seismic design parameters summarized below may be used for seismic design of the planned improvements at the site.

TABLE 2
2019 CBC/ASCE 7-16 SEISMIC DESIGN PARAMETERS

Latitude: 38.9033° N Longitude: 120.8700° W	ASCE 7-16 Table/Figure	2019 CBC Figure/Section/Table	Factor/ Coefficient	2019 CBC Values
0.2-second Period MCE	Figure 22-1	Figure 1613.2.1(1)	S_S	0.476 g
1.0 second Period MCE_R	Figure 22-2	Figure 1613.2.1(2)	S_1	0.213 g
Soil Class	Table 20.3-1	Section 1613.2.2	Site Class	C
Site Coefficient	Table 11.4-1	Table 1613.2.3 (1)	F_a	1.300
Site Coefficient	Table 11.4-2	Table 1613.2.3(2)	F_v	1.500*
Adjusted MCE Spectral Response Parameters	Equation 11.4-1	Equation 16-36	S_{MS}	0.619 g
	Equation 11.4-2	Equation 16-37	S_{M1}	0.320 g*
Design Spectral Acceleration Parameters	Equation 11.4-3	Equation 16-38	S_{DS}	0.412 g
	Equation 11.4-4	Equation 16-39	S_{D1}	0.213 g*
Seismic Design Category	Table 11.6-1	Table 1613.2.5(1)	Risk Category I, II, or III	C
	Table 11.6-1	Table 1613.2.5(1)	Risk Category IV	D
	Table 11.6-2	Table 1613.2.5(2)	Risk Category I - IV	D

Notes: MCE_R = Risk-Targeted Maximum Considered Earthquake: g = gravity
* = The value is valid provided the requirements in Exception Note No. 2 in Section 11.4.8 of ASCE 7-16 are met. If not, a site-specific ground motion hazard analysis is required.

Soil Expansion Potential

Based on the laboratory test results performed by Kleinfelder in 2008, they conclude the native clays are capable of exerting significant expansion pressures on building foundations, interior floor slabs and exterior flatwork.

Laboratory tests performed on samples of near-surface soils collected during our site reconnaissance, July 15, 2020, indicates the soil to be non-plastic when subjected to Atterberg Limits tests in accordance with ASTM D4318 test method (Figure 3). Additional laboratory tests conducted on samples of the near-surface soils indicate these materials possess “very low” to “low” expansion potential when tested in accordance with ASTM D4829 test method (Figures 4 through 7).

Based on the laboratory test results, we conclude that clay may be encountered during construction and are capable of exerting significant expansion pressures on building foundations, interior floor slabs and exterior flatwork.

The recommendations to mitigate the effects of potentially expansive clays provided in 2008 Kleinfelder report do remain applicable.

Soil Suitability for Engineered Fill Construction

The existing on-site soils encountered are considered suitable for use as engineered fill construction, provided these materials do not contain significant quantities of organics, rubble and deleterious debris, and are at a proper moisture content capable of achieving the desired degree of compaction.

Pavement Subgrade Quality

Laboratory testing of the anticipated near-surface pavement subgrade soils collected on July 15, 2020 indicate good quality materials for support of asphalt concrete pavements. Resistance ("R") values ranging from 60 to 68 were obtained on a near-surface soil samples tested in accordance with California Test 301. Therefore, for preliminary design purposes, we have used R-values of 40 for the calculation of alternative pavement sections. The Resistance-value test results are presented in Figures 9 through 12.

The recommendations to mitigate the effects of potentially expansive clays, if found during construction, provided in 2008 Kleinfelder report do remain applicable.

Soil Corrosion Potential

Two soil samples were tested to determine resistivity, pH, chloride, and sulfate concentrations to help evaluate the potential for corrosive attack upon reinforced concrete and buried metal. The results of the corrosivity testing are summarized in Table 1. Copies of the corrosion potential test results performed by Sunland Analytical are presented on Figures 9 through 12.

TABLE 1
SOIL CORROSIVITY TESTING RESULTS

Analyte	Test Method	B2 (0'-3')	B6 (0'-3')
pH	CA DOT 643 Modified*	6.32	5.56
Minimum Resistivity	CA DOT 643 Modified*	3,220 Ω-cm	5,360 Ω-cm
Chloride	CA DOT 422	6.2 ppm	4.4 ppm
Sulfate	CA DOT 417	4.5 ppm	3.8 ppm
	ASTM D516M	4.9 mg/kg	3.9 mg/kg

* = Small cell method; Ω-cm = Ohm-centimeters; ppm = Parts per million, mg/kg = milligrams per kilogram

The California Department of Transportation Corrosion and Structural Concrete Field Investigation Branch, Corrosion Guidelines, Version 3.0, dated March 2018, considers a site to be corrosive to foundation elements if one or more of the following conditions exists for the representative soil and/or water samples taken: has a chloride concentration greater than or equal to 500 ppm, sulfate concentration greater than or equal to 2000 ppm, or the pH is 5.5 or less. Based on this criterion, the on-site soils tested are not considered corrosive to steel reinforcement properly embedded within Portland cement concrete (PCC).

Table 19.3.1.1 – Exposure Categories and Classes, of American Concrete Institute (ACI) 318-19, Section 19.3 – Concrete Durability Requirements, as referenced in Section 1904.1 of the 2019 CBC, indicates the severity of sulfate exposure for one of the samples tested is Exposure Class S0. Exposure Class S0 is assigned for conditions where the water-soluble sulfate concentration in contact with concrete is low and injurious sulfate attack is not a concern. The project structural engineer should review the requirements of ACI 318 and determine their applicability to the site.

Wallace-Kuhl & Associates are not corrosion engineers. Therefore, if it is desired to further define the soil corrosion potential at the site a corrosion engineer should be consulted.

Groundwater

Based upon our experience and the underlying bedrock in the vicinity, permanent groundwater level should not to be a significant factor, although perched groundwater could be present in the winter and spring after significant rainfall events and may need to be considered in the construction of the proposed structures and shallow utilities.

Seasonal Water

During the wet season, infiltrating surface runoff water can create saturated surface conditions. Grading operations attempted following the onset of winter rains and prior to prolonged drying periods will be hampered by high soil moisture contents. Soils located beneath existing pavements and slabs will likely be at elevated moisture contents regardless of the time of year of construction and also will require drying. Wet soils should be anticipated and considered in the construction schedule for this project. Such soils, intended for use as engineered fill, will require considerable aeration and/or drying to reach a moisture content that will permit the soils to be properly compacted.

RECOMMENDATIONS

Based on review of the previous reports, recent site observations, lab test results, and understanding of the proposed construction, we conclude that the recommendations contained in the 2008 *Geologic Hazards Evaluation and Geotechnical Investigation Report* prepared by Kleinfelder remain generally applicable for design and construction of the conservation camp, with the following amended conclusions and recommendations.

General

The recommendations presented below are appropriate for typical construction in the late spring through fall months. The on-site soils likely will be saturated by rainfall in the winter and early spring months, and will not be compactable without drying by aeration or chemical treatment. Should the construction schedule require work to begin during the wet months, additional recommendations can be provided, as conditions dictate.

Site preparation should be accomplished in accordance with the provisions of this report. A representative of the Geotechnical Engineer should be present during all earthwork operations to evaluate compliance with the recommendations included in this report. The Geotechnical Engineer of Record referenced herein should be considered the Geotechnical Engineer that is retained to provide geotechnical engineering observation and testing services during construction.

The recommendations to mitigate the effects of potentially expansive clays, if encountered during construction, provided in 2008 Kleinfelder report do remain applicable.

Site Clearing

Prior to site grading, construction areas should be cleared of any existing structures designated for removal, including but not limited to, asphalt concrete pavements, vegetation, and utilities to be relocated or abandoned to expose firm and stable soils. All debris should be removed from the site. Where practical, the clearing should extend a minimum of five feet beyond the limits of the proposed structural areas of the site. Existing underground utilities, if any, need to be removed or relocated and should include the removal of all trench backfill.

Underground utilities within the proposed construction areas should be completely removed, rerouted, or properly abandoned (i.e., fully grouted provided the abandoned utility is situated at least 2½ feet below the final subgrade level to reduce the potential for localized “hard spots”). Depressions resulting from removal of underground utilities should be cleaned of loose soil and properly backfilled in accordance with the recommendations of this report.

Shrubs and/or trees designated for removal should include the entire rootball and all roots larger than ½-inch in diameter. Adequate removal of debris and roots may require laborers and handpicking to clear the subgrade soils to the satisfaction of the Geotechnical Engineer’s representative. Although not encountered or observed at the site, on-site wells and septic systems, if present, should be abandoned in accordance with El Dorado County Environmental Management Department requirements.

Existing pavements and flatwork (asphalt concrete and concrete) that are not incorporated into the new design should be broken up and removed from the site. Alternatively, pulverized asphalt and Portland cement concrete rubble may be used as fill provided it is processed into fragments less than three inches in largest dimension, is mixed with soil to form a compactable mixture, and approved by the District.

Depressions resulting from site clearing operations, as well as any loose, soft, disturbed, saturated, or organically contaminated soils, as identified by the Geotechnical Engineer’s representative, should be cleaned out to firm, undisturbed soils and backfilled with engineered fill in accordance with the recommendations of this report. Our representative be present during site clearing activities to verify the adequate removal of surface and subsurface structures.

Subgrade Preparation

Following site clearing activities, the exposed soils, as well as other areas outside of the buildings to receive fill or to remain at-grade that will support structures (i.e., pavements, flatwork, etc.), should be thoroughly ripped and cross-ripped to a depth of at least 12 inches for a distance of five feet beyond the building perimeter and at least two feet beyond pavements and flatwork. The intent of this recommendation is to expose any buried remnants from previous construction. The exposed grade should be thoroughly moisture conditioned to at least the optimum moisture content, and uniformly compacted to not less than 90 percent of the ASTM D1557 maximum dry density.

Sloping ground steeper than four horizontal to one vertical (4H:1V) should be benched prior to receiving engineered fill. A level terrace excavated horizontally at least two feet into the sloping ground should be done progressively up the side of the sloping ground at vertical increments not exceeding two feet. Fill placed on slopes that are steeper than four horizontal to one vertical (4H:1V), should be keyed into the natural ground at the toe of the fill slope. The toe key should be at least five feet wide, but should be widened as necessary to allow complete compaction of the entire base of the key by the compaction equipment used, centered along the toe of the fill slope, and extend at least two feet into undisturbed soil as verified by the Geotechnical Engineer. The bottom of the keyway should slope downwards toward the slope on which fill is to be placed.

Once the depth of the key is approved, the bottom should be scarified to a depth of at least 12 inches, moisture conditioned and uniformly compacted to at least 90 percent of maximum dry density. Each lift should be benched at least 12 inches horizontally into the side of the slope. For every five feet of vertical height of fill, a larger bench should be constructed, extending at least five feet into the adjacent slope.

Compaction of the existing grade must be performed in the presence of our representative who will evaluate the performance of the subgrade under compactive loads and identify any loose or unstable soil conditions that could require additional excavation. The resulting excavations should be backfilled with engineered fill as described in the Engineered Fill Construction section of this report. Compaction should be achieved using a heavy, self-propelled sheepsfoot compactor.

Engineered Fill Construction

Engineered fill consisting of on-site or import materials should be placed in lifts not exceeding six inches in compacted thickness, with each lift being thoroughly moisture conditioned to at least two percent above the optimum moisture content for clay soils and to the optimum moisture content for granular soils (import fill materials), maintained in that condition, and uniformly compacted to at least 90 percent relative compaction.

Imported fill materials, where required, should be similar to but less expansive than native soils, and should not contain particles greater than three inches in maximum dimension. In addition, the contractor should provide certification for any imported fill materials that designates the fill materials do not contain known contaminants per Department of Toxic Substances Control's guidelines for clean fill, and have corrosion characteristics within acceptable limits. Imported soils should be approved by the Geotechnical Engineer <u>prior</u> to being transported to the site.

The upper 12 inches of final building pad subgrades should be thoroughly moisture conditioned to at least two percent above the optimum moisture content and uniformly compacted to at least 90 percent relative compaction, regardless of whether final subgrade elevations is completed by excavation, filling, or left at existing grade.

The upper six inches of untreated pavement subgrade soils should be compacted to at least 95 percent relative compaction at the optimum moisture content, regardless of whether final subgrade is completed by excavation, filling, or left at existing grade. Final subgrade preparation and compaction should be performed just prior to placement of aggregate base, after underground construction is complete.

Subgrades for support of concrete foundation slabs and exterior flatwork should be maintained in a moist condition (at least two percent above the optimum moisture content) and protected from disturbance or desiccation until covered by capillary break material or aggregate base. Disturbed subgrade soils may require additional moisture conditioning, scarification and recompaction, depending on the level of disturbance.

Permanent excavation and fill slopes should be constructed no steeper than two horizontal to one vertical (2H:1V) and should be vegetated as soon as practical following grading to minimize erosion. As a minimum, the following erosion control measures should be considered: placement of straw bale sediment barriers or construction of silt filter fences in areas where surface run-off may be concentrated. Slopes should be over-built and cutback to design grades and inclinations. The final decision of erosion control measures should be made by the Project Stormwater Pollution Prevention Plan Engineer.

We recommend the Geotechnical Engineer's representative be present on a regular basis during <u>all</u> earthwork operations to observe and test the engineered fill and to verify compliance with the recommendations of this report and the project plans and specifications.

Utility Trench Backfill

Utility trench backfill should be mechanically compacted as engineered fill in accordance with the following recommendations. Bedding and initial backfill around and over the pipe should conform to the pipe manufacturers recommendations for the pipe materials selected and applicable sections of the governing agency standards.

We recommend that native, on-site soil be used as trench backfill. Utility trench backfill should be placed in thin lifts, thoroughly moisture conditioned to at least two percent above the optimum moisture content, and compacted to at least 90 percent of the maximum dry density as determined by ASTM D1557. The lift thickness will depend on the type of compaction equipment used to backfill utility trenches.

We recommend that all underground utility trenches aligned nearly parallel with new foundations be at least three feet from the outer edge of foundations, wherever possible. As a general rule, trenches should not encroach into the zone extending outward at a one horizontal to one vertical (1H:1V) inclination below the bottom of foundations. The intent of these recommendations is to prevent loss of both lateral and vertical support of foundations, resulting in possible settlement.

Foundation Design

The proposed structures may be supported on a conventional continuous perimeter foundations and/or isolated interior spread foundations embedded at least 18 inches below lowest adjacent soil grade bearing in recompacted native soils, engineered fill, or a combination of those materials. Lowest adjacent soil grade is defined as the soil surface on which capillary break gravel is placed or exterior soil grade, whichever is lower. A continuous, reinforced foundation should be utilized for the perimeter of the structure to act as a “cut-off” to help minimize moisture infiltration and variations beneath the interior slab-on-grade areas of the structure. Continuous foundations should be at least 12 inches wide; isolated spread foundations should be at least 24 inches in any plan dimension. Foundations may be sized based upon an allowable “net” bearing capacity of 3000 pounds per square foot (psf) for dead load plus live loads, with a 1/3 increase for short-term loading caused from seismic or wind forces. The weight of foundation concrete extending below lowest adjacent soil grade may be disregarded in sizing computations.

Foundation excavations on sloping ground should be relatively flat on the bottom and should be stepped down the slope at regular intervals, with maximum step elevation differential of 12 inches (the minimum embedment below soil grade should be maintained for each step).

All foundations should be adequately reinforced to provide structural continuity, mitigate cracking and permit spanning of local soil irregularities. The structural engineer should determine final foundation reinforcing requirements.

Resistance to lateral foundation displacement may be computed using an allowable friction factor of 0.30, which may be multiplied by the effective vertical load on each foundation. Additional lateral resistance may be computed using an allowable passive earth pressure equivalent to a fluid pressure of 300 psf per foot of depth, acting against the vertical projection of the foundation. These two modes of resistance should not be added unless the frictional component is reduced by 50 percent since full mobilization of the passive resistance requires some horizontal movement, effectively reducing the frictional resistance. The uppermost 12 inches of passive resistance should be neglected if areas adjacent to the footings are not paved or covered with flatwork.

The recommendations to mitigate the effects of potentially expansive clays, if found during construction, provided in 2008 Kleinfelder report do remain applicable.

<u>Interior Floor Slab Support</u>

Interior concrete slab-on-grade floors can be supported upon the soil subgrade prepared in accordance with the recommendations in this report and maintained in that condition (at least the optimum moisture content). Interior concrete slab-on-grade floors should be at least four inches thick and should include crack control reinforcement located at mid-slab depth. Final reinforcement and joint spacing should be determined by the project Structural Engineer. Proper and consistent location of the reinforcement near mid-slab is essential to its performance. The risk of uncontrolled shrinkage cracking is increased if the reinforcement is not properly located within the slab.

Special moisture conditioning of subgrade soils prior to placement of floor slab concrete are *not* anticipated provided the subgrade soils are evaluated and prepared as noted above.

Floor slabs may be underlain by a layer of free-draining crushed rock, serving as a deterrent to migration of capillary moisture. The crushed rock layer should be between four and six inches thick and graded such that 100 percent passes a one-inch sieve and none passes a No. 4 sieve. Additional moisture protection may be provided by placing a vapor retarder membrane (at least 10-mil thick) directly over the crushed rock. The membrane should meet or exceed the minimum specifications as outlined in ASTM E1745 and be installed in strict conformance with the manufacturer's recommendations.

Floor slab construction over the past 30 years or more has included placement of a thin layer of sand or pea gravel over the vapor retarder membrane. The intent of the sand or pea gravel is to aid in the proper curing of the slab concrete and to protect the membrane prior to concrete placement. However, recent debate over excessive moisture vapor emissions from floor slabs includes concern for water trapped within the sand or pea gravel. As a consequence, we consider the use of the sand or pea gravel layer as optional. The concrete curing benefits should be weighed against efforts to reduce slab moisture vapor transmission.

The recommendations presented above are intended to mitigate any significant soils-related cracking of the slab-on-grade floors. More important to the performance and appearance of a Portland cement concrete slab is the quality of the concrete, the workmanship of the concrete contractor, the curing techniques utilized, and the spacing of control joints.

Floor Slab Moisture Penetration Resistance

It is considered likely that interior floor slab subgrade soils will become wet to near-saturated at some time during the life of the structure. This is a certainty when slabs are constructed during the wet season or when constantly wet ground or poor drainage conditions exist adjacent to the structures. For this reason, it should be assumed that all slabs in occupied areas, as well as those intended for moisture-sensitive floor coverings or materials, require protection against moisture or moisture vapor penetration, or mold formation. Standard practice includes the crushed rock and water vapor retarder as suggested above. However, the gravel and membrane offer only a limited, first-line of defense against soil-related moisture. Recommendations contained in this report concerning foundation and floor slab design are presented as *minimum* requirements, only from the geotechnical engineering standpoint.

It is emphasized that the use of sub-slab crushed rock and vapor retarder membrane will not "moisture proof" the slab, nor does it assure that slab moisture transmission levels will be low enough to prevent damage to floor coverings or other building components, or mold formation. If increased protection against moisture vapor penetration of slabs is desired, a concrete moisture protection specialist should be consulted. The design team should consider all available measures for slab moisture protection. It is commonly accepted that maintaining the lowest practical water-cement ratio in the slab concrete is one of the most effective ways to reduce future moisture vapor penetration of the completed slabs.

Retaining Wall Design

Retaining walls capable of slight rotation about their base (unrestrained at the top or sides) should be capable of resisting an "active" lateral earth pressure equal to an equivalent fluid pressure of 40 psf per foot of wall backfill for horizontal granular backfill conditions and fully drained conditions. Retaining walls or basement walls that are fixed at the top should be capable of resisting an "at-rest" lateral earth pressure equal to an equivalent fluid pressure of 60 psf per foot for horizontal granular backfill conditions. For retaining walls with backfill sloped at a gradient no steeper than two horizontal to one vertical (2H:1V), add 20 psf per foot of depth to the values provided above. Retaining wall foundations should extend at least 18 inches below soil grade and may be designed in accordance with the appropriate parameters contained in the Foundation Design section of this report.

For retaining walls constructed on sloping ground or at the top of a soil berm, the passive resistance should be computed below a depth at which at least five feet of engineered fill or undisturbed native soil is present in front of the foundation, as measured from the exterior edge of the foundation to the face of the nearest slope. This will require deepening of the foundation excavations based on specific circumstances.

For the purposes of providing soil design criteria for Keystone® walls or similar walls, we have assumed that the soils at the wall locations will consist of a mixture of native silts and sands. For these soils, it is our opinion that an angle of internal friction (i.e. ϕ angle) of 32 degrees and a moist unit weight of about 110 pounds per cubic foot (pcf) would be appropriate for design.

Retaining walls should be fully drained to prevent the build-up of hydrostatic pressure behind the wall. Retaining walls should be provided with a drainage blanket (Class 2 permeable material, Caltrans Specification Section 68-2.02F (3)) at least one foot wide extending from the base of wall to within one foot of the top of the wall. The top foot above the drainage layer should consist of compacted on-site materials. Weep holes or perforated rigid pipe should be provided near the base of the wall to allow drainage of accumulated water. Drainpipes, if used, should slope to discharge at no less than a one percent fall to suitable drainage facilities. Open-graded ½- to ¾-inch diameter crushed rock may be used in lieu of the Class 2 permeable material, if the rock and drain pipe are completely enveloped in an approved non-woven geotextile filter fabric.

Structural backfill materials for retaining walls (other than the drainage layer) should consist of non-expansive (Expansion Index less than 20), compactable granular material that does not contain significant quantities of rubbish, rubble, organics and rock over six inches in size. Clays, pea gravel and/or crushed rock are not considered suitable backfill materials for retaining walls. Structural backfill should be placed in level lifts not exceeding 12 inches in compacted thickness, moisture conditioned to at least the optimum moisture content, and should be mechanically compacted to at least 90 percent relative compaction using relatively smaller compacting equipment. Over-compacting should be avoided. Backfilling should not begin until the wall concrete has reached a minimum strength as determined by the project structural engineer.

Exterior Flatwork (Non-Pavement Areas)

Soil subgrade areas to support exterior concrete flatwork (i.e., sidewalks, patios, etc.) should be prepared in accordance with the Subgrade Preparation and Engineered Fill Construction recommendations included in this report. Proper moisture conditioning of the subgrade soils is considered essential to the performance of the exterior flatwork. A six-inch layer of aggregate base should be used as a leveling course beneath the exterior flatwork and compacted to at least 95 percent relative compaction.

Exterior flatwork concrete should be at least four inches thick. Consideration should be given to thickening the edge of the slab to at least twice the slab thickness where wheel traffic is expected over the slabs. Expansion joints should be provided to allow for minor vertical movement of the flatwork. Exterior flatwork should be constructed independent of perimeter building foundations by the placement of a layer of felt material between the flatwork and the foundation. The slab designer should determine the final thickness, strength and joint spacing of exterior slab-on-grade concrete. The slab designer should also determine if slab reinforcement for crack control is required and determine final slab reinforcing requirements.

Areas adjacent to new exterior flatwork should be landscaped to maintain more uniform soil moisture conditions adjacent to and under flatwork. We recommend final landscaping plans not allow fallow ground adjacent to exterior concrete flatwork.

Practices recommended by the Portland Cement Association (PCA) for proper placement, curing, joint depth and spacing, construction, and placement of concrete should be followed during exterior concrete flatwork construction.

Site Drainage

Final site grading should be accomplished to provide positive drainage of surface water away from the structures and prevent ponding of water adjacent to foundations, slabs or pavements. The grade adjacent to the structures should be sloped away from foundations at a minimum two percent slope for a distance of at least five feet, where possible. Roof gutter downspouts and surface drains should drain onto flatwork or be connected to rigid, non-perforated piping directed to an appropriate drainage point away from the structure. Ponding of surface water should not be allowed adjacent to the building or pavements. Landscape berms, if planned, should not be constructed in such a manner as to promote drainage toward the structure.

Pavement Design

The following pavement sections have been calculated based on the results of our R-value testing using samples collected on July 15, 2020 . The procedures used for design are in general conformance with Chapters 600 to 670 of the 2018 California Highway Design Manual, 6th edition, and Section 15*.* An R-value of 40 was used for the design of on-site pavements***.*** The project civil engineer should determine the appropriate traffic index based on anticipated traffic conditions. We can provide alternate pavement sections based on different traffic indices, upon request.

TABLE 2
PAVEMENT DESIGN ALTERNATIVES
R-Value = 40

Traffic Index (TI)	Traffic Condition	Type A Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
4.5	Automobile Parking Areas Only	2½*	4
6.5	Driveways, Fire Lanes, Drive Aisles, etc.	3	8
		4*	6

Note: * Asphalt concrete thickness contains the Caltrans safety factor.

We emphasize that the performance of the pavement is dependent upon uniform and adequate compaction of the soil subgrade, as well as all engineered fill and utility trench backfill within the limits of the pavements. Pavement subgrade preparation (i.e. scarification, moisture conditioning and compaction) should be performed after underground utility construction is complete, and just prior to aggregate base placement. The upper six inches of pavement subgrade soils should be compacted to at least 95 percent of the ASTM D1557 maximum dry density at an optimum moisture content. Aggregate base also should be compacted to at least 95 percent of the ASTM D1557 maximum dry density at the optimum moisture content or above. Materials quality and construction of the structural section of the pavements should conform to the applicable provisions of the latest edition of the Caltrans Standard Specifications.

Final pavement subgrades should be stable under construction traffic prior to aggregate base placement, and be protected from disturbance or desiccation until covered by aggregate base. To help identify unstable pavement subgrades, a proof-roll test should be performed on the exposed subgrades prior to placement of aggregate base with a fully-loaded, water truck. The proof-roll test should be observed by the Geotechnical Engineer's representative.

We suggest that concrete slabs be constructed with thickened edges at least two inches plus the slab thickness and 36 inches wide in accordance with American Concrete Institute (ACI) design standards and reinforced for crack control, if desired. Reinforcement must be located at mid-slab depth to be effective. Portland cement concrete should achieve a minimum compressive strength of 3500 pounds per square inch (psi) at 28 days. Concrete curing and joint spacing and details should conform to current PCA and ACI guidelines.

We suggest considering the use of full depth curbs where pavements abut landscaping. The curbs should extend to at least the surface of the soil subgrade. Weep holes also could be provided at storm drain drop inlets, located at the subgrade-base interface, to allow water to drain from beneath the pavements.

The recommendations to mitigate the effects of potentially expansive clays, if found during construction, provided in 2008 Kleinfelder report do remain applicable.

Drought Considerations

The State of California can experience extended periods of severe drought conditions in the future. The ability for property owners to use irrigation as a means for maintaining landscape vegetation and soil moisture likely will be inhibited for unpredictable periods of time. For this reason, landscape and hardscape systems for this development should be carefully planned to prevent the desiccation of soils under and near foundations and slabs. Trees with invasive shallow root systems should be avoided. No trees or large shrubs that could remove soil moisture during dry periods should be planted within five feet of any foundation or slab. Fallow ground adjacent to foundations must be avoided.

To reduce potential for soil creep adversely affecting foundations or exterior flatwork, we recommend a minimum horizontal distance of five feet be provided and maintained between the outside edge of the foundation or flatwork to the nearest adjacent slope (e.g., building pad hinge point), for slopes greater than two feet in height.

Geotechnical Engineering Observation and Testing During Earthwork

Site preparation should be accomplished in accordance with the recommendations of this report. Geotechnical testing and observation during construction is considered a continuation of our geotechnical engineering study. Wallace-Kuhl & Associates should be retained to provide testing and observation services during site preparation, earthwork, and foundation construction at the project to verify compliance with this geotechnical report and the project plans and specifications and to provide consultation as required during construction. These services are beyond the scope of work authorized for this investigation. We would be pleased to submit a proposal to provide these services upon request.

Section 1803.5.8 “Compacted Fill Material” of the 2016 CBC requires that the geotechnical engineering report provide a number and frequency of field compaction tests to determine compliance with the recommended minimum compaction. Many factors can affect the number of tests that should be performed during the course of construction, such as soil type, soil moisture, season of the year and contractor operations/performance. Therefore, it is crucial that the actual number and frequency of testing be determined by the Geotechnical Engineer during construction based on their observations, site conditions, and difficulties encountered.
In the event that Wallace-Kuhl & Associates is not retained to provide geotechnical engineering observation and testing services during construction, the Geotechnical Engineer retained to provide these services should indicate in writing that they agree with the recommendations of this report, or prepare supplemental recommendations as necessary. A final report by the “Geotechnical Engineer” should be prepared upon completion of the project.

Additional Future Services

We recommend that Wallace-Kuhl & Associates be retained to review the final plans and specifications to determine if the intent of our recommendations has been implemented in those documents. We would be pleased to submit a proposal to provide these services upon request.

LIMITATIONS

Our recommendations are based upon the information provided regarding the proposed construction, combined with our analysis of site conditions revealed by the field exploration and laboratory testing programs. We have used prudent engineering and geologic judgment based upon the information provided and the data generated from our investigation. This report has been prepared in substantial compliance with generally accepted geotechnical engineering practices that exist in the area of the project at the time the report was prepared. No warranty, either express or implied, is provided.

If the proposed construction is modified or relocated or, if it is found during construction that subsurface conditions differ from those we encountered at our sampling locations, we should be afforded the opportunity to review the new information or changed conditions to determine if our conclusions and recommendations must be modified.

We emphasize that this report is applicable only to the proposed construction and the investigated site. This report should not be utilized for construction on any other site. This report is considered valid for the proposed construction for a period of two years following the date of this report. If construction has not started within two years, we must re-evaluate the recommendations of this report and update the report, if necessary.

Wallace-Kuhl & Associates

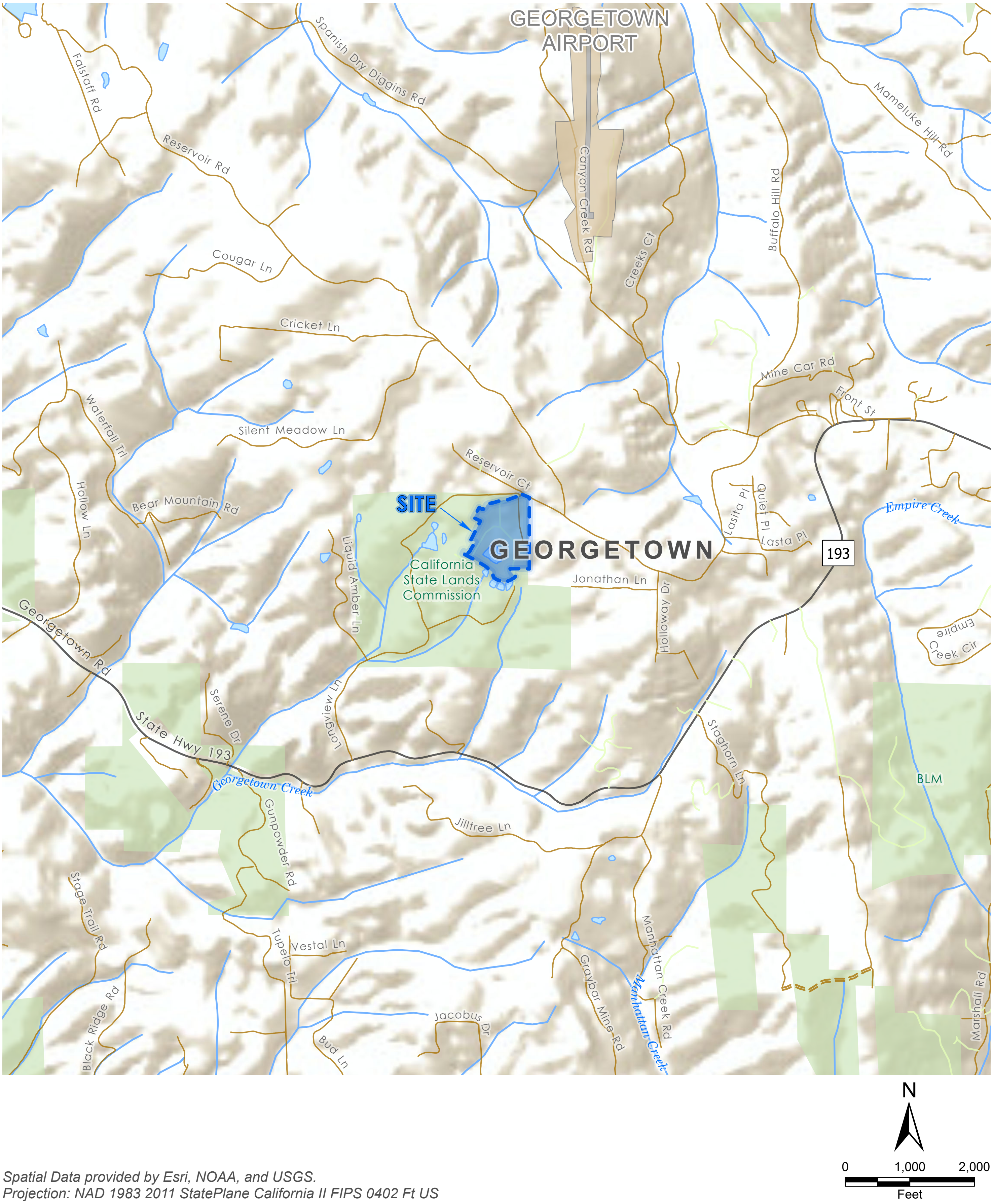
PROFESSIONAL GEOLOGIST
JOSEPH R. YBARRA
No. #9823
Exp.11/30/20
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
MICHAEL M. WATARI
NO. 2675
Exp. 12-31-21
GEOTECHNICAL
STATE OF CALIFORNIA

Joseph R. Ybarra
Staff Geologist

Michael M. Watari
Senior Engineer

JRY:MMW:/jry



Spatial Data provided by Esri, NOAA, and USGS.
Projection: NAD 1983 2011 StatePlane California II FIPS 0402 Ft US

WallaceKuhl & ASSOCIATES

VICINITY MAP

CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP
Georgetown, California

FIGURE	1
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MMW
DATE	09/2020
WKA NO.12811.01P	

▲ Approximate Bulk Soil Sample Location

⊡ Approximate Previous Test Pit Location (Kleinfelder, 2009)

● Approximate Previous Soil Boring Location (Kleinfelder, 2009)

Approximate Site Boundary

Aerial imagery provided by Esri.
Site Plan adapted from a drawing provided by Kleinfelder, dated 12/11/08.
Projection: NAD 1983 2011 StatePlane California II FIPS 0402 Ft US

N

0 100 200
Feet

WallaceKuhl & ASSOCIATES

SITE PLAN

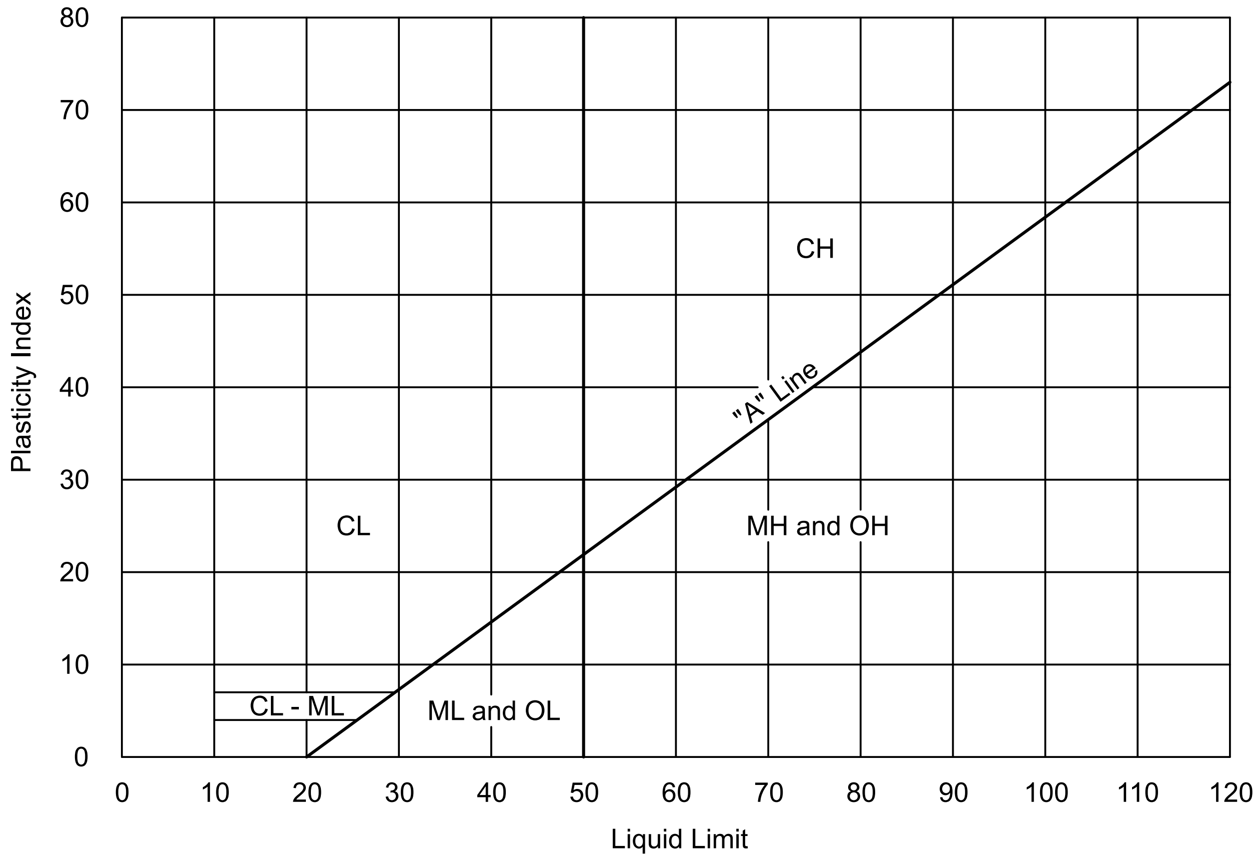
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP

Georgetown, California

FIGURE	2
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MSM
DATE	08/2020
WKA NO. 12811.01P	

ATTERBERG LIMITS

ASTM D4318



KEY SYMBOL	LOCATION	SAMPLE DEPTH	NATURAL WATER CONTENT (%)	ATTERBERG LIMITS LIQUID LIMIT (%)	ATTERBERG LIMITS PLASTICITY INDEX (%)	PASSING No. 200 SIEVE (%)	UNIFIED SOIL CLASSIFI-CATION SYMBOL
	B1	0'-3.0'	---	---	---	---	NP
	B3	0'-3.0'	---	---	---	---	NP
	B4	0'-3.0'	---	---	---	---	NP
	B5	0'-3.0'	---	---	---	---	NP
	B6	0'-3.0'	---	---	---	---	NP

NP = Non Plastic

Wallace Kuhl & ASSOCIATES

ATTERBERG LIMITS
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP
Georgetown, California

FIGURE	3
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MMW
DATE	09/2020
WKA NO.12811.01P	

EXPANSION INDEX TEST RESULTS

ASTM D4829

MATERIAL DESCRIPTION: Reddish brown, silty sand with clay

LOCATION: B1

Sample Depth	Pre-Test Moisture (%)	Post-Test Moisture (%)	Dry Density (pcf)	Expansion Index
0' - 3'	14.2	29.3	93	**32**

CLASSIFICATION OF EXPANSIVE SOIL *

EXPANSION INDEX	POTENTIAL EXPANSION
0 - 20	Very Low
21 - 50	**Low**
51 - 90	Medium
91 - 130	High
Above 130	Very High

* From ASTM D4829, Table 1

Wallace Kuhl & ASSOCIATES

EXPANSION INDEX
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP
Georgetown, California

FIGURE	4
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MMW
DATE	09/2020
WKA NO.12811.01P	

EXPANSION INDEX TEST RESULTS

ASTM D4829

MATERIAL DESCRIPTION: Reddish brown, silty sand with clay

LOCATION: B2

Sample Depth	Pre-Test Moisture (%)	Post-Test Moisture (%)	Dry Density (pcf)	Expansion Index
0' - 3'	16.0	31.2	90	**16**

CLASSIFICATION OF EXPANSIVE SOIL *

EXPANSION INDEX	POTENTIAL EXPANSION
0 - 20	**Very Low**
21 - 50	Low
51 - 90	Medium
91 - 130	High
Above 130	Very High

* From ASTM D4829, Table 1

Wallace Kuhl & ASSOCIATES	**EXPANSION INDEX** CALIFORNIA DEPARTMENT OF GENERAL SERVICES GROWLERSBURG CONSERVATION CAMP Georgetown, California	FIGURE	5
		DRAWN BY	RWO
		CHECKED BY	JRY
		PROJECT MGR	MMW
		DATE	09/2020
		WKA NO.12811.01P	

EXPANSION INDEX TEST RESULTS

ASTM D4829

MATERIAL DESCRIPTION: Reddish brown, silty sand with clay

LOCATION: B4

Sample Depth	Pre-Test Moisture (%)	Post-Test Moisture (%)	Dry Density (pcf)	Expansion Index
0' - 3'	15.8	26.2	91	**15**

CLASSIFICATION OF EXPANSIVE SOIL *

EXPANSION INDEX	POTENTIAL EXPANSION
0 - 20	**Very Low**
21 - 50	Low
51 - 90	Medium
91 - 130	High
Above 130	Very High

* From ASTM D4829, Table 1

Wallace Kuhl & ASSOCIATES

EXPANSION INDEX
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP
Georgetown, California

FIGURE	6
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MMW
DATE	09/2020
WKA NO.12811.01P	

EXPANSION INDEX TEST RESULTS

ASTM D4829

MATERIAL DESCRIPTION: Reddish brown, silty sand with clay

LOCATION: B6

Sample Depth	Pre-Test Moisture (%)	Post-Test Moisture (%)	Dry Density (pcf)	Expansion Index
0' - 3'	16.3	29.5	88	**26**

CLASSIFICATION OF EXPANSIVE SOIL *

EXPANSION INDEX	POTENTIAL EXPANSION
0 - 20	Very Low
21 - 50	**Low**
51 - 90	Medium
91 - 130	High
Above 130	Very High

* From ASTM D4829, Table 1

Wallace Kuhl & ASSOCIATES

EXPANSION INDEX
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP
Georgetown, California

FIGURE	7
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MMW
DATE	09/2020
WKA NO.12811.01P	

RESISTANCE VALUE TEST RESULTS

(California Test 301)

MATERIAL DESCRIPTION: Reddish brown, silty sand with clay

LOCATION: B2 (0' - 3')

Specimen No.	Dry Unit Weight (pcf)	Moisture @ Compaction (%)	Exudation Pressure (psi)	Expansion (dial, inches x 1000)	Expansion (psf)	R Value
1	103	18.3	261	24	104	63
2	103	17.3	488	23	104	71
3	102	17.7	302	23	100	68

R-Value at 300 psi exudation pressure = **68**

MATERIAL DESCRIPTION: Reddish brown, silty sand with clay

LOCATION: B6 (0' - 3')

Specimen No.	Dry Unit Weight (pcf)	Moisture @ Compaction (%)	Exudation Pressure (psi)	Expansion (dial, inches x 1000)	Expansion (psf)	R Value
1	104	21.2	189	25	108	55
2	101	20.2	317	24	104	61
3	99	19.4	408	18	78	69

R-Value at 300 psi exudation pressure = **60**

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RESISTANCE VALUE TEST RESULTS

CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP
Georgetown, California

FIGURE	8
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MMW
DATE	09/2020
WKA NO.12811.01P	

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 07/22/2020
Date Submitted 07/16/2020

To: Joey Ybarra
Wallace-Kuhl & Assoc.
3050 Industrial Blvd
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney RH
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 12811.01P Site ID : B2 @ 0-3 FT.
Thank you for your business.

* For future reference to this analysis please use SUN # 82577-172464.

EVALUATION FOR SOIL CORROSION

Soil pH	6.32		
Minimum Resistivity	3.22 ohm-cm (x1000)		
Chloride	6.2 ppm	00.00062	%
Sulfate	4.5 ppm	00.00045	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

WallaceKuhl & ASSOCIATES

CORROSION TEST RESULTS
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP
Georgetown, California

FIGURE	9
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MMW
DATE	09/2020
WKA NO. 12811.01P	

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 07/22/2020
Date Submitted 07/16/2020

To: Joey Ybarra
Wallace-Kuhl & Assoc.
3050 Industrial Blvd
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney RH
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 12811.01P Site ID : B2 @ 0-3 FT.
Thank you for your business.

* For future reference to this analysis please use SUN # 82577-172465.

Extractable Sulfate in Water

Type of TEST	Result	Units
Sulfate-SO4	4.9	mg/kg

METHODS
ASTM D-516m from sat.paste extract-reported based on dry wt.

CORROSION TEST RESULTS
CALIFORNIA DEPARTMENT OF GENERAL SERVICES
GROWLERSBURG CONSERVATION CAMP
Georgetown, California

WallaceKuhl & ASSOCIATES

FIGURE	10
DRAWN BY	RWO
CHECKED BY	JRY
PROJECT MGR	MMW
DATE	09/2020
WKA NO. 12811.01P	

Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 07/22/2020
Date Submitted 07/16/2020

To: Joey Ybarra
Wallace-Kuhl & Assoc.
3050 Industrial Blvd
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager \

The reported analysis was requested for the following location:
Location : 12811.01P Site ID : B6 @ 0-3 FT.
Thank you for your business.

* For future reference to this analysis please use SUN # 82577-172466.

EVALUATION FOR SOIL CORROSION

Soil pH	5.56	
Minimum Resistivity	5.36 ohm-cm (x1000)	
Chloride	4.4 ppm	00.00044 %
Sulfate	3.8 ppm	00.00038 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

WallaceKuhl & ASSOCIATES	**CORROSION TEST RESULTS** CALIFORNIA DEPARTMENT OF GENERAL SERVICES GROWLERSBURG CONSERVATION CAMP Georgetown, California	FIGURE	11
		DRAWN BY	RWO
		CHECKED BY	JRY
		PROJECT MGR	MMW
		DATE	09/2020
		WKA NO. 12811.01P	

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 07/22/2020
Date Submitted 07/16/2020

To: Joey Ybarra
Wallace-Kuhl & Assoc.
3050 Industrial Blvd
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney RH
General Manager \ Lab Manager \

The reported analysis was requested for the following location:
Location : 12811.01P Site ID : B6 @ 0-3 FT.
Thank you for your business.

* For future reference to this analysis please use SUN # 82577-172467.

Extractable Sulfate in Water

Type of TEST	Result	Units
Sulfate-SO4	3.9	mg/kg

METHODS
ASTM D-516m from sat.paste extract-reported based on dry wt.

WallaceKuhl & ASSOCIATES	**CORROSION TEST RESULTS** CALIFORNIA DEPARTMENT OF GENERAL SERVICES GROWLERSBURG CONSERVATION CAMP Georgetown, California	FIGURE 12 DRAWN BY RWO CHECKED BY JRY PROJECT MGR MMW DATE 09/2020 WKA NO. 12811.01P

APPENDIX G

Noise Impact Assessment, ECORP Consulting, Inc. April 2021

Noise Impact Assessment

Growlersburg Conservation Camp Replacement Project

County of El Dorado, California

Prepared For:

CALIFORNIA DEPARTMENT OF GENERAL SERVICES

State of California Department of General Services
Real Estate Services Division
707 Third Street, Fourth Floor
West Sacramento, California 95605

April 2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

CONTENTS

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LIST OF FIGURES

ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
CEQA	California Environmental Quality Act
CDCR	California Department of Corrections and Rehabilitation
CNEL	Community Noise Equivalent Level
County	El Dorado County
dB	Decibel
dBA	Decibel is A-weighted
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
L_{eq}	Measure of ambient noise
NIOSH	National Institute for Occupational Safety and
OPR	Office of Planning and Research
OSHA	Federal Occupational Safety and Health Administration
OSHPD	Office of State Health Planning and Development
PPV	Peak particle velocity
Project	Growlersburg Conservation Camp Replacement Project
RMS	Root mean square
RNG	Renewable Natural Gas Generators
SRA	State Response Area
STC	Sound Transmission Class

1.0 INTRODUCTION

This report documents the results of a Noise Impact Assessment completed for the Growlersburg Conservation Camp Replacement Project (Project) on 80 acres and includes the demolition and replacement of 17 buildings totaling 82,819 square feet in Georgetown, California. This report was prepared as a comparison of predicted Project noise levels to noise standards promulgated by the County of El Dorado General Plan Public Health, Safety and Noise Element, since the Project is located in unincorporated El Dorado County. The purpose of this report is to estimate Project-generated noise and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The Growlersburg Conservation Camp is located on 80 acres of state-owned property, at 5540 Longview Lane in the unincorporated Community of Georgetown in the County of El Dorado (County), California. The camp is located approximately 15 miles north of Placerville and 20 miles south of Auburn. Georgetown is on the edge of the El Dorado National Forest, which consists of 786,994 acres of heavy brush and mixed conifer forests comprised of a checkerboard pattern of parcel ownership (Federal, State) intermixed with private parcels which are part of the State Response Area (SRA). The site is generally bound by Longview Lane to the north with single-family residences beyond; an access road to some waste water retention ponds (located south of and abutting to the Project site) traversing adjacent to and east of the Project site with a single-family residence and Reservoir Road beyond; open space wooded forestry land to the west with a scattering of single-family residences and various unpaved mountain roads beyond; and a wastewater retention pond to the south with a single-family residence and Longview Lane (which for the most part encircles the Project vicinity from Reservoir Road north of the site, meandering through the scattering of single-family residences surrounding the Project site, and returning back to Reservoir Road) beyond. To the west and south is an area of approximately the same size of private lands that are also SRA lands.

The proposed Project would be constructed on property currently controlled by CAL FIRE and an expansion area that is currently part of the camp property. Currently the camp has 14 permanent Cal Fire employees (1 Division Chief, 10 Fire Captains, 1 Office Tech, 1 Mechanic, and 1 Waste-Water Plant Operator), 12 permanent California Department of Corrections and Rehabilitation (CDCR) employees (1 Lieutenant, 2 Sergeants, 9 Officers) and up to 130 inmates.

The proposed Project consists of the replacement/upgrade of the existing Conservation Camp and associated facilities/structures. New facilities to be constructed would include an administration building, a 136-bed inmate dorm building, inmate recreation building, inmate hobby building, a 6-bed CDCR/CDF barracks building, inmate kitchen and mess hall, multipurpose facility, inmate staging area (with Restroom and showers), warehouse, carpentry shop, auto welding shop, vehicle storage building, sawmill shed, sawmill building, planer/assembly building (including dry kilns), pole barn, generator/pump/storage/building, covered vehicle rack, and vehicle wash recycling. The Project would be constructed on property currently controlled by CAL FIRE and an expansion area that is currently part of the camp property.

Existing buildings to be demolished and replaced are shown in Table 1-1 (square footage of existing buildings would be similar to the replacement building square footage).

Table 1-1. Proposed Replacement Facilities/Structures

Proposed Improved or New Structures	Square Feet
Building A – Administration / Multipurpose Building -The new building is designed with two wings: one wing with offices for Cal fire staffs and the other wing with offices for CDCR staffs. The building includes a lobby, conference room, a multipurpose room and a public restroom for visitors using the Program and visitation building.	5,601
Building B - Inmate Recreation and Hobby Barn Building - This new building is designed with a pool room, TV rooms, hobby workshop, finish room and an exercise room for the inmates. The building also includes a barber shop.	7,445
Building C – Mess Hall / Kitchen - This building is designed with a Dining room a kitchen, freezer, refrigerator, dry storage and Hot Storage.	8,824
Building D - Inmate Barracks - This is designed with a 136-bed dormitory. The building also has a laundry room, restroom and shower areas.	14,544
Building E – Sawmill Shed. This building is designed as an equipment storage room	1,592
Building F – Sawmill & Planer Assembly Building – This building is designed for sawing and planning of lumber. The building include office, storage room equipment room, material handling, a tools room and an assembly area.	4,756
Building G – Product Storage / Drying Building: This is designed as a storage and drying building. One side of the building is used for storing carpentry products, and the other side is used for drying wood products.	3,174
Building H – Carpentry Shop: This building is designed with assemblies, a hobby room, finish room, tool room and a storage room.	7,233
Building J1 – Fire Pump / Electrical Equipment Building: This building is designed with a pump house room on one side and an electrical equipment room on the other side.	732
Building J2 – Fuel Storage Shed: This building is designed as a fuel storage.	106
Building K – Staging Restroom: This building is designed as a multi-use restroom. The building also includes two small all gender restrooms and a laundry room.	1,280
Building L – Auto Shop: This building is designed with a 4-bay car garage. The building also includes a welding shop, saw shop, part storage, break room, an office and an all gender restroom.	7,445
Building M – Warehouse Building: This building is designed with two warehouse rooms, an equipment room, training room, office, office lockers and a fire equipment room.	7,304
Building N - Office Barracks: The new building is designed with two wings. Both wings have 6 bedrooms with two beds each wing. 4 bathrooms with one being accessible and one laundry room in each wing. The building also includes a living room, dining room, and kitchen.	7,030
Building O – 3-Bay Garage / Wash Rack: This building is designed with three wash bays.	2,919
Building P – Program / Visitation Building: This building is designed for inmate Program and visitation. Note restroom needs for this building are accommodated in the administration / Multipurpose building (see building A above).	884
Building Q – Mobile Kitchen Unit: This building is designed to store the Mobile Kitchen unit.	1,950

Other site improvements would include the following items:

1. Two 250,000-gallon storage tanks for domestic water/fire suppression system and domestic booster pump
2. Above ground fuel vault
3. New propone tank
4. New Radio Tower provided by Owner
5. Grading and paving
6. Underground domestic water lines, sanitary sewer, LPG distribution system, underground electrical, fire alarm, telephone/data, security, P/A system and radio feed.

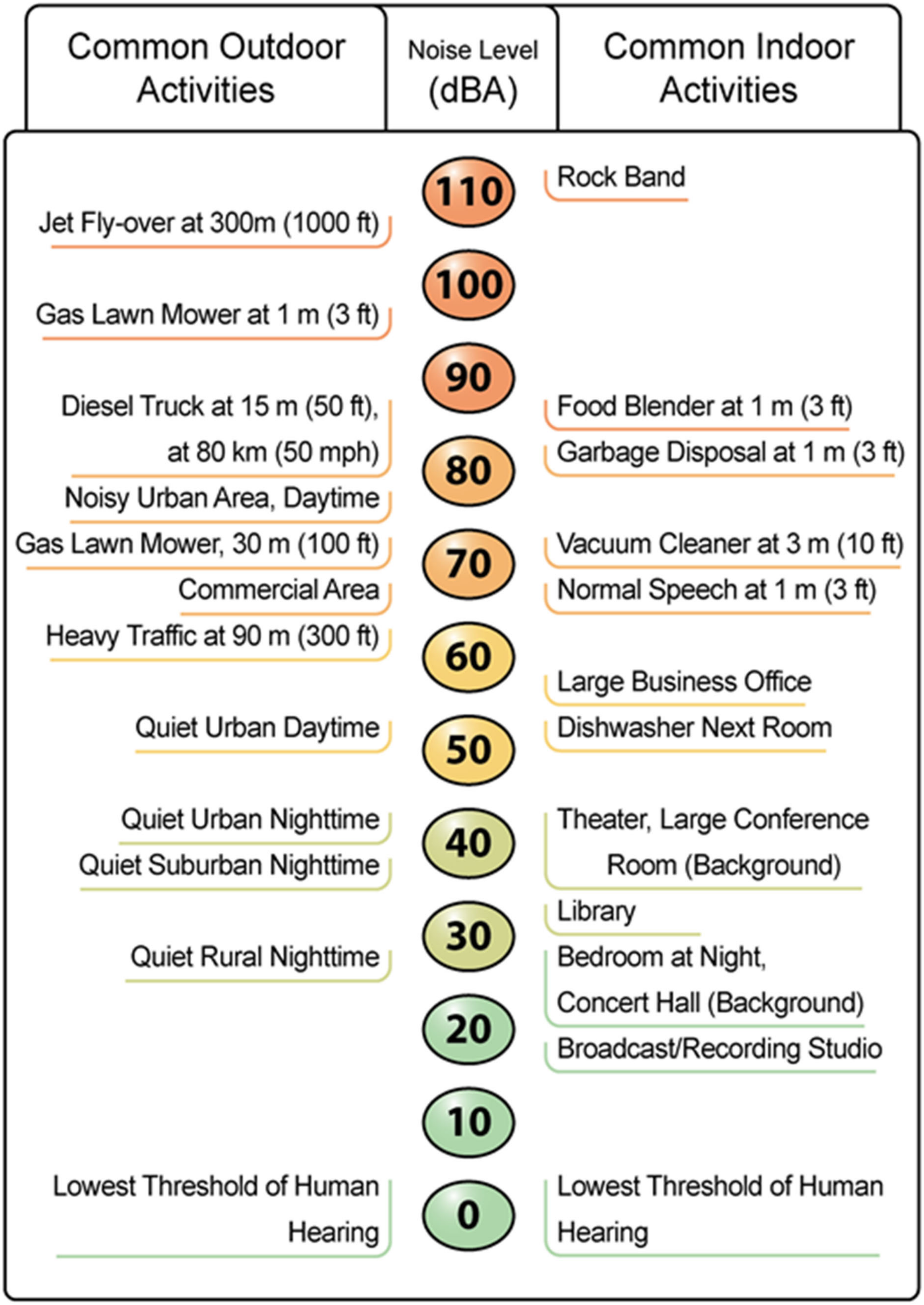
2.0 ENVIRONMENTAL NOISE AND GROUNDBORNE VIBRATION ANALYSIS

2.1 Fundamentals of Noise and Environmental Sound

2.1.1 Addition of Decibels

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be three dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by three dB). Under the decibel scale, three sources of equal loudness together would produce an increase of five dB.

Typical noise levels associated with common noise sources are depicted in Figure 1. *Common Noise Levels*



Source: California Department of Transportation (Caltrans) 2020a

Figure 1 Common Noise Levels
Growlersburg Conservation Camp Replacement Project

2.1.2 Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately six dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately three dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2011). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of three dB per doubling of distance is assumed (FHWA 2011).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about five dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. [WEAL] 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the “line of sight” between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. [HMMH] 2006). Generally, in exterior noise environments ranging from 60 dBA Community Noise Equivalent Level (CNEL) to 65 dBA CNEL, interior noise levels can typically be maintained below 45 dBA, a typically residential interior noise standard, with the incorporation of an adequate forced air mechanical ventilation system in each residential building, and standard thermal-pane residential windows/doors with a minimum rating of Sound Transmission Class (STC) 28. (STC is an integer rating of how well a building partition attenuates airborne sound. In the U.S., it is widely used to rate interior partitions, ceilings, floors, doors, windows, and exterior wall configurations.) In exterior noise environments of 65 dBA CNEL or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable in noise environments less than 75 dBA CNEL with proper wall construction techniques following California Building Code methods, the selections of proper windows and doors, and the incorporation of forced-air mechanical ventilation systems.

2.1.3 Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

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

Table 2-1 provides a list of other common acoustical descriptors.

Table 2-1. Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average Leq with a 10 dBA “weighting” added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.4 dBA Ldn.
Community Noise Equivalent Level, CNEL	A 24-hour average Leq with a 5 dBA “weighting” during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA “weighting” added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.

The A weighted decibel sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about ±1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within about ±1 to 2 dBA.

2.1.4 Human Response to Noise

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

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

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

2.1.5 Effects of Noise on People

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources.

2.2 Fundamentals of Environmental Groundborne Vibration

2.2.1 Vibration Sources and Characteristics

Sources of earthborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or manmade causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. For human response, however, an average vibration amplitude is more appropriate because it takes time for the human body to respond to the excitation (the human body responds to an average vibration amplitude, not a peak amplitude). Because the average particle velocity over time is zero, the RMS amplitude is typically used to assess human response. The RMS value is the average of the amplitude squared over time, typically a 1- sec. period (FTA 2018).

Table 2-2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high-noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in Table 2-2 is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment.

Table 2-2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	98–104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2020b

3.0 EXISTING ENVIRONMENTAL NOISE SETTING

3.1 Noise-Sensitive Land Uses

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

The nearest existing noise-sensitive land uses to the Project site are a scattering of single-family residences on the surrounding County roadways, with the closest located 92 feet distant.

3.2 Existing Ambient Noise Environment

The Project site consists of forested mountain terrain with graded areas scattered throughout the facility site and is currently being used to house an inmate population utilized for emergency incidents such as fires, floods and earthquakes. As previously described, the site is generally bound by Longview Lane to the north with single-family residences beyond; an access road to some waste water retention ponds (located south of and abutting to the Project site) traversing adjacent to and east of the Project site with a single-family residence and Reservoir Road beyond; open space wooded forestry land to the west with a scattering of single-family residences and various unpaved mountain roads beyond; and a wastewater retention pond to the south with a single-family residence and Longview Lane (which for the most part encircles the Project vicinity from Reservoir Road north of the site, meandering through the scattering of single-family residences surrounding the Project site, and returning back to Reservoir Road) beyond. The principle noise source in the area is related to vehicular traffic on Reservoir Road and Longview Lane and the various training and operational activities associated with the current Conservation Camp facilities. Other noise sources include overflights from the Georgetown Airport and agricultural activities on nearby land uses.

The American National Standards Institute (ANSI) Standard 12.9-2013/Part 3 "Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-Term Measurements with an Observer Present" provides a table of approximate background sound levels in L_{dn}, daytime L_{eq}, and nighttime L_{eq}, based on land use and population density. The ANSI standard estimation divides land uses into six distinct categories. Descriptions of these land use categories, along with the typical daytime and nighttime levels, are provided in Table 3-1. At times, one could reasonably expect the occurrence of periods that are both louder and quieter than the levels listed in the table. ANSI notes, "*95% prediction interval [confidence interval] is on the order of +/- 10 dB*." The majority of the Project area would be considered ambient noise Category 5 or 6.

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

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

Source: The American National Standards Institute (ANSI) 2013

4.0 REGULATORY FRAMEWORK

4.1 Federal

4.1.1 U.S. Environmental Protection Agency Office of Noise Abatement and Control

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate Federal noise control activities. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, documents and research completed by the EPA Office of Noise Abatement and Control continue to provide value in the analysis of noise effects

4.1.2 Occupational Safety and Health Act of 1970

OSHA regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an eight-hour work shift (29 Code of Regulations 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

4.2 State

4.2.1 State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

4.2.2 State Office of Planning and Research Noise Element Guidelines

The State OPR *Noise Element Guidelines* include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a Land Use Compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

4.2.3 California Department of Transportation

In 2013, the California Department of Transportation (Caltrans) published the Transportation and Construction Vibration Manual (Caltrans 2020b). The manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table 2-2 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

4.3 Local

4.3.1 El Dorado County General Plan

The Public Health, Safety, and Noise Element of the El Dorado County General Plan provides a basis for comprehensive local policies to control and abate environmental noise and to protect the citizens of the County from excessive noise exposure. By identifying noise-sensitive land uses and establishing compatibility guidelines for land use and noises, noise considerations will influence the general distribution, location, and intensity of future land uses. The result is that effective land use planning and mitigation can alleviate the majority of noise problems. The County defines "community regions" as areas that are appropriate for the highest intensity of self-sustaining compact urban development or suburban development. The County defines "rural centers" as areas of higher intensity development located throughout the rural areas of the County based on the availability of infrastructure, public services, existing uses, parcel size, and impacts on natural resources. The County classifies all lands not contained within the boundaries of a "community region" or a "rural center" as "rural regions". The portion of the County containing the Project site would thus be classified as a rural region and would be subject to the County standards for noise impacts associated with Project construction and operations found in Tables 4-1 and 4-2 below.

Table 4-1. Noise Level Performance Protection Standards for Noise Sensitive Land Uses Affected by Non-Transportation Sources

Noise Level Descriptor	Daytime 7 a.m. – 7 p.m.		Evening 7 p.m. – 10 p.m.		Night 10 p.m. – 7 a.m.	
	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}, dB	55	50	50	45	45	40
Maximum level, dB	70	60	60	55	55	50

Source: El Dorado County 2019

Notes: Each of the noise levels specified above shall be lowered by five dB 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 County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

In Community areas the exterior noise level standard shall be applied to the property line of the receiving property. In Rural Areas the exterior noise level standard shall be applied at a point 100' away from the residence. The above standards shall be measured only on property containing a noise sensitive land use as defined in Objective 6.5.1. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all effected property owners and approved by the County.

Table 4-2. Maximum Allowable Noise Exposure for Non-Transportation Noise Sources in Rural Regions – Construction Noise

Noise Level Descriptor	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
All Residential	7 a.m. – 7 p.m.	50	60
	7 p.m. – 10 p.m.	45	55
	10 p.m. – 7 a.m.	40	50
Commercial, Recreation, and Public Facilities	7 a.m. – 7 p.m.	65	75
	7 p.m. – 7 a.m.	60	70
Rural Land, Natural Resources, Open Space, and Agricultural Lands	7 a.m. – 7 p.m.	65	75
	7 p.m. – 7 a.m.	60	70

Source: El Dorado County 2019

The Public Health, Safety, and Noise Element sets various goals and policies that would apply to projects within unincorporated rural regions of El Dorado County. The following goals are applicable to the proposed Project:

Policy 6.5.1.1 Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the performance standards of Table 6-2 (presented as Table 4-3 in this analysis), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Policy 6.5.1.3 Where noise mitigation measures are required to achieve the standards of Table 6-2 (Table 4-3 in this analysis), the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.

Policy 6.5.1.10 To provide a comprehensive approach to noise control, the County shall:

A) Develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the project review process and, as may be determined necessary, through the building permit process.

B) Develop and employ procedures to monitor compliance with the standards of the Noise Element after completion of projects where noise mitigation measures were required.

C) The zoning ordinance shall be amended to provide that noise standards will be applied to ministerial projects with the exception of single-family residential building permits if not in areas governed by the Airport Land Use Compatibility Plan.

Policy 6.5.1.11 The standards outlined in [Table 4-4] shall not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally-recognized holidays. Further, the standards outlined in [Table 4-4] shall not apply to public projects to alleviate traffic congestion and safety hazards.

4.3.2 El Dorado Airport Land Use Compatibility Plan

The following Noise Compatibility policies, promulgated from the El Dorado Airport Land Use Compatibility Plan, are applicable to the Project:

Policy 4.2.1. *Evaluating Noise Compatibility*: The noise compatibility of proposed land uses within the influence area of each airport addressed in this Airport Land Use Compatibility Plan (ALUCP) shall be evaluated in accordance with the policies set forth in this section together with Table 1, Noise Compatibility Criteria, and the Noise Zone Policy Map for each airport provided in Chapter 6 of the ALUCP.

(A) The criteria in Table 1, Noise Compatibility Criteria, indicate the maximum acceptable noise exposure for a range of land uses that may be proposed within the airport vicinity. Within the various noise exposure ranges, each land use type is shown as being either "normally compatible," "conditional," or "incompatible." The meaning of these terms is stated in the table and differs for indoor versus outdoor uses.

Policy 4.2.2. *Maximum Acceptable Exterior Noise Levels*: To minimize noise-sensitive development in areas exposed to significant levels of aircraft noise, new land use development shall be restricted in accordance with the following.

(A) Within the airport-related CNEL 60 dB contour, new residential development—the creation of new residential lots or increase in density on existing lots—shall be prohibited. However, a portion of a residential lot that does not contain a dwelling site may extend into the CNEL 60 dB contour. Exceptions also are provided for existing residential lots (see Policy 2.3.4).

(B) New nonresidential development shall be deemed incompatible in locations where the airport-related noise exposure would be highly disruptive to the specific land use. Applicable criteria are indicated in Table 1, Noise Compatibility Criteria [of the Compatibility Plan].

Policy 4.2.3. *Maximum Acceptable Interior Noise Levels*: To the extent that the criteria in Table 1, Noise Compatibility Criteria [of the Compatibility Plan], and other policies herein permit the development of land uses which interior activities may be easily disrupted by noise, shall be required to comply with the following interior noise level criteria.

(A) The maximum, aircraft-related, interior noise level that shall be considered acceptable for land uses near airports is:

(1) CNEL 45 dB in any habitable room of: Residences; Children's schools (K-12); Libraries; Long-term lodging (e.g., dormitories), congregate care facilities, and nursing homes; Hotels, motels, and other short-term lodging; Adult educational and institutional facilities; Hospitals; Places of worship, meeting halls, theaters, and mortuaries; and Miscellaneous other uses as listed in Table 1, Noise Compatibility Criteria [of the Compatibility Plan].

(2) CNEL 50 dB in: Offices and office areas of industrial facilities; Research and Development facilities; Retail centers and stores; and Personal and miscellaneous services.

(B) The noise contours depicted in Chapter 6 [of the Compatibility Plan] for each airport shall be used to calculate compliance with these criteria. The calculations should assume that windows are closed.

5.0 IMPACT ASSESSMENT

5.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act Guidelines Appendix G thresholds of significance. The Project would result in a significant noise-related impact if it would produce:

1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

2) Generation of excessive groundborne vibration or groundborne noise levels.

3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

For purposes of this analysis and where applicable, the County noise standards were used for evaluating noise impacts to noise-sensitive land uses located in the County. The El Dorado County General Plan Public Health, Safety, and Noise Element states that noise sources associated with construction occurring between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 5:00 p.m. on weekends and holidays are exempt from County noise standards. Additionally, construction would occur throughout the Project site and would not be concentrated at one point. Therefore, noise generated during construction activities, as long as conducted within the permitted hours, would not violate County noise standards.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptor in the Project vicinity, typical construction equipment noise levels were calculated using the Roadway Noise Construction Model (2006). In order to evaluate the potential health-related effects (physical damage to the ear) from construction noise, such noise generated by the Project is compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by the National Institute for Occupational Safety and Health (NIOSH). A division of the US Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby existing and future planned sensitive receptors. This methodology for evaluating construction noise that is exempt from local standards is consistent with the California Court of Appeal decision found in *King and Gardiner Farms, LLC, v. County of Kern* (2020).

5.2 Methodology

This analysis of the existing and future noise environments is based on empirical observations. Predicted construction noise levels were calculated utilizing the Roadway Noise Construction Model. Groundborne vibration levels associated with construction-related activities for the Project have been evaluated utilizing typical groundborne vibration levels associated with construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby structures and typically applied criteria for structural damage and human annoyance. As previously stated, the Project proposes the demolition and replacement of more than 80,000 square feet of buildings within the Conservation Camp facility vicinity. No additional noise sources are proposed and therefore noise generated from Project operations, for the purpose of this analysis, are discussed qualitatively.

5.3 Impact Analysis

5.3.1 Project Construction Noise

Would the Project Result in Short-Term Construction-Generated Noise in Excess of Standards?

Onsite Construction Noise

Construction noise associated with the proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

The nearest existing noise-sensitive land uses to the Project site are a scattering of single-family residences surrounding the Project site, with the closest receptor located 92 feet distant. However, it is acknowledged that the majority of construction equipment is not situated at any one location during construction activities, but rather spread throughout the Project site and at various distances from sensitive receptors. Therefore, this analysis employs FTA guidance for calculating construction noise, which recommends measuring construction noise produced by all construction equipment from the center of the Project site (FTA 2018), which in this case is 435 feet from the nearest sensitive receptor to the northeast. As previously described, the County's General Plan Public Health, Safety and Noise Element states construction equipment operation is exempt from County noise standards between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 5:00 p.m. on weekends and holidays. To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptors in the Project vicinity in order to evaluate the potential health-related effects (physical damage to the ear) from construction noise, the construction equipment noise levels were calculated using the Roadway Noise Construction Model for the construction process and compared against the construction-related noise level threshold of 85 dBA developed to prevent hearing loss established by NIOSH.

The anticipated short-term construction noise levels generated for the necessary construction equipment are presented in Table 5-1.

Table 5-1. Construction Average (dBA) Noise Levels at Nearest Receptor			
Equipment	**Estimated Exterior Construction Noise Level at Existing Residences**	**Construction Noise Standards (dBA L_{eq})**	**Exceeds Standards?**
Demolition			
Concrete/Industrial Saw	63.8	*85*	**No**
Excavators (3)	57.9 (each)	*85*	**No**
Rubber Tired Dozers (2)	58.9 (each)	*85*	**No**
Combined Demolition Equipment	**67.6**	*85*	**No**
Site Preparation			
Rubber Tired Dozers (3)	58.9 (each)	*85*	**No**
Tractors/Loaders/Backhoes (4)	61.2 (each)	*85*	**No**
Combined Site Preparation Equipment	**68.8**	*85*	**No**
Grading			
Excavators (2)	57.9 (each)	*85*	**No**
Grader	62.2	*85*	**No**
Rubber Tired Dozer	58.9	*85*	**No**
Scrapers (2)	60.8 (each)	*85*	**No**
Tractors/Loaders/Backhoes (2)	61.2 (each)	*85*	**No**
Combined Grading Equipment	69.4	*85*	**No**
Construction, Paving, Architectural Coating			
Crane	53.8	*85*	**No**
Forklifts (3)	60.6 (each)	*85*	**No**
Generator Set	58.8	*85*	**No**
Tractors/Loaders/Backhoes (3)	61.2 (each)	*85*	**No**
Trencher	58.6	*85*	**No**
Welder	51.2	*85*	**No**
Pavers (2)	55.4 (each)	*85*	**No**
Paving Equipment (2)	63.7 (each)	*85*	**No**
Rollers (2)	54.2 (each)	*85*	**No**
Air Compressor	54.9	*85*	**No**
Combined Construction, Paving, & Architectural Coating	**71.9**	*85*	**No**

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

Notes: Construction equipment used during construction derived from CalEEMod 2016.3.2. CalEEMod is designed to calculate air pollutant emissions from construction activity and contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. Consistent with FTA recommendations for calculating construction noise, construction noise was measured from the center of the Project site (FTA 2018), which is 435 feet from the nearest sensitive receptor. Additionally, Construction, Paving and Architectural Coating phases are assumed to occur simultaneously.

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

As shown in Table 5-1, no individual or cumulative pieces of construction equipment would exceed the 85 dBA significance threshold for construction noise during any phase of construction at the nearby noise-sensitive receptors.

Offsite Construction Worker Traffic Noise

Project construction would result in minimal additional traffic on adjacent roadways over the time period that construction occurs. According to the CalEEMod model, which is used to predict air pollutant emissions associated with Project construction and contains default usage parameters for typical construction projects, including the number of worker commute trips and material haul truck trips, the maximum number of construction workers and haul trucks traveling to and from the Project site on a single day would be during the demolition phase with 392 total daily trips (15 worker trips and 377 haul truck trips). The worker trips would largely occur within two distinct segments of the day, the morning and afternoon, while the haul trips would occur intermittently throughout the workday. According to the Caltrans *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013), doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). The majority of this construction-related traffic trips would access the Project via SR 193 to Longview Lane and Project construction would not result in a long-term, consistent doubling of traffic on either of these facilities. As previously stated, the maximum number of construction workers and haul trucks traveling to and from the Project site on a single day would be during the demolition phase with 392 total daily trips, and it is noted that the demolition phase of construction is estimated to last approximately 20 days. For these reasons to contribution to existing traffic noise during Project construction would not be perceptible.

5.3.2 Project Operational Noise

Would the Project Result in a Substantial Permanent Increase in Ambient Noise Levels in Excess of County or City Standards During Operations?

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The nearest existing noise-sensitive land uses to the Project site are a scattering of single-family residences on the surrounding County roadways, with the closest located 92 feet distant.

Operational Offsite Traffic Noise

Project operations would not result in additional traffic on adjacent roadways. As stated previously, the Project proposes the demolition and replacement of existing buildings within the Conservation Camp facility and does not propose the addition of any Cal Fire or CDCR staff that would contribute to the addition of operational traffic on adjacent roadways. According to the Caltrans *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (2013), doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). The Project would not result in a doubling of traffic during operations, and therefore its contribution to existing traffic noise would not be perceptible.

Project Operations-Onsite Noise Sources

The main stationary operational noise associated with the Project would be from the various activities associated with the ongoing routine inmate Program and Cal Fire facility. As discussed hitherto, the Project proposes the demolition and replacement of over 80,000 square feet of the Conservation Camp facility. There are no new onsite noise sources proposed for the Project site. Furthermore, the Project would be required to comply with Title 24 and other updated regulatory actions set forth between the time of the initial facility construction and this Project proposal, which include but are not limited to higher efficiency components (i.e. HVAC systems, generators, heavy equipment, etc.) that have since been evolving to generate fewer noise level emissions that would be experienced by the noise-sensitive receptors in the Project vicinity. Therefore, operational onsite noise sources would be lower than the existing ambient noise baseline conditions currently perceived at the proposed Project site.

5.3.3 *Project Construction Groundborne Vibration*

Would the Project Expose Structures to Substantial Groundborne Vibration During Construction?

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

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is noted that pile drivers would not be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with typical construction equipment at 25 feet distant are summarized in Table 5-2.

Table 5-2. Representative Vibration Source Levels for Construction Equipment

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

Source: FTA 2018; Caltrans 2020b

The County does not regulate vibrations associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans (2020b) recommended standard of 0.2 inch per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings. Consistent with FTA recommendations for calculating vibration generated from construction equipment, construction vibration was measured from the center of the Project site (FTA 2018). The nearest structure of concern to the construction site, with regard to groundborne vibrations, is an outbuilding associated with a single-family property located 536 feet east of the Project site center.

Based on the representative vibration levels presented for various construction equipment types in Table 5-2 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential Project construction vibration levels. The FTA provides the following equation:

$$[PPVequip = PPVref \times (25/D)^{1.5}]$$

Table 5-3 presents the expected Project related vibration levels at a distance of 536 feet.

Table 5-3. Construction Vibration Levels at 177 Feet

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

Notes: [1]Based on the Vibration Source Levels of Construction Equipment included on Table 5-5 (FTA 2018). Distance to the nearest structure of concern is approximately 536 feet measured from Project site center.

As shown in Table 5-3, vibration as a result of construction activities would not exceed 0.2 PPV at the nearest structure. Thus, Project construction would not exceed the recommended threshold.

5.3.4 Project Operational Groundborne Vibration

Would the Project Expose Structures to Substantial Groundborne Vibration During Operations?

Project operations would not include the use of any large-scale stationary equipment that would result in excessive vibration levels. Therefore, the Project would not result groundborne vibration impacts during operations.

5.3.5 Excess Airport Noise

Would the Project Expose People Residing or Working in the Project area to Excessive Airport Noise?

The Project site is located approximately 0.89 mile south of the Georgetown Airport in the unincorporated Community of Georgetown. As shown on the Georgetown Airport Land Use Compatibility Plan *Airport Noise Zones Policy Map* (El Dorado 2012), the proposed Project lies just outside of the 55-60 dBA CNEL contour lines, and inside the Airport Influence Area contour line. According to the APLUCP's policies described previously, land uses proposed for development that fall within the Airport Influence Area are subject to policies 4.2.2 and 4.2.3. Policy 4.2.2 addresses new nonresidential development in locations where the airport-related exterior noise exposure would be highly disruptive to the specific land use, and Policy 4.2.3 limits the development of land uses that would experience aircraft-related interior noise levels that could cause disruption to activities associated with the specific land use. However, as stated above, the Project site lies outside of the CNEL contour lines associated with aircraft-related noise levels that would exceed interior/exterior levels that could cause disruption to the specific land use, and therefore would not expose people working or residing at the facility to excessive airport noise. Additionally, the Project proposes the demolition and replacement of the existing facility and would not be exposing new operational employees or inmates to additional airport noise above the current ambient environment experienced at the Project site.

5.3.6 Cumulative Noise

Would the Project Contribute to Cumulatively Considerable Noise During Construction?

Construction activities associated with the proposed Project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily affect the areas adjacent to the construction site. Construction noise for the Project was determined to be less than significant following compliance with County noise standards. Cumulative development in the vicinity of the Project site could result in elevated construction noise levels at sensitive receptors in the Project area. However, each project would be required to comply with the applicable noise limitations on construction. Therefore, the Project would not contribute to cumulative impacts during construction.

Would the Project Contribute to Cumulatively Considerable Noise from Offsite Traffic?

As described previously, Project operations would not result in additional traffic on adjacent roadways. The Conservation Camp facility currently employs 12 Cal Fire and 14 CDCR employees and is not expected to increase that worker population once Project construction completes. Thus, any cumulative noise impacts from Project-related traffic would be minimal to nonexistent compared to the existing baseline of the current facility.

Would the Project Contribute to Cumulatively Considerable Noise from Stationary Sources?

Cumulative noise impacts would primarily be associated with the HVAC systems and general activities that are already associated with the existing facility (i.e. Cal Fire, carpentry and lumber production, and general facility maintenance activities). Therefore, long-term noise sources associated with development at the Project, combined with other cumulative projects, would not cause local noise-level increases over existing conditions.

6.0 REFERENCES

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LIST OF ATTACHMENTS

ATTACHMENT A

Federal Highway Administration Highway Roadway Construction Noise Outputs – Project Construction Noise

Roadway Construction Noise Model (RCNM),Version 1.1

Report date:	4/20/2021
Case Description:	Demolition

Description	**Affected Land Use**
Demolition	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Concrete/Industrial Saws	No	20		89.6	435
Excavator	No	40		80.7	435
Excavator	No	40		80.7	435
Excavator	No	40		80.7	435
Rubber Tired Dozer	No	40		81.7	435
Rubber Tired Dozer	No	40		81.7	435

	Calculated (dBA)	
Equipment	***Lmax**	**Leq**
Concrete/Industrial Saws	70.8	63.8
Excavator	61.9	57.9
Excavator	61.9	57.9
Excavator	61.9	57.9
Rubber Tired Dozer	62.9	58.9
Rubber Tired Dozer	62.9	58.9
Total	**70.8**	**67.6**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/20/2021
Case Description: Site Preparation

Description	**Affected Land Use**
Site Preparation	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Rubber Tired Dozer	No	40		81.7	435
Rubber Tired Dozer	No	40		81.7	435
Rubber Tired Dozer	No	40		81.7	435
Tractor/Loader/Backhoe	No	40	84		435
Tractor/Loader/Backhoe	No	40	84		435
Tractor/Loader/Backhoe	No	40	84		435
Tractor/Loader/Backhoe	No	40	84		435

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Rubber Tired Dozer	62.9	58.9
Rubber Tired Dozer	62.9	58.9
Rubber Tired Dozer	62.9	58.9
Tractor/Loader/Backhoe	65.2	61.2
Tractor/Loader/Backhoe	65.2	61.2
Tractor/Loader/Backhoe	65.2	61.2
Tractor/Loader/Backhoe	65.2	61.2
Total	**65.2**	**68.8**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/20/2021
Case Description: Grading

Description	**Affected Land Use**
Grading	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Excavator	No	40		80.7	435
Excavator	No	40		80.7	435
Grader	No	40	85		435
Rubber Tired Dozer	No	40		81.7	435
Scraper	No	40		83.6	435
Scraper	No	40		83.6	435
Tractor/Loader/Backhoe	No	40	84		435
Tractor/Loader/Backhoe	No	40	84		435

	Calculated (dBA)	
Equipment	***Lmax**	**Leq**
Excavator	61.9	57.9
Excavator	61.9	57.9
Grader	66.2	62.2
Rubber Tired Dozer	62.9	58.9
Scraper	64.8	60.8
Scraper	64.8	60.8
Tractor/Loader/Backhoe	65.2	61.2
Tractor/Loader/Backhoe	65.2	61.2
Total	**66.2**	**69.4**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

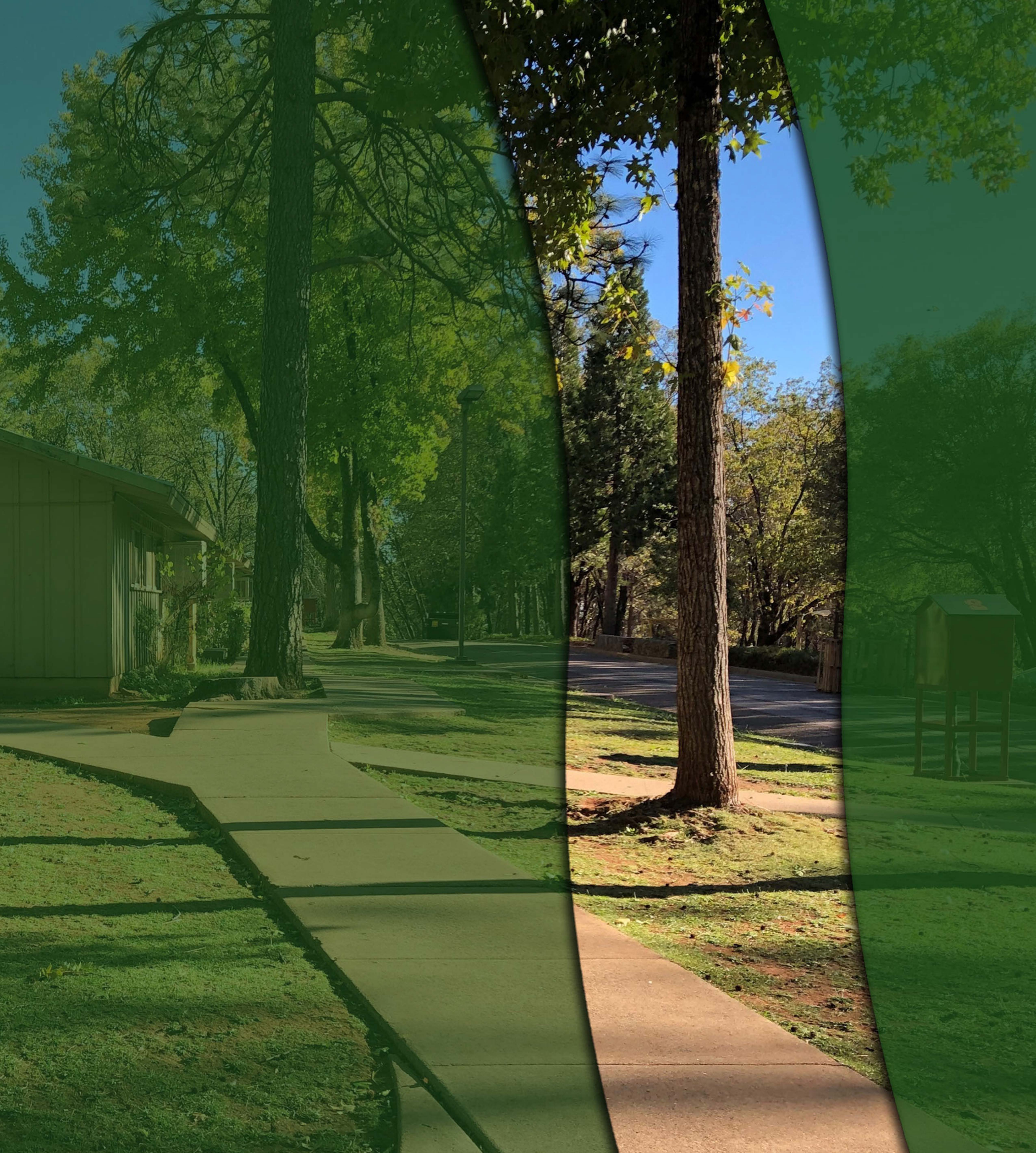
Report date: 4/20/2021
Case Description: Construction

Description	**Affected Land Use**
Construction	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Crane	No	16		80.6	435
Forklift	No	40		83.4	435
Forklift	No	40		83.4	435
Forklift	No	40		83.4	435
Generator set	No	50		80.6	435
Tractor/Loader/Backhoe	No	40	84		435
Tractor/Loader/Backhoe	No	40	84		435
Tractor/Loader/Backhoe	No	40	84		435
Trencher	No	50		80.4	435
Welder	No	40		74	435
Paver	No	50		77.2	435
Paver	No	50		77.2	435
Paving Equipment	No	20		89.5	435
Paving Equipment	No	20		89.5	435
Roller	No	20		80	435
Roller	No	20		80	435
Air Compressor	No	40		77.7	435

	Calculated (dBA)	
Equipment	***Lmax**	**Leq**
Crane	61.8	53.8
Forklift	64.6	60.6
Forklift	64.6	60.6
Forklift	64.6	60.6
Generator set	61.8	58.8
Tractor/Loader/Backhoe	65.2	61.2
Tractor/Loader/Backhoe	65.2	61.2
Tractor/Loader/Backhoe	65.2	61.2
Trencher	61.6	58.6
Welder	55.2	51.2
Paver	58.4	55.4
Paver	58.4	55.4
Paving Equipment	70.7	63.7
Paving Equipment	70.7	63.7
Roller	61.2	54.2
Roller	61.2	54.2
Air Compressor	58.9	54.9
Total	**70.7**	**71.9**

*Calculated Lmax is the Loudest value.



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