Addendum to the Mettler County Water District Well 4 TCP and Nitrate Mitigation Project Mitigated Negative Declaration

JUNE 2026

SCH NO. 2020120113

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CHAPTER 1 ADDENDUM TO AN ADOPTED MITIGATED NEGATIVE DECLARATION

The Mettler County Water District (MCWD) does hereby prepare, declare, and file the Addendum to an adopted Mitigated Negative Declaration (MND) (State Clearinghouse No. 2020120113) for the following Mettler County Water District Well 4 TCP and Nitrate Mitigation Project. This is addendum No. 2.

This Addendum is required to include the addition of new meters in the County public right-of-way (ROW) that would replace old, failing water meters currently located on private property (Project). This Addendum discusses the potential impacts as a result of the incorporation of the water meters.

MCWD has reviewed the Project and on the basis of the whole record, has determined that there is substantial evidence to support the determination that the attached original MND remains relevant in considering the environmental impacts of the project changes and that there is no substantial evidence to support a fair argument that the changes to the project, as identified in the attached addendum, would have a significant impact on the environment beyond that which was evaluated in the adopted MND. A subsequent Environmental Impact Report (EIR) or MND is not required pursuant to the California Environmental Quality Act of 1970 (Sections 21000, et. Seq., Public Resources Code of the State of California).

This addendum to the original adopted MND has been prepared pursuant to Title 14, Sections 15162 and 15164 of the California Code of Regulations.

A copy of this document and all supportive documentation may be reviewed or obtained at the District Office, addressed as 1822 Stevens Drive, Bakersfield, CA 93313.

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

2.1.1 Project Title

Addendum No. 2 to the Mettler County Water District Well 4 TCP and Nitrate Mitigation Project
Mitigated Negative Declaration

2.1.2 Lead Agency Name and Address

Mettler County Water District
1822 Stevens Drive
Bakersfield, CA 93313

2.1.3 Contact Person and Phone Number

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2.1.4 Project Location

The Project is located in Kern County, California, Township 11N, Range 20W, Section 1; San Bernardino Base and Meridian (see ***Figure 2-1*** & ***Figure 2-2*** for location). The original MND included work within Assessor Parcel Number (APN) 238-205-10. According to the Kern County General Plan the land use within APN 238-205-10 is designated as Service Industrial and zoned as Medium Industrial, Precise Development Combining. The metering work would take place within existing County public ROW.

2.1.5 Project Background

An MND for the Project was adopted on January 12, 2021 (refer to ***Appendix A***). The MND evaluated the potential environmental impacts that would arise, as a result of project implementation. Additionally, an Addendum to the MND was completed in October 2021 (2021 Addendum) to include the replacement of a proposed backwash water storage tank with a 0.33-acre backwash water pond. The proposed Project requires a second Addendum to include the addition of new water meters in the County public ROW that would replace old, failing meters currently located on private property. The purpose of the proposed Project is for new meters to accurately determine water usage for sizing and operating water treatment equipment.

2.1.6 Description of Project

The Project would amend the original MND by replacing the old, failing water meters with new water meter spacer tubes to keep the existing water service lines active. New meter boxes and meters would be installed in County ROW for easier access. The old meter boxes would not be removed. No additional changes or equipment would be needed with the Project as the original equipment required in the MND would be adequate to meet the needs of the Project. No new service line installations or modifications to existing piping are anticipated. The Project would continue to be designated for the mitigation of TCP and nitrate contamination in the MCWD drinking water supplies and bring the water system into compliance with both standards.

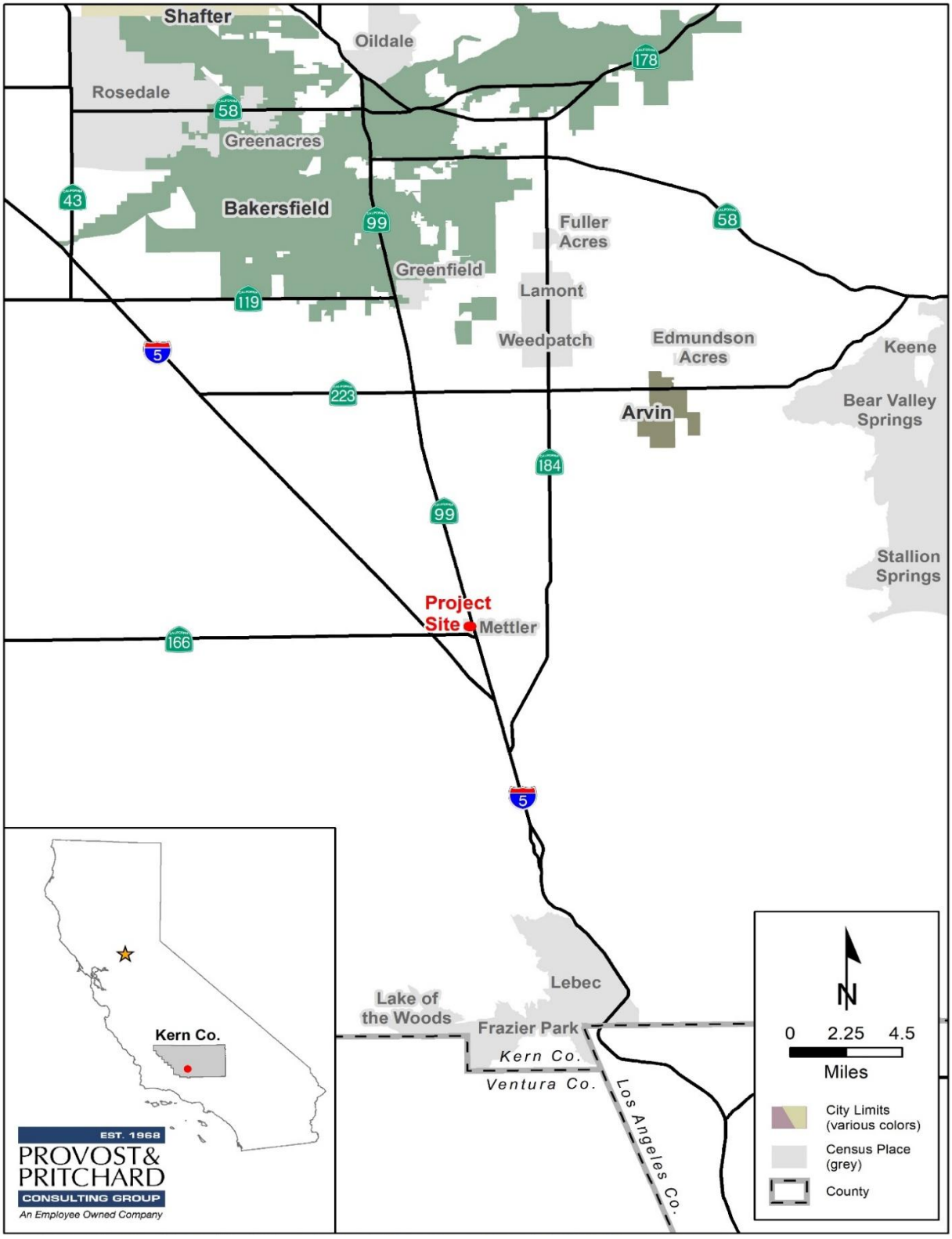


Figure 2-1: Regional Location Map

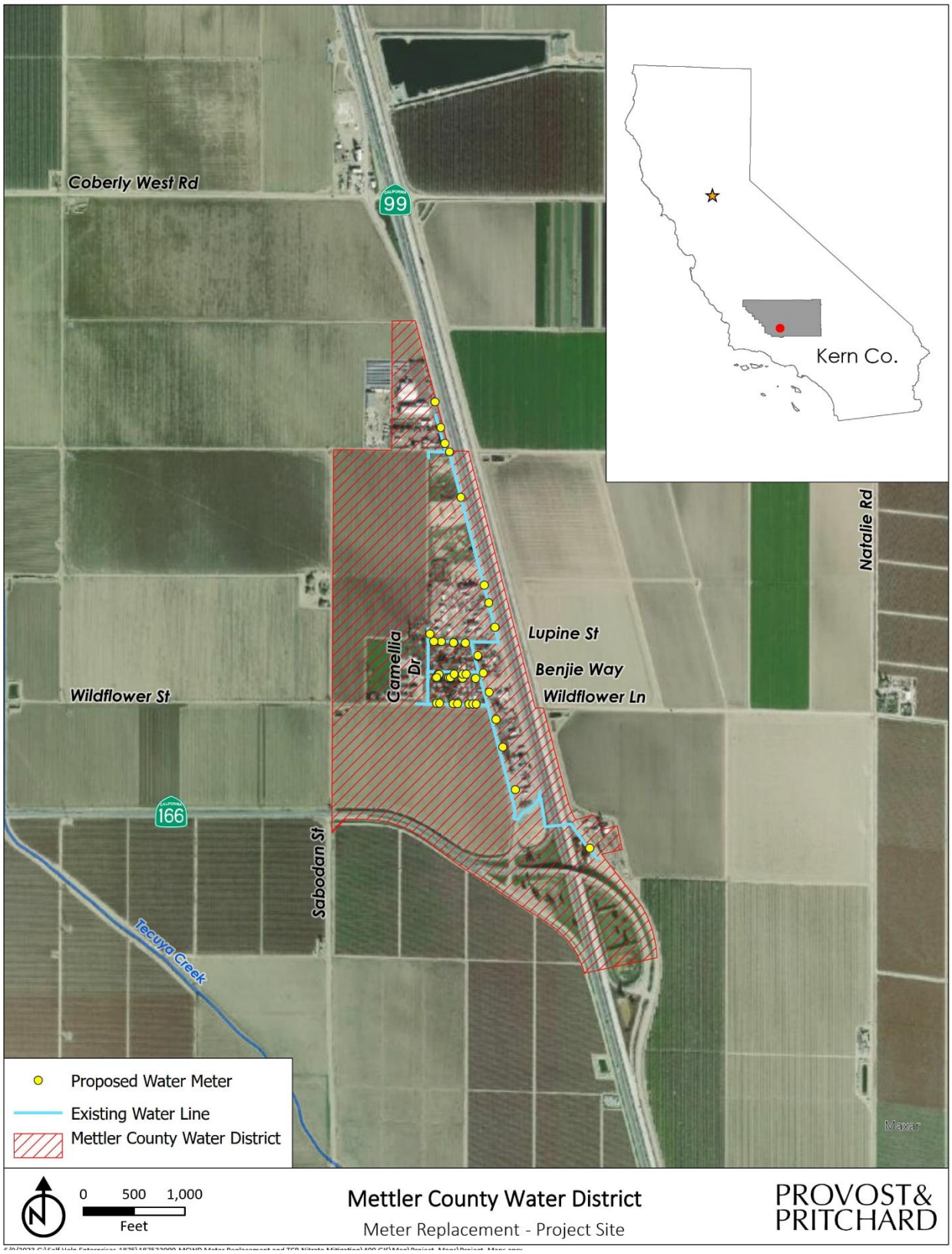


Figure 2-2: Project Site Map

CHAPTER 3 CEQA ANALYSIS

Under the California Environmental Quality Act (CEQA) Guideline Section 15164, an addendum to an MND may be prepared if only minor technical changes are required or if none of the conditions identified in Guideline Section 15162 are present. In the absence of substantial evidence to support a fair argument that the project changes may result in significant environmental impacts not previously studied, an addendum to the MND is appropriate. The following review proceeds with the requirements of CEQA Guidelines Section 15162 in mind. The following discussion concludes that the conditions set forth in Section 15162 are not present, and that an addendum is appropriate documentation for the tank changes from the original Project.

3.1 DISCUSSION

The discussion in this addendum confirms that the Project changes have been evaluated for significant impacts pursuant to CEQA. The discussion is meaningfully different than a determination that a project is "exempt" from CEQA review, as the Project is not exempt. Rather, the determination here is that the potential impacts of the Project were in a previously adopted MND and 2021 Addendum (i.e., the Mettler County Water District, Well No. 4 TCP and Nitrate Mitigation Project MND) and that the MND and 2021 Addendum provides a sufficient and adequate analysis of the environmental impacts of the Project. While the impacts to the site are virtually indistinguishable from the current condition, because the Project would include funding for the proposed water meter replacement, MCWD determined that an addendum rather than an exemption is the appropriate environmental document. The Project is funded through an Expedited Drinking Water Grant, under the Budget Act of 2021 through an agreement with the State Water Resources Control Board. .

3.2 AESTHETICS

The Project consists of the replacement of old, failing meters with new meters. As there are already existing meters in the Project area, impacts related to aesthetics would be similar to the existing determination. As such, impacts would remain to be insignificant, as determined in the MND and would continue to be less than significant.

3.3 AGRICULTURAL AND FORESTRY RESOURCES

The Project would continue to not change or alter existing zoning designations, nor would they result in the loss of forest land, Williamson Act lands, or agricultural lands. As such, impacts to agricultural resources would be the same as the approved MND, which found that no impacts would occur.

3.4 AIR QUALITY

As determined in the MND, the Project's construction-generated emissions and operational emissions would not exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) significance thresholds. The incorporation of the Project would continue to have less than significant cumulative impacts. As the Project consists of the replacement of old, failing meters, the Project would have a less than significant impact in exposing sensitive receptors to substantial pollutant concentrations and the Project would not result in other emissions adversely affecting a large number of people. The Project would not substantially

change the air quality impacts, therefore impacts would be consistent with the approved MND. As such, impacts would remain consistent with the MND and would continue to be less than significant.

3.5 BIOLOGICAL RESOURCES

As identified in the MND and 2021 Addendum, a reconnaissance field survey was conducted which resulted in a biological analysis. The mitigation measures derived from the analysis would be included in the Project to bring impacts to a less than significant level. Although the Project would result in new ground disturbances, the mitigation measures identified in the original MND would continue to apply to the additional work and the Project would not require additional mitigation. Therefore, impacts to biological resources would be less than significant.

3.6 CULTURAL RESOURCES

An intensive Phase I survey was conducted in August 2020 for the project area in the MND. Although historical or archaeological resources were not identified at the time of the survey, unanticipated resources have the potential to be unearthed during ground-disturbing activities Therefore, mitigation measures were provided to address potential unearthing of resources. The Project would continue to abide by the mitigation measures incorporated into the MND for cultural resources. The Project would not require additional mitigation measures and Impacts to cultural resources would remain less than significant.

3.7 ENERGY

The Project consists of the replacement of old, failing meters with new meters. Increases in the use of energy as a result of the Project would be miniscule. The Project would not conflict with current State energy efficiency or electricity supply requirements, or any local plans or programs for renewable energy or energy efficiency requirements. Impacts would not change as a result of the Project and would remain less than significant.

3.8 GEOLOGY AND SOILS

The Project is located in an area traditionally characterized by low seismic activity and the Project area itself is flat with no major geologic landforms in the vicinity that could increase the risk of landslides. The soils in the area are well to excessively-well drained which represents a low likelihood for liquefaction or seismic-related ground failure. Consistent with the MND, the Project site is already developed and highly disturbed. Installation of the Project would not have a significant impact to sensitive resources. As determined in the MND, the Project would continue to have less than significant impacts to geology and soils.

3.9 GREENHOUSE GAS EMISSIONS

The original MND determined that the estimated short-term and long-term greenhouse gases (GHGs) emissions would remain negligible, resulting in a less than significant impact. The Project would not substantially alter emissions resulting from construction or operation. Implementation of the Project is not anticipated to conflict with any applicable plan, policy, or regulation for reducing the emissions of GHGs. Impacts would remain less than significant as a result of the Project.

3.10 HAZARDS AND HAZARDOUS MATERIALS

There would be no transport, use, or disposal of hazardous materials associated with Project construction, with the exception of diesel fuel for construction equipment. Any potential accidental hazardous materials spills during Project construction are the responsibility of the contractor to remediate in accordance with industry best management practices and State and county regulations. The Project does not involve land that is listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control (DTSC). A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on for the MND determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity. The Project is not located within an airport land use plan or within two miles of an airport. Implementation of the Project would not require any temporary or permanent partial or full road closures. The Project is within a Local Responsibility Area (LRA). The nearest High Fire Severity zone is located approximately nine miles east of the Project site. The Project still does not include any residential components, nor would it require any employees to be stationed permanently at the site on a daily basis. Given the overall nature of the Project is to correct water quality issues within existing wells on developed areas, there is no risk of wildland fires or other environmental hazards. The Project would not alter the findings of the original MND and therefore impacts would remain less than significant.

3.11 HYDROLOGY AND WATER QUALITY

The original MND did not identify any potentially significant hydrology and water quality impacts. The Project would not adversely affect surface or ground water quality. Project operations are needed to improve water quality and comply with drinking water standards. The Project does not involve waste discharge. Impacts would be consistent with the MND and would continue to be less than significant.

3.12 LAND USE AND PLANNING

The Project would continue to be located in a developed area. The General Plan and zoning designation for the site would remain unchanged. The Project would not divide an established community, nor would it conflict with any applicable habitat conservation plan or natural community conservation plan. Thus, impacts to land use and planning are consistent with the approved MND and no impacts would occur.

3.13 MINERAL RESOURCES

The Project is not in a category of projects that would affect the availability of a mineral resource or access to mineral resources. Therefore, impacts to mineral resources are consistent with the approved MND and no impacts would occur.

3.14 NOISE

The Project would include the replacement of water meters and any noise associated with implementation of the Project would be temporary and minimal. The Project is located by a developed truck stop located with a small residential area to the west and agricultural lands to the east, which includes the use of off-road equipment and ground-disturbing activities on a regular basis. Replacement of the meters would involve less construction-related noise than the original MND as it would not require off-road equipment. Impacts would remain less than significant.

3.15 POPULATION AND HOUSING

The Project would not induce population growth but rather assist in bringing the water quality into compliance with regulations for 1,2,3-trichloropropane and nitrate. The Project would not encourage population growth directly or indirectly beyond that previously analyzed by the Kern County General Plan. No housing or habitable structures would be built, nor will any be removed. Implementation of the Project would not result in displacement of people or existing housing. The Project would be consistent with the approved MND, which found that the Project would be beneficial to users by providing clean drinking water, and thus, there would be no impact.

3.16 PUBLIC SERVICES

The Project would continue to not significantly impact public services in the jurisdiction related to fire protection, police protection, parks, or landfill facilities. The site is within northwestern Kern County and would utilize existing services provided by the County. The Project would maintain no impacts as determined in the original MND.

3.17 RECREATION

The Project would not change the impacts to recreation. The Project would continue to have no effect on neighborhood and regional parks or other recreational facilities. The Project itself does not involve recreational facilities, and it would not require the construction or expansion of existing recreational facilities. Project impacts to recreation would remain the same as described in the original MND, and there would be no impact.

3.18 TRANSPORTATION

The Project would not result in a significant increase in vehicle miles traveled. The Project would have no impact to CEQA Guidelines section 15064.3 Subdivision (b) and the Project would still not result in inadequate emergency access. Project impacts to transportation would remain the same as described in the original MND. There would be no additional impacts and impacts would continue to be less than significant.

3.19 TRIBAL CULTURAL RESOURCES

The Project is located in an area that has been previously disturbed. The original MND stated that representatives of potentially affected tribes were notified of the proposal and the notified tribes did not express any concerns for the project In accordance with the MND, In the event that human remains, or cultural materials are discovered during construction, the mitigation measures that were incorporated in the cultural resources section of the MND, would continue to apply here. The addition of meters would involve minor ground disturbance and would not alter the impacts to known tribal cultural resources. Impacts are consistent with the approved MND. There would be no additional impacts.

3.20 UTILITIES AND SERVICE SYSTEMS

The Project would not result in significant impacts to utilities and service systems. The Project would assist in the water treatment proposed in the MND. Impacts would remain less than significant as determined in the original MND.

3.21 WILDFIRE

As stated in the MND, the Project is not located in or near a state designated responsibility area or lands classified as very high fire hazard severity zones. The Project site is approximately nine miles from the nearest High classification of Fire Hazard Severity Zone in a Local Responsibility Area. The Project would not interfere with any adopted emergency response plan or emergency evacuation plan set forth by Kern County General Plan. Furthermore, the Project would not expose the community of Mettler or surrounding areas to the uncontrolled spread of wildfires, require the installation or maintenance of associated infrastructure that would exacerbate fire risk or expose people or structures to any significant risks post-fire. Impacts would remain consistent with the MND. Impacts would remain less than significant.

3.22 CONCLUSION

The following identifies the standards set forth in Section 15162 as they relate to the project. The text in italics that follows the provisions of the law relate to the Project.

1. No substantial changes are proposed in the project which would require major revisions of the previous MND due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

The Project would include the replacement of old, failing water meters with new meters including water meter spacer tubes and new meter boxes. No additional changes or equipment would be needed with the Project as the original equipment required in the MND would be adequate. All mitigation measures adopted with the MND would apply to this project.

2. No substantial changes have occurred with respect to circumstances under which the project is undertaken that would require major revisions of the previous MND due to the involvement of new significant environmental effect or a substantial increase in the severity of previously identified significant effects.

The Project would include the replacement of old, failing water meters with new meters including water meter spacer tubes and new meter boxes. The site would be visually and physically consistent with existing conditions. The Project would not require major revisions of the previous MND. The impact would be insignificant and unsubstantial in nature.

3. No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous MND was certified as complete or adopted, shows any of the following:

    a. The project will have one or more significant effects not discussed in the previous MND;

    As the Project uses existing equipment and construction time will stay the same, and would not result in additional hazards, the previous MND remains adequate.

    b. Significant effects previously examined will be substantially more severe than shown in the previous MND;

    As concluded in this addendum, the new meters would not substantially increase risk or result in more severe impacts than evaluated in the previous MND. All other operational characteristics of the Project remain unchanged from those evaluated in the previous MND.

c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative, or;

All the original mitigation measures would apply to the Project. No new mitigation measures are necessary.

d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous MND would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

The existing mitigation measures in the MND reduce all impacts to less than significant. No additional mitigation measures are warranted.

As indicated in this Addendum, the impacts of the Project do not represent a substantial change to the original adopted MND, nor does it have any substantial changes with respect to the circumstances under which the project is undertaken, that would require major revisions to the original adopted MND. Analysis of the Project shows that there are no new significant environmental effects or a substantial increase in the severity of previously identified significant effects as a result of the Project.

Impacts beyond those identified and analyzed in the adopted MND would not be expected to occur as a result of the Project, and the Project would remain subject to all applicable previously required mitigation measures from the adopted MND. The Project would not result in any new information of substantial importance that would have new, more severe impacts, new mitigation measures, or new or revised alternatives from what was identified in the original adopted MND.

Based on the record as a whole, there is no substantial evidence that the Project would result in significant environmental impacts not previously studied in the MND and, accordingly, the project changes would not result in any conditions identified in CEQA Guidelines Section 15162. Thus, a supplemental or subsequent EIR or MND is not required for the Project.

Appendix A: Initial Study/Mitigated Negative Declaration

Mettler County Water District

Well 4 TCP and Nitrate Mitigation Project

Final Initial Study/ Mitigated Negative Declaration

January 2021



Prepared for:

Mettler County Water District

Prepared by:
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Acronyms and Abbreviations

AB ..... Assembly Bill
CalEEMod ..... California Emissions Estimator Model
CalEPA ..... California Environmental Protection Agency
Cal/OSHA ..... California Division of Occupational Safety and Health
Caltrans ..... California Department of Transportation
CARB ..... California Air Resources Board
CCAA ..... California Clean Air Act
CDFW ..... California Department of Fish and Wildlife
CEQA ..... California Environmental Quality Act
CH_4 ..... Methane
CNDDB ..... California Department of Fish and Wildlife Natural Diversity Database
CNPS ..... California Native Plant Society
CO ..... Carbon Monoxide
CO_2e ..... Carbon Dioxide Equivalent
DDW ..... Division of Drinking Water
District ..... Mettler County Water District
DTSC ..... Department of Toxic Substance Control
DWR ..... Department of Water Resources
EIR ..... Environmental Impact Report
EPA ..... U.S. Environmental Protection Agency
FEMA ..... Federal Emergency Management Agency
FMMP ..... Farmland Mapping and Monitoring Program
GAC ..... Granular Activated Carbon
GC ..... Government Code
GHG ..... Greenhouse Gas
GIS ..... Geographic Information System
IS ..... Initial Study
IS/MND ..... Initial Study/Mitigated Negative Declaration
MCL ..... Maximum Contaminant Level
MMRP ..... Mitigation Monitoring & Reporting Program
MND ..... Mitigated Negative Declaration
MRZ ..... Mineral Resource Zones

$MTCO_2e$ ..... Metric Tons of Carbon Dioxide Equivalent
NAAQS ..... National Ambient Air Quality Standards
ND ..... Negative Declaration
NO_2 ..... Nitrogen Dioxide
NOX ..... Nitrogen Oxide
NPDES ..... National Pollutant Discharge Elimination System
NRCS ..... Natural Resources Conservation Service
O_3 ..... Ozone
PM_{10} ..... Particulate Matter less than 10 microns in diameter
$PM_{2.5}$ ..... Particulate Matter less than 2.5 microns in diameter
Project ..... Mettler County Water District, Well 4 TCP and Nitrate Mitigation
RWQCB ..... Regional Water Quality Control Board
SJVAB ..... San Joaquin Valley Air Basin
SJVAPCD ..... San Joaquin Valley Air Pollution Control District
SO_2 ..... Sulfur Dioxide
SR ..... State Route
SWRCB ..... State Water Resources Control Board
SWPPP ..... Storm Water Pollution Prevention Plan
TAC ..... Toxic Air Contaminants
TCP 1,2,3-trichloropropane
USDA ..... U. S. Department of Agriculture
USFWS ..... U. S. Fish and Wildlife Service
USGS ..... U. S. Geological Survey

Chapter 1 Introduction

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of Mettler County Water District (District) to address the potential environmental effects of the Well 4 TCP and Nitrate Mitigation Project (Project or proposed Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 *et seq*. The District is the CEQA lead agency for this proposed Project.

The site and the proposed Project are described in detail in the **Project Description, Chapter 2**.

1.1 Regulatory Information

An Initial Study (IS) is a document prepared by a lead agency to determine whether a project may have a significant effect on the environment. In accordance with California Code of Regulations Title 14 (Chapter 3, Section 15000, *et seq*.)-- also known as the CEQA Guidelines-- Section 15064 (a)(1) states that an environmental impact report (EIR) must be prepared if there is substantial evidence in light of the whole record that the proposed Project under review may have a significant effect on the environment and should be further analyzed to determine mitigation measures or project alternatives that might avoid or reduce project impacts to less than significant levels. A negative declaration (ND) may be prepared instead if the lead agency finds that there is ***no*** substantial evidence in light of the whole record that the project may have a significant effect on the environment. An ND is a written statement describing the reasons why a proposed Project, not otherwise exempt from CEQA, would not have a significant effect on the environment and, therefore, why it would not require the preparation of an EIR (CEQA Guidelines Section 15371). According to CEQA Guidelines Section 15070, a ND or *mitigated* ND shall be prepared for a project subject to CEQA when either:

a. The IS shows there is no substantial evidence, in light of the whole record before the agency, that the proposed Project may have a significant effect on the environment, or

b. The IS identified potentially significant effects, but:

    1. Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed MND and IS is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur is prepared, and

    2. There is no substantial evidence, in light of the whole record before the agency, that the proposed Project *as revised* may have a significant effect on the environment.

1.2 Document Format

This IS/MND contains six chapters and four appendices. **Chapter 1, Introduction**, provides an overview of the proposed Project and the CEQA process. **Chapter 2, Project Description**, provides a detailed description of proposed Project components and objectives. **Chapter 3, Impact Analysis**, presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures. If the proposed Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the proposed Project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level. **Chapter 4, Mitigation Monitoring and Reporting Program** (MMRP),

provides the proposed mitigation measures, implementation timelines, and the entity/agency responsible for ensuring implementation. **Chapter 5 is References** and **Chapter 6 is Preparers.**

The Air Quality and Greenhouse Gas Emissions Report - CalEEMod Output Files, Biological Evaluation Report, Cultural Resources Survey Report, and NRCS Soil Resource Report are provided as technical **Appendix A**, **Appendix B**, and **Appendix C**, respectively, at the end of this document.

The analyses of environmental impacts in **Chapter 3** are separated into the following categories:

Potentially Significant Impact. This category is applicable if there is substantial evidence that an effect may be significant, and no feasible mitigation measures can be identified to reduce impacts to a less than significant level. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

Less than Significant with Mitigation Incorporated. This category applies where the incorporation of mitigation measures would reduce an effect from a "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measure(s), and briefly explain how they would reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

Less than Significant Impact. This category is identified when the proposed Project would result in impacts below the threshold of significance, and no mitigation measures are required.

No Impact. This category applies when a project would not create an impact in the specific environmental issue area. "No Impact" answers do not require a detailed explanation if they are adequately supported by the information sources cited by the lead agency, which show that the impact does not apply to the specific project (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

Chapter 2 Project Description

2.1 Project Background and Objectives

2.1.1 Project Title

Mettler County Water District, Well 4 TCP and Nitrate Mitigation Project

2.1.2 Lead Agency Name and Address

Mettler County Water District
1822 Stevens Drive
Bakersfield, CA 93313

2.1.3 Contact Person and Phone Number

Lead Agency Contact
Regina Houchin

CEQA Consultant
Provost & Pritchard Consulting Group
Briza Sholars, Environmental Project Manager
(559) 449-2700

2.1.4 Project Location

Mettler County Water District (District), is located approximately 14 miles south of Bakersfield. The well site is an existing operational well site for two wells. Well No. 3, currently in use and Well No. 4 which has high levels of TCP that requires treatment. The well site is zoned Medium Industrial, Precise Development Combining and designated as General Commercial, Residential (Max 10 Units/New Acre) and Service Industrial by the Kern County General Plan, See **Figure 3-3** and **Figure 3-4** respectively.

2.1.5 Latitude and Longitude

The approximate centroid of the Project area, including the pipeline alignment, is Western end 35.0641570, -118.9726030 and Eastern end 35.0641135, -118.9703081.

2.1.6 General Plan Designation

Table 2-1. General Plan Designation

Project Area	General Plan Designation
General Plan Land Use(Onsite):	General Commercial
General Plan Land Use(Onsite):	Residential (Max 10 Units/New Acre)
General Plan Land Use(Onsite):	Service Industrial
General Plan Land Use (Adjacent lands):	Service Industrial (north of APE)
General Plan Land Use (Adjacent lands):	Intensive Agriculture (Min. 20 Acre Parcel Size) (E of APE)

2.1.7 Zoning

Table 2-2. County Zone District

Project Area	Zone District
Zoning (Onsite):	Medium Industrial, Precise Development Combining
Zoning (Adjacent Lands):	Low Density Residential, Mobile home Combining and Medium Industrial, Precise Development Combining

2.1.8 Description of Project

2.1.8.1 District Background and Purpose

Mettler County Water District (District) supplies drinking water to approximately 40 commercial and residential service connections. The water system is supplied by two active groundwater wells (Wells 3 and 4). Nitrate and the synthetic organic contaminant 1,2,3-trichloropropane (TCP) have been detected at levels higher than their respective maximum contaminant levels (MCLs) at Well 4. The District is currently under State Water Resources Control Board Division of Drinking Water (DDW) compliance orders for both TCP and nitrate for Well 4. The purpose of this project is to mitigate the TCP and nitrate contamination and bring the water system into compliance with both standards.

Wells 3 and 4 are the only water sources supplying the District. Both wells are located on the north side of Lupin street. Well 4 is situated approximately 570 feet east of Well 3. Well depths to the lowest screened/gravel packed section for Wells 3 and 4 are approximately 650 and 550 feet respectively. Both wells include concrete seals above the screened intervals. The well capacity for each well is reported by the contract water system operator (Golden Empire Water) to be approximately 400 gpm. Well 3 is equipped with a submersible pump, a 2,000-gallon hydropneumatic tank, a sodium hypochlorite feed system, and a 125,000-gallon at-grade bolted steel storage tank. Three booster pumps pump water from the storage tank into the hydropneumatic tank that supplies the distribution system. Well 4 is equipped with a submersible pump, a sodium hypochlorite feed system, and a hydropneumatic tank that supplies water directly into the distribution system. Both well sites are enclosed by chain-link fences. The existing electrical service is currently limited to operating only one well at a time. Part of the project is to upgrade the electrical service to allow both wells to operate simultaneously.

1,2,3, TCP: 1,2,3-trichloropropane (TCP) is an exclusively man-made synthetic organic chemical and a carcinogen. TCP was used as a component in agricultural soil fumigants applied over large areas of the Central Valley, including Kern County. TCP is heavier than water, very slow to biodegrade naturally, and is sparingly volatile – all characteristics that make it persistent in the groundwater and difficult to treat.

In August 2009, the California Office of Environmental Health Hazard Assessment (OEHHA) established a California Public Health Goal (PHG) for TCP of 0.0007 µg/L (0.7 parts per trillion) based on carcinogenicity. This is the second lowest California PHG among all drinking water contaminants. On December 14, 2017 DDW adopted a maximum contaminant level for TCP of 5 parts per trillion (ppt), which is equal to the current detection limit for purposes of reporting (DLR). The MCL has now gone into effect and the District is under a TCP compliance order for Well 4.

Nitrate is a regulated drinking water contaminant with a PHG and MCL of 10 mg/L reported as nitrogen (N) or 45 mg/L reported as nitrate (NO3). Nitrate occurrence is associated with erosion of natural deposits, fertilizer production and application, and animal and human waste. The District is under a nitrate compliance order for Well 4.

2.1.8.2 Project Background and Description

Provost & Pritchard prepared a technical memorandum titled "Mettler CWD 1,2,3-Trichloropropane and Nitrate Mitigation Feasibility Study" to define design treatment methods associated with contamination from the synthetic organic chemical (SOC) 1,2,3-trichloropropane (TCP) and nitrate at one of the community's wells (Well 4). The Mitigation Study identified improvements required to treat the TCP with granular activated carbon (GAC) and blend the Well 4 water with Well 3 water to reduce the level of nitrate. The nitrate blending system is assumed to consist of passive, manually adjustable, flow control valves and flow meters with a nitrate analyzer to monitor performance. The project is in a developed area (truck stop and rest area). The Area of Potential Effect is approximately 18,000 sq ft including a 20 ft corridor for the new pipeline connecting the Well 4 discharge to the treatment site.

The proposed project consists of water treatment facilities at the existing Well 3 site. Specific dimensions of construction components are listed below:

- *GAC vessels (2 total): 12' diameter; 15'-0" tall; 18'x36'x2' concrete foundation*
- *Backwash supply tank: 32'-8" diameter; 16'-1" tall; 2'x3' ring wall footing*
- *Electrical service upgrade – to allow both well pumps to operate simultaneously*
- *Approx. piping:*
    - *4" pipe – 100'*
    - *6" pipe – 500'*
    - *8" pipe – 250'*
    - *12" pipe – 80'*
- *Reclaim pump: 40 gpm pump on 6' x 4' concrete pad*
- *Backwash Supply Pump: 1,500 gpm on 6' x 4' concrete pad*
- *Chain link fence: 250 LF; and 30' double access gate*
- *Site improvements area: ≈ 7,000 sf*
- *Nuisance Water Pond: 25ft x50ft (20,000 gal)*

2.1.8.3 Construction/ Operation and Maintenance

Construction of the Project is anticipated to be completed within twelve months, which will include grading, construction. Construction will likely take place January 2021 to December 2021. Construction equipment will likely include an excavator, backhoe/loader, concrete truck, concrete pumper. Construction will require one super, one foreman, two operators, four laborers/carpenters/masons.

Generally, construction will occur between the hours of 7 am and 5 pm, Monday through Friday, excluding holidays. Post-construction activities will include system testing, commissioning, and site clean-up. Construction will require temporary staging and storage of materials and equipment. Staging areas will be located onsite.

Although construction is not expected to generate hazardous waste, field equipment used during construction has the potential to contain various hazardous materials such as diesel fuel, hydraulic oil, grease, solvents, adhesives, paints, and other petroleum-based products.

Operation and maintenance of Wells 3 and 4 will continue to be performed by Mettler County Water District's existing maintenance staff.

2.1.9 Surrounding Land Uses and Setting

The APE is located within Mettler, a Census Designated Place in southern Kern County. The Community of Mettler lies in a productive agricultural region, and is essentially surrounded by row crops, orchards and vineyards. State Route 99, a north-south arterial route in California, is located to the immediate east of the community. Interstate 5 is located 1.5 miles to the west and is accessed via Hwy 166. The APE is bordered by Lupine Street to the south, and Mettler Frontage Rd to the east.

The Project area is surrounded by agricultural lands to the north and a residential neighborhood to the south, east and west.

2.1.10 Other Public Agencies Whose Approval May Be Required

- County of Kern – Grading Permit and Building Permit
- State Water Resources Control Board – NPDES Construction General Permit
- San Joaquin Valley Air Pollution Control District – rules and regulations (Regulation VIII, Rule 9510; Regulation IV, Rule 4702)

2.1.11 Consultation with California Native American Tribes

Assembly Bill 52 (AB 52; codified at Public Resources Code Section 21080.3.1, *et seq.*) requires that a lead agency, within 14 days of determining that it will undertake a project, must notify in writing any California Native American Tribe traditionally and culturally affiliated with the geographic area of the project if that Tribe has previously requested notification about projects in that geographic area. The notice must briefly describe the project and inquire whether the Tribe wishes to initiate request formal consultation. Tribes have 30 days from receipt of notification to request formal consultation. The lead agency then has 30 days to initiate the consultation, which then continues until the parties come to an agreement regarding necessary mitigation or agree that no mitigation is needed, or one or both parties determine that negotiation occurred in good faith, but no agreement will be made.

Mettler County Water District has not received any written correspondence from a Tribe pursuant to Public Resources Code Section 21080.3.1 requesting notification of proposed projects. All project Tribal correspondence is discussed in further detail in Sections 3.5 and 3.18 of **Chapter 3 Impact Analysis**.

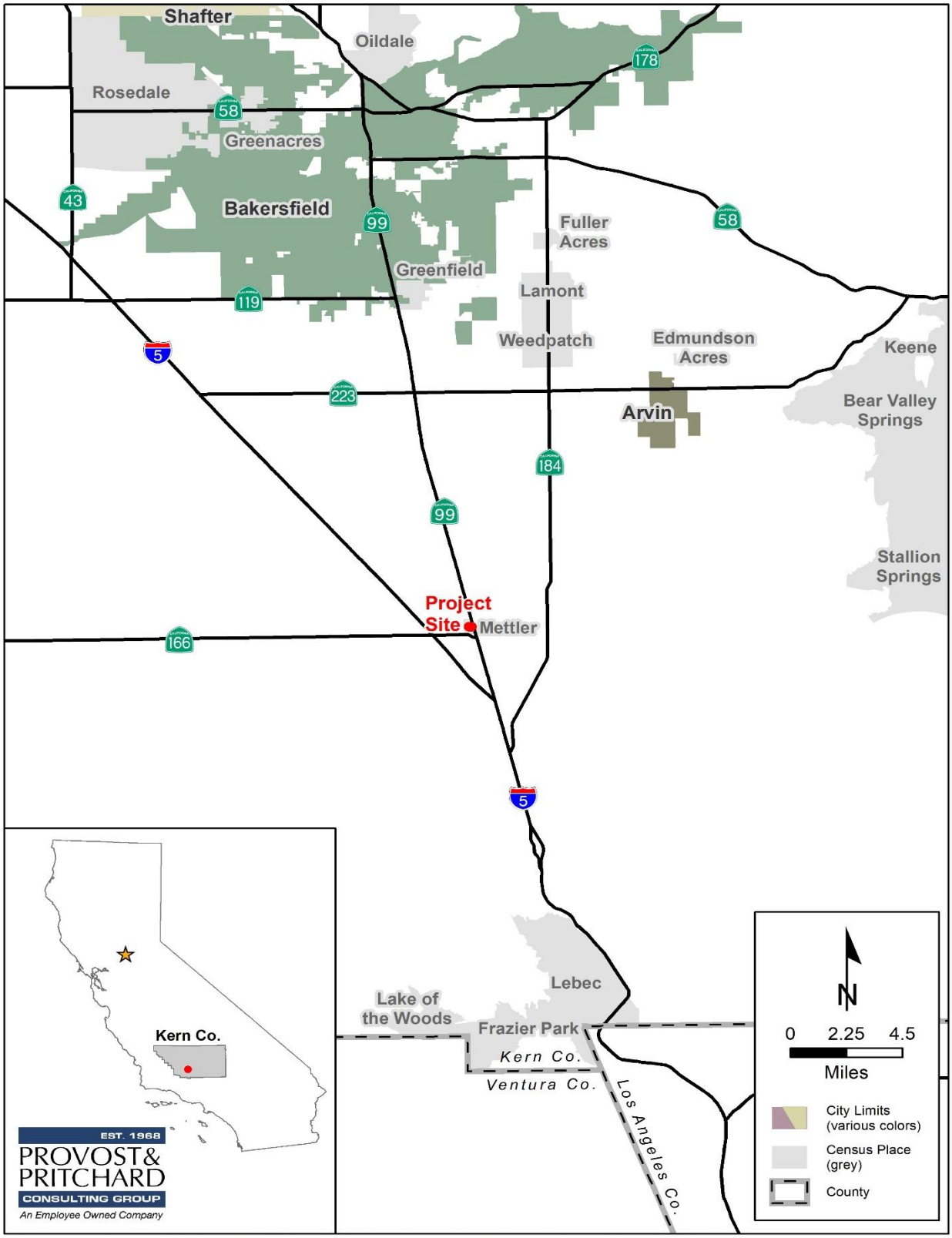


Figure 2-1. Regional Location Map

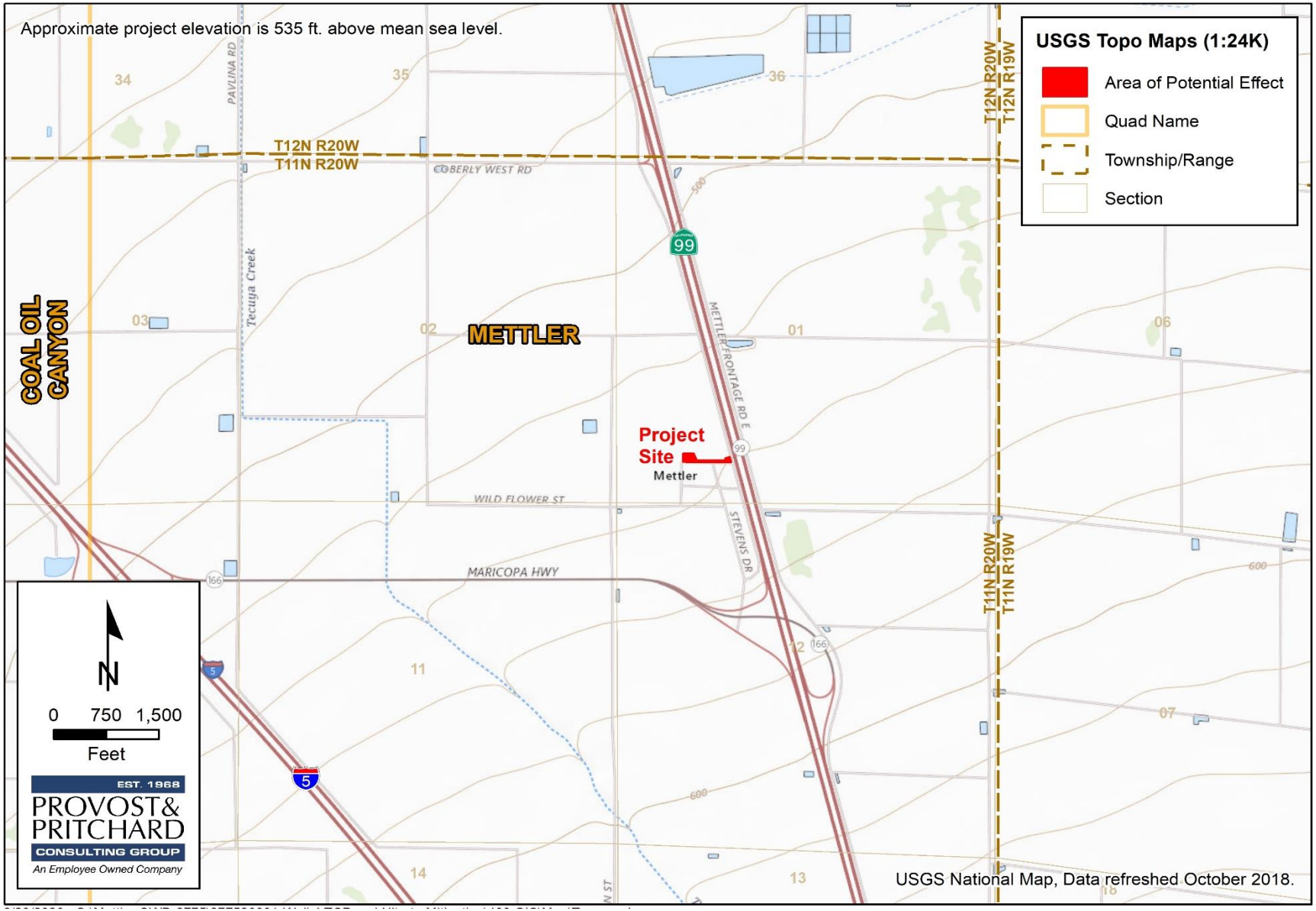


Figure 2-2. Topographic Quadrangle Map



Figure 2-3. Area of Potential Effect Map



Figure 2-4. Site Plan

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

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

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

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



Signature

12/1/2020

Date

Regina K. Hauchin, Secretary to the Board

Printed Name/Position

Chapter 3 Impact Analysis

3.1 Aesthetics

Table 3-1. Aesthetics Impacts

Aesthetics				
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?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

3.1.1 Environmental Setting

The Project is located in Mettler, a Census Designated Place in southern Kern County, CA. Lands in the vicinity consist of relatively flat irrigated farmland and the rural residential community of Mettler. Agricultural practices in the vicinity consist of row crop and orchard cultivation. In Kern County, two portions of State Route 14 (SR 14) - near Mojave/I-15 near Barstow and near Little Lake/Route 89 near Coleville, and a portion of SR 46 near Cholame have been officially identified by Caltrans as a "designated state Scenic Highway;" however, none of these areas are close to the Project area. Mettler is located approximately 20 miles west of the foothills of the Sierra Nevada and approximately 50 miles east of the foothills of the Coastal Range. Neither of these foothills or mountain ranges are visible from the vantage point of the Project site. The Project site is currently home to the two wells and associated infrastructure. The implementation of the proposed Project will not interfere with the aesthetics of the area and be consistent with the current infrastructure and facilities already on site.

3.1.2 Impact Assessment

a) Have a substantial adverse effect on a scenic vista?

No Impact. Scenic features in the vicinity may include the vast expanse of agricultural uses and the Sierra Nevada Mountains to the East. The Project site is not within the viewshed of any scenic vistas nor would the views of the Sierra Nevada Mountains be obstructed by the proposed Project. There would be 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 Scenic Highway Program was created to preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways. A highway may be officially designated "scenic" depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. There are no trees, rock outcroppings, or historical buildings or designated state scenic highway that would be substantially damaged by the Project. There would be no impact.

c) Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact. The Project site is surrounded by agricultural and residential uses. The Project is located on a flat parcel which is currently occupied by two well sites. The proposed water treatment system would be located adjacent to existing Well No. 3, which is towards the west end of the parcel. This may partially obstruct the adjacent agricultural field; however, the water treatment system will blend in with the existing well components and be consistent with the development of the site and area, minimizing any potential visual impacts. The proposed 6-inch water transmission pipeline will be located within Lupine Street right-of-way, adjacent to residentially zoned uses. This pipeline would be buried and not visible from the residences or passing vehicles. Additionally, the Project does not conflict with the Medium Industrial zoning onsite. Impacts would be less than significant.

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

No Impact. The Project site is surrounded by agriculture and residential uses. Lighting is not proposed during the operation of the project nor will be used during construction. Vehicular traffic after construction will be limited to maintenance and monitoring on an as-needed basis which will be performed during daylight hours, except in an unforeseen emergency situations. Therefore, the Project will not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area or be inconsistent with existing conditions.

3.2 Agriculture and Forestry Resources

Table 3-2. Agriculture and Forestry Resources Impacts

Agriculture and Forest Resources				
Would the project:	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Environmental Setting

The Project is located in the California's Central San Joaquin Valley in Kern County and more specifically within the unincorporated community of Mettler. Kern County is located within California's agricultural heartland. For crop year 2016-2017, Kern County ranked second for the top agricultural counties in the State in the estimated value of agricultural production, which is 7.04 billion dollars.[1]

A wide range of commodities are grown in the county, with major production of milk, poultry, livestock, and other animal commodities, row crops, nuts and fruit tree crops, and vegetables. Rich soil, irrigation water, Mediterranean climate and steady access to local, national and global markets make this possible.

[1] USDA. California County Agricultural Commissioners' Reports 2016-2017. https://www.nass.usda.gov/Statistics_by_State/California/Publications/AgComm/2017/2017cropyearcactb00.pdf Accessed March 13, 2019.

3.2.2 Impact Assessment

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 Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data use for analyzing impacts to California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland. The Important Farmland maps identify eight land use categories, five of which are agriculture related: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, and grazing land. The ones onsite or adjacent to the Project site are summarized below[2]:

- *FARMLAND OF STATEWIDE IMPORTANCE (S): Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.*
- *URBAN AND BUILT-UP LAND (D): Land occupied by structures with a building density of at least 1 unit per 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.*

As demonstrated in **Figure 3-1**, the FMMP for Kern County designates the site of Well No. 3 and the proposed 6-inch pipeline as Urban Built-Up Land and Semi-Ag. The existing County basin is within a portion of Farmland of State Local importance designated land and the remainder in Urban and Built-Up Land. Implementation of the Project will not result in the conversion of farmland to a non-agricultural use. There will be no impact.

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

No Impact. The Project site is not located on a parcel that is zoned for agriculture use. The Project involves development of a water treatment system, proposed 6-inch water transmission pipeline, and site improvements/developments that include but are not limited to a nuisance water pond. Implementation of the Project will not result in a conflict with existing zoning for agricultural use, nor will it conflict with Williamson Act contracts of agricultural uses in the vicinity. There would be no impact.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

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

No Impact. There are no forest lands or timberlands within the Project site or vicinity to which the proposed Project would cause rezoning or conversion. There would be no impact.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The Project will not result in land use conversion of farmland or forest land, either directly or indirectly. There would be no impact.

[2] California Department of Conservation. FMMP – Report and Statistics. http://www.conservation.ca.gov/dlrp/fmmp/products/Pages/ReportsStatistics.aspx. Accessed March 13, 2019.

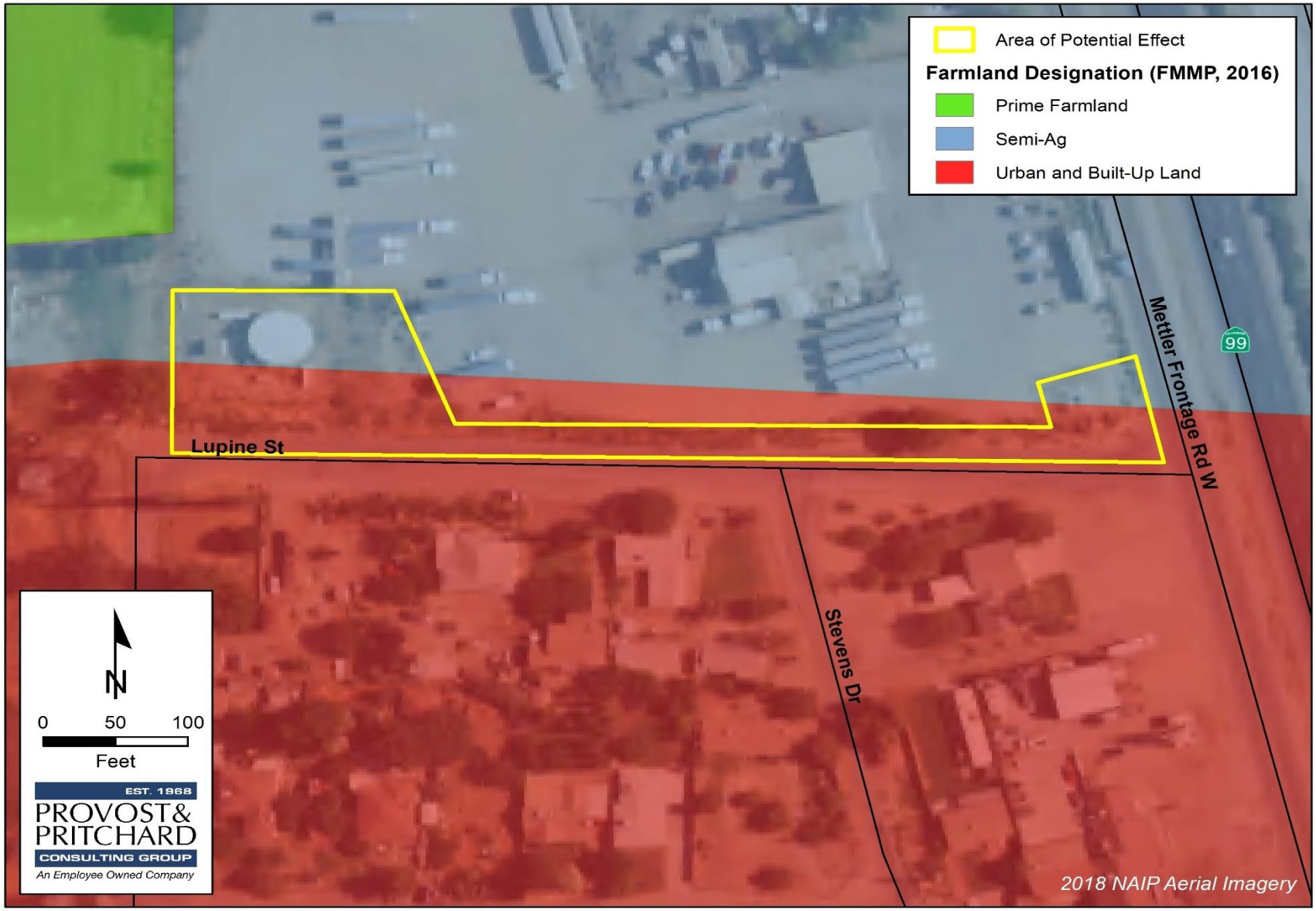


Figure 3-1. Farmland Designation Map

3.3 Air Quality

Table 3-3. Air Quality Impacts

Air Quality					
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:		**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d)	Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?	☐	☐	☒	☐

3.3.1 Environmental Setting

The Project is located in the San Joaquin Valley Air Basin (SJVAB or air basin). The San Joaquin Valley Air Pollution Control District (SJVAPCD) provides Guidelines for Assessing and Mitigating Air Quality Impacts (GAMAQI) for quantification of emissions and evaluation of potential impacts to air resources[3] and Guidance for Land-Use Agencies in addressing greenhouse gas (GHG) Emission Impacts for New Projects under CEQA.[4]

3.3.1.1 Regulatory Attainment Designations

Under the California Clean Air Act (CCAA), the California Air Resources Board (CARB) is required to designate areas of the State as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary

[3] SJVAPCD GAMAQI https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF. Accessed July 2020.
[4] Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf Accessed September 2020.

standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

The State and national attainment status designations pertaining to the SJVAB are summarized in **Appendix A**. The SJVAB is currently designated as a nonattainment area with respect to the State PM_{10} standard, ozone, and $PM_{2.5}$ standards. The SJVAB is designated nonattainment for the NAAQS 8-hour ozone and $PM_{2.5}$ standards. On September 25, 2008, the EPA re-designated the San Joaquin Valley to attainment status for the PM_{10} NAAQS and approved the PM_{10} Maintenance Plan.

Table 3-4. Summary of Ambient Air Quality Standards and Attainment Designation

Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Nonattainment/ Severe	–	No Federal Standard
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment (Extreme)**
Particulate Matter (PM_{10})	AAM	20 µg/m^3	Nonattainment	–	Attainment
	24-hour	50 µg/m^3		150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	Nonattainment	12 µg/m^3	Nonattainment
	24-hour	No Standard		35 µg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment/ Unclassified	35 ppm	Attainment/ Unclassified
	8-hour	9 ppm		9 ppm	
	8-hour (Lake Tahoe)	6 ppm		–	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	53 ppb	Attainment/ Unclassified
	1-hour	0.18 ppm		100 ppb	
Sulfur Dioxide (SO_2)	AAM	–	Attainment	--	Attainment/ Unclassified
	24-hour	0.04 ppm		--	
	3-hour	–		0.5 ppm	
	1-hour	0.25 ppm		75 ppb	
Lead (Pb)	30-day Average	1.5 µg/m^3	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		-	
	Rolling 3-Month Average	–		0.15 µg/m^3	
Sulfates (SO_4)	24-hour	25 µg/m^3	Attainment	No Federal Standards	
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm (42 µg/m^3)	Unclassified		
Vinyl Chloride (C_2H_3Cl)	24-hour	0.01 ppm (26 µg/m^3)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more due to particles when the relative humidity is less than 70%.	Unclassified		

** For more information on standards visit: https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf*
*** No Federal 1-hour standard. Reclassified extreme nonattainment for the Federal 8-hour standard September 2020.*
****Secondary Standard*
Source: CARB 2015; SJVAPCD 2015

3.3.2 Methodology of Determining the Significance of Air Quality Impacts

Conclusions in this Air Quality Impact Assessment rely on model calculations (CalEEMod version 2016.3.2), and information found in the Air Quality and Greenhouse Gas Emissions Report (**Appendix A**). The sections below detail these conclusions and recommendations and utilize its conclusions in the impact determinations.

To assist local jurisdictions in the evaluation of air quality impacts, the SJVAPCD published the GAMAQI. This guidance document includes recommended thresholds of significance to be used for the evaluation of short-term construction, long-term operational, odor, toxic air contaminant, and cumulative air quality impacts. Accordingly, the SJVAPCD-recommended thresholds of significance are used to determine whether implementation of the Project would result in a significant air quality impact. Projects that exceed these recommended thresholds would be considered to have a potentially significant impact to human health and welfare. The thresholds of significance are included in **Table 3-7** through **Table 3-8** to provide for a comparative significance determination.

Assessment of the significance of project air quality impacts may be considered on a regional or localized level. Determination of project impacts on achieving the goal of air quality plans and evaluating impacts related to emissions of criteria pollutants are considered on both regional and localized levels in this analysis. Evaluation of impacts to sensitive receptors considers the project's localized criteria pollutant emissions in this analysis. Sources of the project's localized criteria pollutant emissions would include: reactive organic gases (ROG), Nitrogen oxides (NO_x), $PM_{2.5}$, PM_{10}, CO, NO_2, and Toxic Air Contaminants (TACs) which include acetaldehyde, benzene, 1.3 butadiene, carbon tetrachloride, hexavalent chromium, paradichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter a complex mixture of substances.

3.3.2.1 Short-Term Construction-Generated Emissions

Short-term construction emissions associated with the Project were estimated using CalEEMod. The emissions modeling includes emissions generated by construction and grading equipment most commonly associated with the site work, equipment delivery, and vehicle, equipment, and worker fuel usage. Emissions were quantified based on anticipated construction schedules and construction equipment requirements that would occur over approximately 12 months. All remaining assumptions were based on the default parameters contained in the model. Modeling assumptions and output files are included in **Appendix A**.

The SJVAPCD is responsible for controlling emissions primarily from stationary sources. However, the SJVAPCD also coordinates with the APCD's eight county Councils of Government (COGs) or Metropolitan Planning Organizations (MPOs) that are responsible for regional transportation planning and funding programs. The COG and MPO Transportation Planning Programs are used by SJVAPCD in its responsibilities in developing, updating, and implementing air quality attainment plans for the air basin. The SJVAPCD has adopted ozone plans and particulate matter plans for purposes of controlling harmful emissions and achieving attainment of state and national attainment standards. A project that would exceed established thresholds for criteria pollutants would be considered to have a significant impact on the implementation of air quality plans and would also constitute a cumulatively considerable net increase of criteria pollutants for which the air basin is in non-attainment.

Construction of the Project is expected to begin after Project approval with full buildout completed in 2021. The results of the emissions modeling for the Project are presented in **Table 3-5.**

Table 3-5 Short-Term - Construction-Generated Emissions of Criteria Air Pollutants

Year	Annual Emissions (Tons/Year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
2021	0.1026	1.0127	0.9455	0.0772	0.0593
SJVAPCD Significance Thresholds:	***10***	***10***	***100***	***15***	***15***
Exceed SJVAPCD Thresholds?	***No***	***No***	***No***	***No***	***No***

3.3.2.2 Long-Term - Operational Emissions

The unmitigated long-term operational emissions for the Project are listed in **Table 3-6**. Operational emissions would occur over the lifetime of the Project and result from two main Project-specific sources: site maintenance, and motor vehicles (operations and maintenance crew) usage categorized as mobile sources in the table. Area source emissions are defined as emissions resulting from landscaping and painting. Energy source emissions would be from things on the site that require additional power. For this project there are no new electrical improvements. Completion of the Project is expected as early as 2021 and was used as the Project buildout modeling year as a conservative assumption. The SJVAPCD considers construction and operational assumptions separately when making significance determinations. Modeling assumptions and output files are included in **Appendix A**.

Table 3-6. Unmitigated Long-Term Operational Emissions

Source	Annual Emissions (Tons/Year)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	<0.01	0.00	<0.01	0.00	0.00
Energy:	0.00	*0.00*	*0.00*	0.00	0.00
Mobile	0.00	*0.00*	*0.00*	0.00	0.00
Highest Operational Emissions Any Year	**<0.01**	**0.00**	**<0.01**	**0.00**	**0.00**
SJVAPCD Significance Thresholds:	***10***	***10***	***100***	***15***	***15***
Exceed SJVAPCD Thresholds?	***No***	***No***	***No***	***No***	***No***

3.3.3 Screening Thresholds for Determining Impacts to Sensitive Receptors

Impacts to sensitive receptors would occur primarily during Project construction. Construction activities could produce short-term emissions that have the potential in large concentrations to contribute to cancer risk over a 70-year exposure period. The Air Quality and Greenhouse Gas Emissions Report - CalEEMod Output Files (**Appendix A**) provides technical information on the types of pollutants that have the potential to affect sensitive receptors.

The SJVAB includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities that exceed the 100 pounds per day screening level of any criteria pollutant after compliance with Rule 9510 and implementation of all applicable mitigation measures would require preparation of an ambient air quality analysis. The criteria pollutants of concern are NO_x, CO, PM_{10}, and $PM_{2.5}$. There is no localized emission standard for ROG and most types of ROG are not toxic and have no health-based standard, however, ROG was included for informational purposes only.

Table 3-7 lists the maximum daily air pollutant emissions generated by the Project during construction.

Table 3-7. Maximum Daily Air Pollutant Emissions During Construction

Maximum Daily Emissions by Year	Emissions (Pounds/Daily)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Construction 2021	1.4935	15.1104	11.9385	1.6367	1.1171
SJVAPCD Screening Thresholds	***100***	***100***	***100***	***100***	***100***

Operational emission would begin to accrue upon completion of the Project. The Project is anticipated to be completed in 2022. Table 3-8 lists the maximum daily air pollutant emissions generated by the Project during its operation.

Table 3-8. Maximum Daily Air Pollutant Emissions During Operation

Maximum Daily Emissions	Emissions (Pounds/Daily)				
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Area	<0.01	<0.01	<0.01	<0.01	<0.01
Energy	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00
Total Daily Emissions	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**
SJVAPCD Screening Thresholds	***100***	***100***	***100***	***100***	***100***
Exceed SJVAPCD Thresholds?	***No***	***No***	***No***	***No***	***No***

Table 3-7 and Table 3-8 demonstrate the Project's impacts as evaluated against SJVAPCD screening thresholds for criteria pollutant emissions used to determine significance in accordance with health-based standards would not exceed and would be considerably below the significance thresholds

3.3.4 Impact Assessment

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. The CEQA Guidelines indicate that a significant impact would occur if the Project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI does not provide specific guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, the Air Quality and Greenhouse Gas Emissions Report - CalEEMod Output Files (**Appendix A**) assumed the following criteria for determining Project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs?

   Whether this criterion is met is determined by comparison of Project emissions to the regional and localized thresholds identified by the SJVAPCD for regional and local air pollutants.

2. Will the project comply with applicable control measures set forth in the AQPs?

   The primary control measures applicable to development projects in the SJVAPCD is the required compliance with *Regulation VIII-Fugitive PM_{10} Prohibitions* and *Rule 9510-Indirect Source Review*.

Regional air quality impacts and attainment of standards are the result of cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the Project is important because it is based on its cumulative contribution combined with one or more other closely related past, present, and reasonably foreseeable probably future projects emitting similar emissions. Because of the region's non-attainment status for ozone, $PM_{2.5}$, and $PM_{10,}$ if Project generated emission of either of the ozone precursor pollutants ROG, NO_x, PM_{10}, or $PM_{2.5}$ would exceed the SJVAPCD's significance thresholds, then the Project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans. As demonstrated in **Table 3-5** for construction-generated emissions, and in **Table 3-6**, operational emissions of criteria pollutants would not exceed the SJVAPCD's significance thresholds. Therefore, the Project will not contribute to air quality violations in conflict with attainment plans.

As stated in No. 2 above, the AQP contains a number of control measures, including *Rule 9510-Indirect Source Review* which are applicable to the Project. Both of these are adopted by the SJVAPCD and constitute enforceable requirements with which the Project must comply. The Project is expected to comply with all applicable SJVAPCD rules and regulations; therefore, the Project complies with the criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plans and the impact would be less than significant.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less than Significant Impact. To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emission of non-attainment pollutants must be below the SJVAPCD's regional significance thresholds.

   This is an approach recommended by the SJVAPCD in its GAMAQI.

2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations.

This is an approach consistent with Section 15130(b) of the CEQA Guidelines.

3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the non-attainment pollutants.

   This approach correlates the significance of the regional analysis with health effects, consistent with the court decision in Bakersfield Citizens for Local Control v. City of Bakersfield (2004) 124 Cal.App.4th 1184, 1219-20.

As discussed in impact question a) above, Project generated emissions are below the SJVAPCD's regional significance thresholds and the Project is consistent with current air quality attainment plans including control measures and regulations.

With respect to cumulative health impacts, the air basin is in non-attainment for ozone, $PM_{2.5}$, and PM_{10} (state only), which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and persons with pre-existing respiratory or cardiovascular illnesses (the infirm)). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience adverse health effects. Since the air basin is already in non-attainment, it is considered to have an existing significant cumulative health impact without the Project. The issue is whether the Project's contribution to the existing violation of air quality standards is cumulatively considerable.

The SJVAPCD through its GAMAQI has determined that projects that exceed regional thresholds would have a cumulatively considerable health impact. As demonstrated in **Table 3-7** and **Table 3-8,** the project would not exceed the SJVAPCD's significance thresholds and its cumulatively considerable impacts would be less than significant.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. Sensitive receptors are those who are sensitive to air pollution, including children, the elderly, and the infirm. The SJVAPCD considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The closest existing off-site sensitive receptors are single-family homes located on adjacent properties across the street to the south.

As demonstrated in **Table 3-7** and **Table 3-8**, the Project would not exceed the SJVAPCD's thresholds established in accordance with health-based standard for determining significance of criteria pollutant emissions. Therefore, in accordance with these standards, the Project would have a less than significant impact related to exposure of sensitive receptors to substantial pollutant concentrations.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Impact. Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roaster, asphalt batch plants, and rendering plants, among other uses. The Project does not include any of these activities or land uses. The Project would therefore have no impact with respect to generation of emissions leading to odors or other adverse or objectionable emissions.

3.4 Biological Resources

Table 3-9. Biological Resources Impacts

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

3.4.1 Environmental Setting

The Project site is located in Kern County, which lies within the lower San Joaquin Valley, part of the Great Valley of California (See **Figure 2-3**). The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south.

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 12 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

The Project is located approximately 3 miles north of the California Aqueduct, within the Tecuya Creek watershed; Hydrologic Unit Code (HUC): 180300031103 (EPA, 2020). The nearest surface water feature is the channelized and ephemeral Tecuya Creek, located approximately 0.65 miles west of the APE.

The Project lies entirely within the Kern County Groundwater Subbasin of the San Joaquin Valley Groundwater Basin. (DWR, 2020).

3.4.2 Methodology

A reconnaissance-level field survey of the Area of Potential Effect (APE) and surrounding area was conducted on August 21, 2020 (see **Figure 2-3**). The survey consisted of walking through the APE while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Furthermore, the APE was assessed for suitable habitats of various wildlife species. (**Appendix B**)

An analysis was conducted of potential Project-related impacts to biological resources based on the resources known to exist or with potential to exist within the APE and surrounding areas. Sources of information used in preparation of this analysis included: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB); the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; the Jepson Herbarium online database (Jepson eFlora); United States Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS); the NatureServe Explorer online database; the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database; the CDFW California Wildlife Habitat Relationships (CWHR) database; the California Herps online database; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region. (**Appendix B**)

The field investigation did not include a wetland delineation or focused surveys for special status species. The field survey conducted included an appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from the Project. Furthermore, the field survey was sufficient to generally describe those features of the Project that could be subject to the jurisdiction of federal and/or State agencies, such as the United States. Army Corps of Engineers (USACE), CDFW, and the Regional Water Quality Control Board (RWQCB). (**Appendix B**)

Table 3-10. List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project APE
American badger (Taxidea taxus)	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	Absent. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. The nearest observation of this species was recorded in 2012 approximately 9 miles east of the Project in foothill grassland habitat in Tejon Ranch.
bald eagle (Haliaeetus leucocephalus)	CE, CFP	Resides in old growth forests as well as lower montane coniferous forests. Nests are generally found in large, old-growth trees within a mile of water. Nests and winters along ocean shores, lake margins, and rivers.	Unlikely. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. The only two regional observations of this species occurred in 2000 and 2001 approximately 9 miles southeast of the APE, directly adjacent to the California Aqueduct. At most this species could pass over the site during dispersal movements.
blunt-nosed leopard lizard (Gambelia sila)	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large	Unlikely. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. The two nearest recorded

Species	Status	Habitat	Occurrence on Project APE
		washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	observations of this species are from historical collections (1891 and 1955) and are each located approximately 3 miles from the APE.
Buena Vista Lake ornate shrew (Sorex ornatus relictus)	FE, CSC	Prefers moist soils, inhabiting marshes, swamps, and riparian shrublands. Uses stumps, logs, and leaf litter for cover.	Absent. Suitable habitat for this species is absent from the APE and surrounding area. The only regional recorded observation of this species occurred 19 years ago within the alkali sink shrub and mixed wetland habitat of the former Kern Lake Preserve, approximately five miles northwest of the APE.
burrowing owl (Athene cunicularia)	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by mammals, most often ground squirrels.	Unlikely. The presence of large trees and raptor perches makes this site unsuitable for burrowing owl. Ground squirrels and suitable burrows were absent, and no owl sign was observed during the field survey. The nearest observation of this species was recorded in 1990 within "lowland" habitat approximately 4 miles northeast of the Project.
California glossy snake (Arizona elegans occidentalis)	CSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas with loose soil for easy burrowing.	Absent. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. All regional recorded observations of this species come from historical collections dating between 1932 and 1952.
California legless lizard (Anniella sp.)	CSC	Inhabits a variety of habitats which contain moist, loose soils and plant cover. Often can be found under objects such as rocks, boards, driftwood, and logs.	Absent. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. All regional recorded observations of this species come from historical collections dating between 1864 and 1955.

Species	Status	Habitat	Occurrence on Project APE
coast horned lizard (Phrynosoma blainvillii)	CSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.	Absent. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. The only regional recorded observation of this species is from a historical collection dated 1891 and is mapped approximately 13 miles south-southwest of the APE within the Tehachapi Mountains.
Crotch bumble bee (Bombus crotchii)	CCE	Occurs throughout coastal California, as well as east to the Sierra-Cascade crest, and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	Absent. Suitable forage for this species is absent from the APE. The nearest recorded observation of this species is from a historical collection dated 1954 and is mapped "in the general vicinity of Arvin".
least Bell's vireo (Vireo bellii pusillus)	FE, CE	This migratory species breeds in southern California. Breeding habitat consists of dense, low, shrubby, riparian vegetation in the vicinity of water or dry river bottoms. By the early 1980s, this species was extirpated from most of its historic range in California, including the Central Valley. This species now occurs exclusively along the coast of southern California (USFWS, 1998).	Absent. The APE is outside the current known range of this species. The only regional observation of this species occurred in 1973 approximately 12 miles northeast of the APE. Focused surveys in this same area in 1977 and 1978 resulted in no observations of this species.
long-eared owl (Asio otus)	SSC	Occurs in riparian forests and woodlands, as well as scrublands. Requires adjacent open land for hunting mice, and the nests of crows, hawks, or magpies are required for breeding.	Unlikely. The APE is approximately 13 miles from the edge of this species current known range. The nearest recorded observation of this species occurred in 1999 approximately 9 miles east of the APE in non-native grasslands adjacent to riparian habitat. At most, this species could conceivably pass through the Project area during dispersal movements.

Species	Status	Habitat	Occurrence on Project APE
Nelson's antelope squirrel (Ammospermophilus nelsoni)	CT	Found in the western San Joaquin Valley on dry, sparsely vegetated loamy soils. Relies heavily on existing small mammal burrows.	Absent. The disturbed habitats and vegetative cover of the APE are unsuitable for this species. The only two regional recorded observations of this species occurred approximately 8 miles south-southeast of the APE and are from historical collections dated 1903.
pallid bat (Antrozous pallidus)	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.	Unlikely. Foraging habitat for this species is absent from the Project area. The only regional recorded observations of this species are from historical collections dated 1903 and 1918. At most this species could pass over the site during dispersal movements.
purple martin (Progne subis)	CSC	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities as well as in human-made structures. Nest often located in tall, isolated trees and snags.	Absent. Suitable nesting habitat for this species is absent from the Project area. None of the regional observations of this species occurred on the valley floor.
San Joaquin coachwhip (Masticophis flagellum ruddocki)	CSC	Found in open dry habitats with little or no tree cover in valley grassland and saltbush scrub communities in the San Joaquin Valley. Relies on mammal burrows for refuge and oviposition sites.	Unlikely. According to californiaherps.com (2020), this species is thought to be sensitive to disturbance and does not persist in cultivated areas. Suitable breeding habitat is absent from the APE with no mammal burrows observed during the survey. However, the abundance of cottontails at the site suggests there is potential suitable habitat in the surrounding area. The nearest recorded observation of this species occurred in 2010 approximately 5 miles south of the APE in valley foothill grassland habitat adjacent to the California Aqueduct.
San Joaquin kit fox (Vulpes macrotis mutica)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	Unlikely. The highly disturbed habitats of the Project area and fragmentation of the surrounding lands are unsuitable for this species. The Project is located approximately 20 miles east of the West Kern core population. Although some populations of San Joaquin Kit Fox in other parts of California have adapted to an urbanized environment, modern kit fox occurrences are locally scarce. At most,

Species	Status	Habitat	Occurrence on Project APE
			this species could conceivably pass through the Project area during dispersal movements (USFWS, 2010).
Swainson's hawk (Buteo swainsoni)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	Possible. Suitable nesting habitat is present adjacent to the APE in the form of several large cottonwood trees. The nearest recorded observation of this species was of an adult in a nest tree and occurred in 2017 approximately nine miles northeast of the APE. Suitable foraging habitat exists adjacent to the site and prey species were observed during the survey.
Tehachapi slender salamander (Batrachoseps stebbinsi)	CT	Found in valley-foothill hardwood-conifer & valley-foothill riparian in the Piute and Tehachapi mountains of Kern County. Prefers wet talus slopes or log-strewn hillsides with a steep, north-facing exposure.	Absent. The APE is outside the current known range of this species. The nearest recorded observation occurred in 2009 approximately 13 miles south of the APE in riparian oak woodland and non-native grassland habitat.
Tipton kangaroo rat (Dipodomys nitratoides nitratoides)	FE, CE	Burrows in soil. Often found in grassland and shrubland.	Absent. The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. The nearest recorded observation of this species occurred more than 40 years ago approximately four miles south of the APE, adjacent to the California Aqueduct.
tricolored blackbird (Agelaius tricolor)	CT, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	Unlikely. While the Project is located within the historic and current breeding range of this species, suitable foraging and breeding habitat is absent from the APE. The nearest recorded observation of this species occurred in 1992 approximately 4 miles south-southeast of the APE highly vegetated wetland habitat.
western pond turtle (Emys marmorata)	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	Unlikely. The channelized and ephemeral nature of Tecuya Creek makes it unsuitable habitat for this species. The nearest recorded observation of this species is from 1988 approximately 5 miles northwest of the APE in an undeveloped area titled "Kern Preserve-Gator Pond" in CNDDB. The preserve does not appear to be currently active. At most this species could pass over the site during dispersal movements.

Table 3-11. List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project APE
alkali mariposa-lily (Calochortus striatus)	CNPS 1B	Found in the Sierra Nevada Foothills, the Desert Mountains, and the Mojave Desert in alkaline meadows, ephemeral washes, and creosote-bush scrub in chaparral, alkali scrub communities, meadows, and seeps at elevations between 230 feet and 5300 feet. Sometimes associated with vernal pools. Blooms April–June.	Absent. Habitat required by this species is absent from the APE and surrounding area. The only regional recorded observation of this species occurred approximately 10 miles northeast of the APE within an open spring.
Bakersfield cactus (Opuntia basilaris var. treleasei)	CNPS 1B, FE, CE	Found in chenopod scrublands, valley and foothill grasslands, cismontane woodlands where the Transverse range, Coastal range, Sierra Nevada range, and Mojave Desert meet. This species grows in coarse or cobbly well-drained granitic sand at elevations between 394 feet and 492 feet. Blooms March – April.	Absent. The APE is outside the elevation range of this species. The disturbed habitats of the APE are unsuitable for this species. Th nearest recorded observations of this species occurred approximately 3 miles southwest of the APE in the vicinity of the California Aqueduct in non-native grassland habitat.
Bakersfield smallscale (Atriplex tularensis)	CE, CNPS 1A	Historically found in the southernmost portion of the San Joaquin Valley in valley sink scrub habitat and associated with saltgrass. Grows at elevations between 295 and 655 feet. Blooms June – October.	Absent. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species occurred in 1991 within the Kern lake Preserve, approximately five miles northwest of the APE. This species was listed as "Extirpated" in 1981 and "Possibly Extirpated" from the area on CNDDB as of 1991.
calico monkeyflower (Diplacus pictus / Mimulus pictus / Eunanus pictus)	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, and around granite outcrops within foothill woodland communities at elevations between 450 feet and 4100 feet. Blooms March – May.	Absent. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species occurred in 2013 approximately 10 miles southeast of the APE in the foothills of the Tehachapi mountains.
California alkali grass (Puccinellia simplex)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Blooms March–May.	Absent. The disturbed habitats of the APE are unsuitable for this species. The only regional recorded observation of this species occurred in 1987 approximately 10 miles northeast of the APE in alkali sink habitat. This species is listed as "Possibly Extirpated" from the area as of 1987.

Species	Status	Habitat	Occurrence on Project APE
California jewelflower (Caulanthus californicus)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Transverse Ranges in sandy soils. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 6100 feet. Blooms February–April.	Absent. The only regional recorded observation of this species is from a historical collection dated 1935. This species has been listed as "Extirpated" from the area as of 1986.
Comanche Point layia (Layia leucopappa)	CNPS 1B	Occurs in the southernmost portion of the San Joaquin Valley as well as the Mojave Desert in in scrubland and valley-foothill grasslands. Grows on dry hills in white-grey soils at elevations between 325 and 1,145 feet. Blooms March – April. Does not reliably appear every year.	Absent. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species is from a historical collection dated 1935 where the specimen was recorded as being approximately 6 miles northwest of the APE in valley grassland habitat. No recent recorded observations of this species have occurred on the valley floor and have primarily been in proximity to Comanche Point in Tejon Ranch.
heartscale (Atriplex cordulata var. cordulata)	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in saline or alkaline soils within shadescale scrub, valley grassland, and wetland-riparian communities at elevations below 230 feet. Blooms June–July.	Absent. Suitable habitat required by this species is absent from the Project area and surrounding lands. The APE is outside the elevation range for this species.
hispid salty bird's-beak (Chloropyron molle ssp. hispidum)	CNPS 1B	Grows in the damp, alkali soils of meadows, playas, and sinks in the San Joaquin Valley and Delta-Bay region of California. Found at elevations below 426 feet. Blooms June – July.	Absent. Suitable habitat required by this species is absent from the Project area and surrounding lands. The APE is outside the elevation range for this species.
Horn's milk-vetch (Astralagus hornii var. hornii)	CNPS 1B	This facultative species is most frequently found in the San Joaquin Valley and Sierra Nevada foothills in the alkali soils of lake margins, meadows, seeps, and playas at elevations between 196 feet and 984 feet. Blooms May – September.	Absent. Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest recorded observation of this species occurred 50 years ago approximately 9 miles northwest of the APE. The only other regional observations of this species are from historical collections.
Kern Mallow (Eremalche parryi ssp. kernensis)	CNPS 1B, FE	Occurs in the San Joaquin Valley and the Inner South Coast Ranges in eroded hillsides and alkali flats; often on dry, open, sandy to clay soils and within alkali scrub communities. Occurs at elevations between 200 feet and 4250 feet. Blooms March–May.	Absent. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species is from a historical collection dated 1958 and is mapped approximately 4 miles southwest of the APE in the Tehachapi foothills. All recent recorded observations of this species have been located in these foothills.

Species	Status	Habitat	Occurrence on Project APE
Lemmon's jewelflower (Caulanthus lemmonii)	CNPS 1B	Grows in the Coastal range and Mojave woodlands and grasslands at elevations between 260 and 3,610 feet. Often associated with pinyon pines and junipers. Blooms March – May.	Absent. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species occurred in 1991 approximately 3 miles southwest of the APE in proximity to Wheeler Ridge in the Tehachapi foothills. The only other regional occurrence of this species is from a historical collection dated 1935.
Lost Hills crownscale (Atriplex coronata var. vallicola)	CNPS 1B	Found in the San Joaquin Valley in dried ponds and alkaline soils in alkali scrub, valley and foothill grassland, and vernal pools at elevations below 2900 feet. Blooms April–September.	Absent. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species is from a 1995 collection and is mapped approximately 9 miles northwest of the APE. The only other regional recorded observation of this species occurred in 2016 and is mapped near the Laval Reservoir within Tejon Ranch.
Munz's tidy-tips (Layia munzii)	CNPS 1B	Found in the San Joaquin Valley in alkaline clay soils; often along hillsides in alkali scrub and sometimes valley and foothill grassland. Occurs at elevations between 145 feet and 2,625 feet Blooms March–April.	Absent. Suitable habitat is absent from the Project area. The only regional recorded observation of this species is from a historical collection dated 1935 and is mapped approximately 12 miles northeast of the APE.
pale-yellow layia (Layia heterotricha)	CNPS 1B	Found in the coastal ranges, transverse range, and occasionally on the San Joaquin valley floor in a variety of habitats including juniper woodlands, coastal scrublands, and foothill grasslands. Grows at elevations between 656 – 5905 feet. Blooms April – June.	Absent. Suitable habitat is absent from the Project area. The only regional recorded observation of this species occurred in 1997 approximately 11 miles southwest of the APE in oak woodland habitat within San Emigdio Ranch.
Palmer's mariposa-lily (Calochortus palmeri var. palmeri)	CNPS 1B	Found throughout southwestern California, primarily in wetland habitats, but occasionally in non-wetland habitats, including woodlands and shrublands. Grows at elevations between 3937 and 7218 feet. Blooms May – July.	Absent. The disturbed habitats of the APE are unsuitable for this species. The only regional recorded observation of this species occurred in 2014 approximately 10-mile northeast of the APE in the vicinity of Comanche Spring.

Species	Status	Habitat	Occurrence on Project APE
Piute Mountains navarretia (Navarretia setiloba)	CNPS 1B	Occurs in the Sierra Nevada foothills, San Joaquin Valley, and the Western Transverse Ranges in woodlands at grasslands at elevations between 1640 and 6890 feet. Grows in red clay soils or gravelly loam. Blooms April – July.	Absent. The APE is outside the elevation range for this species. No regional observations of this species have occurred on the valley floor.
San Joaquin adobe sunburst (Pseudobahia peirsonii)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada Foothills in bare dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 325 feet and 2950 feet. Blooms March–May.	Absent. The disturbed habitats of the APE are unsuitable for this species. The only regional recorded observation of this species occurred in 2016 approximately 13 miles west-northwest of the APE in clay soils and grassland habitat within Tejon Ranch.
San Joaquin woollythreads (Monolopia congdonii)	FE, CNPS 1B	Occurs in the San Joaquin Valley in sandy soils on alkaline or loamy plains in valley and foothill grassland and alkali scrub communities at elevations between 180 feet and 2750 feet. Blooms February–May.	Absent. Suitable habitat is absent from the Project area. The only regional recorded observation of this species is from a historical collection dated 1935 and is mapped approximately 11 miles northeast of the APE.
Tejon poppy (Eschscholzia lemmonii ssp. kernensis)	CNPS 1B	Occurs in the grasslands of the southern portion of the San Joaquin valley and the foothills of the Transverse mountain range. Found in elevations between 656 feet and 3280 feet. Blooms March – April.	Absent. The APE is outside the elevation range for this species. No regional observations of this species have occurred on the valley floor.

EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES

Present:	Species observed on the site at time of field surveys or during recent past
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis
Possible:	Species not observed on the site, but it could occur there from time to time
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient
Absent:	Species not observed on the site, and precluded from occurring there due to absence of suitable habitat

STATUS CODES

FE	Federally Endangered
FT	Federally Threatened
FPE	Federally Endangered (Proposed)
FPT	Federally Threatened (Proposed)
FC	Federal Candidate
CE	California Endangered
CT	California Threatened
CCT	California Threatened (Candidate)
CFP	California Fully Protected
CSC	California Species of Concern
CWL	California Watch List
CCE	California Endangered (Candidate)
CR	California Rare

CNPS LISTING

1A	Plants Presumed Extinct in California
1B	Plants Rare, Threatened, or Endangered in California and elsewhere
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3.4.2.1 Local

Kern County Plan[5]*:* The Kern County General Plan sets forth the following goals and policies that protect biological resources and which have potential relevance to the Project:

Threatened and Endangered Species

Policies

27. Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.
28. County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.
32. Riparian areas will be managed in accordance with United States Army Corps of Engineers, and the California Department of Fish and [Wildlife] rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measures

Q. Discretionary projects shall consider effects to biological resources as required by the California Environmental Quality Act.
R. Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to the California Environmental Quality Act.

Oak Tree Conservation

Policies

65. Oak woodlands and large oak trees shall be protected where possible and incorporated into project developments.

Implementation Measures

LL. The following applies to development of parcels having oak tree canopy cover of less than 10 percent but containing individual oak trees equal to or greater than a 12-inch diameter trunk at 4.5 feet breast height.

a. Such trees shall be identified on plot plans.
b. Discretionary development shall avoid the area beneath and within the trees unaltered drip line unless approved by a licensed or certified arborist or botanist.
c. Specified tree removal related to the discretionary action may be granted by the decision-making body upon showing that a hardship exists based on substantial evidence in the record.

[5] Kern County General Plan. http://generalplan.co.Kern.ca.us/documents/GP/001Adopted%20Kern%20County%20General%20Plan%20Materials/130Part%20III%20Community%20Plans%202%20of%207/009Mettler/GPA%2014-003%20METTLER%20COMMUNITY%20PLAN-ADOPTED.pdf Accessed August 6, 2020.

3.4.3 Impact Assessment

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

Less than Significant Impact with Mitigation Incorporated.

Project-Related Mortality and/or Disturbance of Nesting Raptors, Migratory Birds, and Special Status Birds (Including Swainson's Hawk)

Portions of the site contain marginal foraging habitat for avian species, including the Swainson's hawk. The APE is adjacent to multiple cottonwood trees, all of which are large enough to support raptor nests , and fallow agricultural field. Smaller avian species may nest within ornamental trees and shrubs in residential yards and trees within the APE. Ground-nesting birds, such as the killdeer could nest on the bare ground, and swallows could nest within buildings or structures in the vicinity.

Swainson's hawks are somewhat common in this portion of Kern County, and there are known nest trees within nine miles of the APE. In the absence of preferred habitat, especially within the Central Valley, Swainson's hawks often nest within eucalyptus trees lining highways, and several raptor species nest within ornamental Mexican fan palms. Although nesting habitat with the APE are not ideal due development, and foraging habitat is suboptimal, raptors, such as the special status Swainson's hawk could conceivably nest or forage near the APE. In the event that a Swainson's hawk or other avian species is foraging within the site during construction activities, the individual would be expected to fly away from disturbance they encounter, subsequently eliminating the risk of injury or mortality while foraging. Birds nesting within the site or on the ground could be injured or killed by Project activities. Furthermore, construction activities could disturb birds nesting within or adjacent to work areas, resulting in nest abandonment. Construction activities that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds constitute a violation of State and federal laws and are considered a significant impact under CEQA.

Due to the ruderal nature of the lands, nesting and foraging habitat for raptors, resident and migratory birds, and special status birds within the APE is marginal, at best. Habitat of higher foraging and nesting value is regionally abundant. Therefore, the development resulting from implementation of the Project would not be considered a significant loss of foraging or nesting habitat under CEQA.

Nesting bird season is generally accepted as February 1 through August 31; however, Swainson's hawk nesting season is generally accepted as March 1 through September 15. For simplicity, these timeframes have been combined.

Implementation of the following measures would reduce potential impacts to nesting raptors, migratory birds, and special status birds, including Swainson's hawk to a less than significant level under CEQA, and would ensure compliance with State and federal laws protecting these avian species.

Mitigation. The following measures would be implemented prior to the start of construction:

> **BIO-1a (Avoidance)*:*** The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.
>
> **BIO-1b (Pre-construction Surveys):** If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction surveys for active nests within ten (10) days prior to the start of construction. The survey shall include the

proposed work area and surrounding lands within 0.5 mile. If no active nests are observed, no further mitigation is required. Raptor nests are considered "active" upon the nest-building stage.

BIO1c (Establish Buffers): On discovery of any active nests or breeding colonies near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Specifically, a 300-foot disturbance-free buffer shall be implemented around breeding colonies of tricolored blackbird, and a 0.5-mile disturbance-free buffer shall be implemented around active Swainson's hawk nests, if feasible. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.

Implementation of Mitigation Measures **BIO-1a** through **BIO-1c** will reduce potential impacts to nesting raptors, migratory birds, and special status birds, including Swainson's hawk to a less than significant level under CEQA, and will ensure compliance with State and federal laws protecting these avian species.

Project-Related Impacts to Special Status Plant Species

Twenty special status plant species have been documented in the APE , including alkali mariposa-lily, Bakersfield cactus, Bakersfield smallscale, calico monkeyflower, California alkali grass, California jewelflower, Comanche Point layia, heartscale, hispid salty bird's-beak, Horn's milk-vetch, Kern Mallow, Lemmon's jewelflower, Lost Hill's crownscale, Munz's tidy-tips, pale-yellow layia, Palmer's mariposa-lily, Piute Mountains navarretia, San Joaquin adobe sunburst, San Joaquin woollythreads, and Tejon poppy. None of these species were observed during the biological survey. As explained in **Table 3-11**, all of the aforementioned special status plant species are absent from the APE due to past and ongoing disturbance and/or the absence of suitable habitat. Therefore, the implementation of the Project would have no effect on individual plants or regional populations of these special status plant species. Mitigation measures are not warranted.

Project-Related Impacts to Special Status Animal Species Absent From, or Unlikely to Occur on, the Project Site

Of the 23 regionally occurring special status species, 22 are considered absent or unlikely to occur within the APE due to past or ongoing disturbance and/or absence of suitable habitat. As explained in **Table 3-10**, the following species were deemed absent from the APE : American badger, Buena Vista Lake ornate shrew, California glossy snake, California legless lizard, coast horned lizard, Crotch bumblebee, least Bell's vireo, Nelson's antelope squirrel, purple martin, Tehachapi slender salamander, Tipton kangaroo rat, yellow-blotched salamander and the following species were deemed unlikely to occur within the APE : bald eagle, blunt-nosed leopard lizard, burrowing owl, long-eared owl, pallid bat, San Joaquin coachwhip, San Joaquin kit fox, tricolored blackbird, western pond turtle, and western spadefoot. Therefore, implementation of the Project would have no impact on these ten special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted. The remaining species was not observed during the field survey but may possibly use the site for nesting or foraging. Appropriate mitigation measures to be implemented are discussed above.

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

No Impact. Natural water features and riparian habitat is absent from the Project area and adjacent lands. According to CNDDB, there are no recorded observations of natural communities of special concern with potential to occur within the Project area or vicinity. Additionally, no natural communities of special concern

were observed during the biological survey. Therefore, implementation of the Project will have no impact on riparian habitat or any other sensitive natural communities. Mitigation measures are not warranted.

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. Wetlands are absent from the Project area and adjacent lands. Furthermore, there is no potential for indirect downstream effects because the Project does not involve lake or streambed altering activities. Therefore, implementation of the Project will have no impact on wetlands and mitigation measures are not warranted.

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?

No Impact. The APE does not contain features that would be likely to function as wildlife movement corridors. Wildlife may pass through the APE; however, this does not qualify the site as a movement corridor. Disturbance from the trucking parking lot, residential lots, and California State Route 99 would discourage regular dispersal movements through this site. Furthermore, the Project is located in a region often disturbed by intensive agricultural cultivation practices would also discourage dispersal and migration. Therefore, implementation of the Project would have no impact on wildlife movement corridors. Mitigation is not warranted.

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

No Impact. The Proposed Project design is consistent with the goals and policies of the Kern County General Plan. There are no known habitat conservation plans in the APE. Mitigation is not warranted.

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. Proposed Project design is consistent with the goals and policies of the Kern County General Plan. There are no known habitat conservation plans in the APE. Mitigation is not warranted.

3.5 Cultural Resources

Table 3-12. Cultural Resources Impacts

Cultural Resources					
	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?	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

3.5.1 Environmental Setting

The study area encompasses approximately 0.49- ac of previously developed land on the open flats of the southern San Joaquin Valley, Kern County, California. The study area consists of a well facility located north of the Interstate 5 and Highway 99 interchange, and Highway 166. Specifically, the study area is located in Section 1, Township 11 North, Range 20 West, Mount Diablo Base and Meridian (MDBM).

The District proposes improvements to existing water infrastructure within the community of Mettler. The study area currently accommodates contemporary water treatment infrastructure, including bolted tanks, generators, electric paneling, concrete pads, and pumps.

According to a southern San Joaquin Valley-wide geoarchaeological model developed by Meyer et al. (2010), the study area has a moderate to high potential for buried archaeological deposits. A site sensitivity model, designed for this portion of the San Joaquin Valley specifically, however, determined that most of the study area west of I-5 has a low probability for archaeological sites, while those portions of the study area to the east of this highway have a moderate probability (See **Appendix C**).

3.5.2 Methodology

An intensive Phase I survey of the Mettler CWD Well study area was conducted on August 25th, 2020 by ASM. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources and the BLM 8100 Manual, using DPR 523 forms. Parallel survey transects spaced at 15-m apart were employed for the inventory (See **Appendix C**).

The study area is located on the north side of Lupine Street which is paved. Within the study area are modern facilities related to water treatment, including tanks, generators, electrical paneling, concrete pads, and pumps.

Imported gravels cover some of the study area. Visibility within the study area ranged from 75 percent to 100 percent throughout (See **Appendix C**).

In order to determine whether the study area had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (SSJVIC) on August 24th, 2020. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study areas; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest. The records search included the study area and a half-mile buffer.

According to the SSJVIC records search (**Appendix C**), one previous archaeological survey had been completed within the study area: KE-02172 (Caltrans, 1998, Negative Archaeological Survey Report: 06- KER-99, PM 0.0/9.0 Negative Archaeological Survey Report: 06- KER-99, PM 0.0/9.0). No archaeological resources were identified as a result of that study. Additionally, four previous archaeological surveys had been completed within 0.5-mi of the study area and no archaeological resources were known to exist within that same radius.

A search of the Native American Heritage Commission (NAHC) Sacred Lands Files was also requested. According to the NAHC records, no sacred sites or tribal cultural resources are known in or near the study area (Confidential Appendix A). Letters were sent September 16th, 2020, and follow-up emails were sent October 16th, 2020 to tribes on the contact list. The San Fernando Band of Mission Indians responded on October 13th, 2020 stating the project area is outside their traditional territory and they would defer to the Tejon Tribe; the Fernandeño Tataviam Band of Mission Indians responded on October 13th, 2020 stating the project area is situated outside their ancestral tribal boundaries and they would defer to local tribes; and the San Manuel Band of Mission Indians responded on September 29th, 2020 stating the project area was outside ancestral Serrano Territory and they would not be requesting consulting party status. No additional responses were received. (**Appendix C**)

3.5.2.1 Local

Kern County General Plan[6]: The Kern County General Plan sets forth the following goals and policies pertaining to cultural resources that have potential relevance to the Project or Project's CEQA review pertaining to cultural resource preservation:

Policy

25. The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

- Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.
- The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).
- In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

[6] Kern County General Plan. http://generalplan.co.Kern.ca.us/documents/GP/001Adopted%20Kern%20County%20General%20Plan%20Materials/000General%20Plan%202030%20Part%20I%20and%20Part%20II/GENERAL%20PLAN%202012.pdf Accessed October 15, 2020.

3.5.3 Impact Assessment

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less than Significant Impact with Mitigation Incorporated.
An intensive Phase I survey of the Mettler CWD Well study area was conducted on August 25th, 2020 by ASM.

The study area is located on the north side of Lupine Street. Within the study area are modern facilities related to water treatment, including tanks, generators, electrical paneling, concrete pads, and pumps. Imported gravels cover some of the study area. Visibility within the study area ranged from 75 percent to 100 percent throughout. (**Appendix C**)

No cultural resources of any kind were identified during the survey, reflecting the previous site sensitivity model for this portion of the southern San Joaquin Valley which forecast low to medium likelihood for sites (**Appendix C**).

In the unlikely event that previously unknown cultural resources are identified during the development or use of the study area, all project activities must cease in the area of the find and a qualified archaeologist must be notified to evaluate the discovery and implement appropriate
evaluation and/or protection measures.

> **CUL-1 (Archaeological Resources):** In the event that archaeological resources are encountered at any time during development or ground-moving activities within the entire project area, all work in the vicinity of the find shall halt until a qualified archaeologist can assess the discovery. The District shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant Impact with Mitigation Incorporated. No formal cemeteries or other places of human internment are known to exist on the Project site; however, in accordance with Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98, if human remains are uncovered, Mitigation Measure CUL-2 would be implemented.

> **CUL-2 (Human Remains):** If human remains are uncovered, or in any other case when human remains are discovered during construction, the Kern County Coroner is to be notified to arrange proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.

3.6 Energy

Table 3-13. Energy Impacts

Energy					
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?	☐	☐	☒	☐
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

3.6.1 Environmental Setting

Pacific Gas & Electric (PG&E) has sufficient energy supplies to serve the growth that has occurred in Kern County. Much of the energy consumed in the region is for residential, commercial, and transportation purposes.

The electrical transformer supplying the wells is currently limited to supplying only one well at a time. However; the District intends to work with PG&E to upgrade the transformer to permit both wells to operate simultaneously.

Construction equipment and construction worker vehicles operated during Project construction would use fossil fuels. This increased fuel consumption would be temporary and would cease at the end of the construction activity, and it would not have a residual requirement for additional energy input. The marginal increases in fossil fuel use resulting from Project construction are not expected to have appreciable impacts on energy resources.

a) Would the project 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. As discussed in **Section 3.3**, the proposed Project will not exceed any air emission thresholds during construction or operation. The Project will comply with construction best management practices and may be required to complete a SWPPP as part of construction and operational permits. Once completed, the Project will be mostly passive in nature and will not use an excessive amount of energy. As stated above, the electrical transformer currently supplying the wells is limited to supplying only one well at a time. However; the District intends to work with Pacific Gas & Electric to upgrade the transformer to permit both wells to operate simultaneously. The Project will not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. The proposed Project will be passive in nature once it is completed, and the construction phase will be temporary in nature and will not exceed any thresholds set by the SJVAPCD.

3.7 Geology and Soils

Table 3-14. Geology and Soils Impacts

Geology and Soils				
Would the project:	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporated**	**Less than Significant Impact**	**No Impact**
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

3.7.1 Environmental Setting

3.7.1.1 Geology and Soils

The Project is located in southern Kern County, in the central section of California's Great Valley Geomorphic Province, or Central Valley. The Sacramento Valley makes up the northern third and the San Joaquin Valley makes up the southern two-thirds of the geomorphic province. Both valleys are watered by large rivers flowing west from the Sierra Nevada Range, with smaller tributaries flowing east from the Coast Ranges. Most of the

surface of the Great Valley is covered by Quaternary (present day to 1.6 million years ago) alluvium. From the time the Valley first began to form, sediments derived from erosion of igneous and metamorphic rocks and consolidated marine sediments in the surrounding mountains have been transported into the Valley by streams.

The Project site is comprised of Cerini loam (0 to 2 percent slopes). It is considered well drained, has no or very rare potential for flooding or ponding, with a low to moderate risk of subsidence (see Appendix C of **Appendix B**).

3.7.1.2 Faults and Seismicity

The Project site is not located within an Alquist-Priolo Earthquake Fault Zone and no known faults cut through the local soil at the site. The nearest major fault is the San Andreas Fault, Cholame-Carrizo section, located 16.2-miles southwest of the Project site. The San Andreas Fault is the dominant active tectonic feature of the Coast Ranges and represents the boundary of the North American and Pacific plates. A smaller fault zone, the Wheeler-Ridge Fault is 3.13-miles west of the site and an unnamed fault runs through the APE.

3.7.1.3 Liquefaction

The potential for liquefaction, which is the loss of soil strength due to seismic forces, is dependent on soil types and density, depth to groundwater, and the duration and intensity of ground shaking. Although no specific liquefaction hazard areas have been identified in the county, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high-water table coincide. It is reasonable to assume that due to the depth to groundwater within the northwestern portion of Kern County, liquefaction hazards would be negligible. There is moderate risk of soil slumping and liquefaction when near the Tule River. Using the USDA NRCS soil survey of Kern County, an analysis of the soils onsite was performed (see Appendix C of **Appendix B**). Soils in the area consist of Calgro-Calgro, saline-Sodic.

3.7.1.4 Soil Subsidence

Subsidence occurs when a large land area settles due to over-saturation or extensive withdrawal of ground water, oil, or natural gas. These areas are typically composed of open-textured soils that become saturated. These areas are high in silt or clay content.

There are four types of subsidence occurring in Kern County. Tectonic subsidence, a long-term, very slow sinking of the valley, which is significant only over a geologic time period. Subsidence caused by the extraction of oil and gas. This type of subsidence is still too small to be of serious concern. The State Division of Oil, Gas, and Geothermal Resources monitors subsidence in oil and gas fields and regulates oil and gas withdrawal and repressurizing of the fields. Subsidence caused by withdrawal of groundwater in quantities much larger than replacement can occur, causing a decline of the water level. This type of subsidence is of major concern and should be regulated and reduced, especially in urbanizing areas. This practice has lowered the ground level over a large area south of Bakersfield and in other areas of the County. Subsidence caused by hydro compaction of moisture – deficient alluvial deposits. This is a one-time densification from collapse of the soil structure in near-surface strata where the rainfall or other moisture has not penetrated during a long period of time. Parts of the California Aqueduct were constructed through and over hydro compatible deposit after compaction has occurred through ponding. The areas where hydro compaction exists and suspect areas should be mapped, studied, and evaluated. Any development on these areas of damaging subsidence requires corrective measures.[7]

[7] Kern County Safety Element https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp4Safety.pdf. Accessed October 16, 2020.

3.7.1.5 Dam and Levee Failure

The following dams and dikes are included in the Kern County inundation mapping program. Isabella Lake Dam, Brite Valley Dam, and Haiwee Reservoir. Isabella Dam is located 12.84 miles north of the APE.

3.7.1.6 Local

Kern County General Plan. The Kern County General Plan sets forth the following goals and policies:

Policies - Seismic

1) The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

Policies - Liquefication

1) Determine the liquefaction potential at sites in areas of shallow groundwater (Map Code 2.3) prior to discretionary development and determine specific mitigation to be incorporated into the foundation design, as necessary, to prevent or reduce damage from liquefaction in an earthquake.

2) Route major lifeline installations around potential areas of liquefaction or otherwise protect them against significant damage from liquefaction in an earthquake.

3) Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

3.7.2 Impact Assessment

a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a-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.

a-ii) Strong seismic ground shaking?

Less than Significant Impact. The Project site and its vicinity are located in an area traditionally characterized by relatively low seismic activity. The site is not located in an Alquist-Priolo Earthquake Fault Zone as established by the Alquist-Priolo Fault Zoning Act (Section 2622 of Chapter 7.5, Division 2 of the California Public Resources Code). The nearest major fault is the San Andreas Fault, Cholame-Carrizo section, located approximately 16.2-miles southwest of the Project site. A smaller fault zone, the Wheeler-Ridge Fault is 3.13-miles southwest of the APE and an unnamed fault runs through the APE. The Project involves construction of a water treatment system, trenching of a 6-inch pipeline, booster pump upgrade and site improvements, and does not include development of habitable structures. Operation of the Project would not require permanent staff onsite or an increase in the number of employees required for routine maintenance. Instead, routine maintenance and repairs would be performed infrequently, on an as-needed basis by current District employees. Therefore, implementation of the Project would not result in an increase of people or habitable structures onsite. Any impact would be less than significant.

a-iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Liquefaction is a process which involves the temporary transformation of soil from a solid state to a fluid form during intense and prolonged ground shaking. Water-saturated areas with shallow depth to groundwater and uniform sands, loose-to-medium in density, are prone to liquefaction. Specific liquefaction hazard areas have not been identified in Kern County. The Project site is not in a wetland area and is located in the northwestern portion of the County where liquefaction is considered a low to moderate risk. Impacts would be less than significant.

a-iv) Landslides?

No Impact. As the Project is located on the Valley floor, no major geologic landforms exist on or near the site that could result in a landslide event. The potential landslide impact at this location is minimal as the site is approximately 20 miles from the foothills and the local topography is essentially flat and level. There will be no impact.

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

Less than Significant Impact. The Project area is approximately 18,000 square feet. If ground disturbance is less than one acre the project would not require a general permit under the Dischargers of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. The amount of ground disturbance is expected to be considerably less than one acre. Furthermore, construction will utilize Best Management Practice's detailed in the California Storm Water Best Management Practice Handbook for Construction Activity.[8] Since the Project site has relatively flat terrain with a low potential for soil erosion and would comply with the SWRCB requirements, the impact would be less than significant.

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

d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial direct or indirect risks to life or property?

Less than Significant Impact. Soils onsite consist of Cerini loam, which is classified as moderately well drained with a low runoff class (See see Appendix C of **Appendix B**). The Project site and surrounding areas do not contain substantial grade changes. Risk of landslides, lateral spreading, subsidence, liquefaction, and collapse are minimal. The Project does not propose significant alteration of the topography of the site and it does not involve development of structures or facilities that could be affected by expansive soils or expose people to substantial risks to life or property. Furthermore, the Project will be consistent with the California Building Standards Code. Any impacts would be less than significant.

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

No Impact. Septic installation or alternative waste water disposal systems are not necessary for the project. There would be no impact.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant. Barring evidence to the contrary, no known paleontological resources have been identified at the Project site. The Project site is already developed and highly disturbed. Installation of water treatment facilities at the site would not have a significant impact to sensitive resources.

[8] California Storm Water Best Management Practice Handbook for Construction Activity, https://www.casqa.org/sites/default/files/BMPHandbooks/BMP_NewDevRedev_Complete.pdf , Accessed February 19, 2019

3.8 Greenhouse Gas Emissions

Table 3-15. Greenhouse Gas Emissions Impacts

Greenhouse Gas Emissions					
Would the project:		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

3.8.1 Environmental Setting

The Earth's climate has been warming for the past century. Experts believe this warming trend is related to the release of certain gases into the atmosphere. Greenhouse gases (GHG) absorb infrared energy that would otherwise escape from the Earth. As the infrared energy is absorbed, the air surrounding the Earth is heated. An overall warming trend has been recorded since the late 19th century, with the most rapid warming occurring over the past 35 years, with 16 of the 17 warmest years on record occurring since 2001. Not only was 2016 the warmest year on record, but eight of the 12 months that make up the year—from January through September, with the exception of June—were the warmest on record for those respective months. October, November, and December of 2016 were the second warmest of those months on record—in all three cases, behind records set in 2015.[9] Human activities have been attributed to an increase in the atmospheric abundance of greenhouse gases. The following is a brief description of the most commonly recognized GHGs.

3.8.1.1 Greenhouse Gases

Carbon dioxide (CO_2) is an odorless, colorless natural greenhouse gas. CO_2 is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out gassing. Anthropogenic sources include the burning of coal, oil, natural gas, and wood.

Methane (CH_4) is a flammable greenhouse gas. A natural source of methane is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and ruminants such as cattle.

Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.

[9] NASA, NOAA Data Show 2016 Warmest Year on Record Globally. https://www.nasa.gov/press-release/nasa-noaa-data-show-2016-warmest-year-on-record-globally. January 18, 2017. Accessed 14 February 2020.

Water vapor is the most abundant, and variable greenhouse gas. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life.

Ozone (O_3) is known as a photochemical pollutant and is a greenhouse gas; however, unlike other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. Ozone is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds, nitrogen oxides, and sunlight.

Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. CFCs destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987.

Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for CFCs. Of all the greenhouse gases, HFCs are one of three groups (the other two are perfluorocarbons and sulfur hexafluoride) with the highest global warming potential. HFCs are human-made for applications such as air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest global warming potential of any gas evaluated. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

3.8.1.2 Effects of Climate Change

The impacts of climate change have yet to fully manifest. A hotter planet is causing the sea level to rise, disease to spread to non-endemic areas, as well as more frequent and severe storms, heat events, and air pollution episodes. Also affected are agricultural production, the water supply, the sustainability of ecosystems, and therefore the economy. The magnitude of these impacts is unknown.

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. GHG emissions are typically expressed in carbon dioxide-equivalents (CO_2e), based on the GHG's Global Warming Potential (GWP). The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2.

3.8.2 Methodology

An Air Quality and Greenhouse Gas Emissions Report - CalEEMod Output Files (**Appendix A**) was prepared in October 2020. The sections below detail the methodology of the report and its conclusions.

3.8.2.1 Short-Term Construction-Generated Emissions

Short-term construction emissions associated with the Project were calculated using CalEEmod, Version 2016.3.2. Emissions' modeling was assumed to occur over an approximate 12 month period and covering a site area of approximately 18,000 square feet. Remaining assumptions were based on the default parameters contained in the model. Modeling assumptions and output files are included in **Appendix A**.

3.8.2.2 Long-Term Operational Emissions

Long-term operational emissions associated with the Project are estimated to be minimal in nature. Modeling assumptions and output files are included in **Appendix A**.

3.8.3 Impact Assessment

3.8.3.1 Thresholds of Significance

In accordance with SJVAPCD's *CEQA Greenhouse Gas Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects*[10], proposed projects complying with Best Performance Standards (BPS) would be determined to have a less-than-significant impact. Projects not complying with BPS would be considered less than significant if operational GHG emissions would be reduced or mitigated by a minimum of 29 percent, in comparison to business-as-usual (year 2004) conditions. In addition, project-generated emissions complying with an approved plan or mitigation program would also be determined to have a less-than-significant impact.

Bay Area Air Quality Management District's Thresholds for Significance: Bay Area Air Quality Management District's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce Statewide GHG emissions. If a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact, and would be considered significant. If mitigation can be applied to lessen the emissions such that the project meets its share of emission reductions needed to address the cumulative impact, the project would normally be considered less than significant. Although the proposed Project is not located in the Bay Area, the Bay Area Air Quality Management District's thresholds for significance are based on the Statewide AB 32 objectives, are scientifically supported and are more appropriate to assess potential impacts related to GHG emissions. For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy or annual emissions less than 1,100 metric tons per year (MT/yr) of CO_2e. For stationary source projects, such as those requiring a permit from a local air district to operate, the threshold is 10,000 MT/yr of CO2e. Although the BAAQMD thresholds are generally intended for ongoing sources of emissions (e.g., manufacturing facilities, refineries), their use in CEQA is appropriate for construction projects that occur over a relatively short period and contribute a relatively low total amount of GHGs, as compared to a land use development project that would generate substantial annual emissions indefinitely.

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? And;

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact.

[10] Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. http://www.valleyair.org/Programs/CCAP/12-17-09/3%20CCAP%20-%20FINAL%20LU%20Guidance%20-%20Dec%2017%202009.pdf Accessed September 2020

Short-Term Construction-Generated Emissions

Estimated construction-generated emissions are summarized in **Table 3-16**. As indicated, construction of the Project would generate maximum annual emissions of approximately 2,216.34 $MTCO_2e$. Construction-related production of GHGs would be temporary and last approximately one year. These emissions are totaled and amortized over 30 years and added to the operational emissions in **Table 3-17** below.

Table 3-16. Short-Term Construction-Generated GHG Emissions

Short-Term Construction-Generated GHG Emissions	
Year	**Emissions (MT CO_2e)[1]**
2021	2,216.34
Amortized over 30 years	*73.878*

1. *Emissions were quantified using the CalEEmod, Version 2016.3.2. Refer to* ***Appendix A*** *for modeling results and assumptions. Totals may not sum due to rounding.*

Long-Term Operational Emissions

Estimated long-term operational emissions are summarized in **Table 3-17**.

Table 3-17. Long-Term Operational GHG Emissions

Long-Term Operational GHG Emissions	
	Emissions (MT CO_2e)[1]
Estimated Annual Operation CO2e Emissions	<0.01
Amortized Construction Emissions	73.878
Total Estimated Annual Operational CO2e Emissions	73.88
*AB 32 Consistency Threshold for Land-Use Development Projects**	*1,100*
Exceed Threshold?	*No*

1. *Emissions were quantified using the CalEEmod, Version 2016.3.2. Refer to* ***Appendix A.*** *for modeling results and assumptions. Totals may not sum due to rounding.*

* As published in the Bay Area Air Quality Management District's CEQA Air Quality Guidelines. Available online at http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en Accessed September 2020.

The County does not have an adopted GHG plan or MT/yr thresholds for CO_2e. The San Joaquin Valley Air Pollution Control District (SJVAPCD) CEQA guidance for GHG emissions recommends that a project not be considered to have a significant impact if it complies with an applicable air quality plan, results in a 29% reduction from business as usual (BAU) GHG emissions (2004 levels), or implements applicable Best Performance Standards (BPS). The SJVAPCD metrics (reduction from BAU, implementation of BPS) are not appropriate for this Project. The thresholds provided by the Bay Area Air Quality Management District, while not in our area, are very stringent and based on Statewide AB 32 objectives. Because they are designed to avoid significant impacts from global climate change, which occurs at a global scale, they do not depend on site-specific characteristics. The District has determined that the Bay Area Air Quality Management District's thresholds are the most appropriate threshold for this Project, which has predominantly short-term construction emissions, and extremely low operational emissions (73.88 CO_2e). Any impacts would be less than significant.

3.9 Hazards and Hazardous Materials

Table 3-18. Hazards and Hazardous Materials Impacts

Hazards and Hazardous Materials					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g)	Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

3.9.1 Environmental Setting

3.9.1.1 Hazardous Materials

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code (GC) Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop at least annually an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. DTSC's EnviroStor database provides DTSC's component of Cortese List data (DTSC, 2010). In addition to the EnviroStor database, the State Water Resources Control Board (SWRCB) Geotracker database provides information on regulated hazardous waste facilities in California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups (SLIC) sites, Department of Defense (DOD) sites, and Land Disposal program.

A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on October 23, 2020 determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity.

3.9.1.2 Airports

The Bakersfield Municipal Airport is located 17.5-miles north and Creekside Airport (Water Ski Community) is located 7.9- miles north by northeast of the APE.

3.9.1.3 Emergency Response Plan

The Office of Emergency Services in conjunction with Kern County Fire Department is the County's emergency management agency, responsible for coordinating multi-agency responses to complex, large-scale emergencies and disasters occurring within the unincorporated area of the County.

Prior to the periodic review of its general plan and prior to preparing or revising its safety element, each city and County shall consult the California Geological Survey and the Office of Emergency Services for the purpose of including information known by and available to the department and the office required by this subdivision.[11]

3.9.1.4 Sensitive Receptors

A portion of the Project will be located within the right-of-way of Lupine Street, which will span across the frontage of two single-family residences. Also, the nearest school (General Shafter Elementary School) is located approximately 11.2- miles north of the Project.

3.9.2 Impact Assessment

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? and;

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

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

Less than Significant Impact.
General Shafter Elementary School is located 11.2-miles north of the Project. Implementation of the Project would correct existing water quality issues specifically with TCP in Well No. 4, currently affecting the community of Mettler.

Backwashing the GAC filters occurs when new activated carbon is loaded approximately once a year. The water used in this process flows into the onsite backwash reclaim tank where carbon fines are allowed to settle before it is reclaimed by the backwash reclaim pump. The nuisance water pond allows any water remaining in the carob delivery truck to be emptied before the truck leaves the site. The treatment site will also include a chlorination system for disinfection of the treated water and a nitrate analyzer to detect potential nitrate sloughing.

Construction of the Project may involve the use of hazardous materials associated with construction equipment, such as diesel fuel, lubricants, and solvents. Any potential accidental hazardous materials spills during construction are the responsibility of the contractor to remediate in accordance with industry best management practices and State and county regulations. The total APE approximately 18,000 sq ft including a 20 ft corridor for the connecting water transmission pipeline. However, the area in which construction (clearing, grading and

[11] Kern County General Plan – Safety Element, Accessed October 15, 2020.

excavation) that will be taking place will be less than one acre, so a SWPPP would not be required. The operational phase of the Project will involve the use of chlorine, which is required for sanitation of drinking water. Storage, handling, and distribution of chlorine will be monitored and comply will all regulations set forth by DDW and County of Kern. Impacts would be less than significant.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The Project does not involve land that is listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control. A search of the DTSC EnviroStor database and the SWRCB Geotracker performed on October 23, 2020 determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity. There would be 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 or excessive noise for people residing or working in the project area?; and,

No Impact. The Project is not located within an airport land use plan or within two miles of an airport. The Bakersfield Municipal Airport is located 17.5- miles north and a private airstrip is located 7.9-miles north by northeast of the Project. Construction of a water treatment system and transmission pipeline, would not be a safety hazard for people working in the area. Operation of the well site would not generate excessive noise, and any construction noise would be temporary. There would be no impact.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. The Project includes the construction and operation of a water treatment system and open trenching for a 6-inch water transmission pipeline that will be buried within Lupine Street road right-of-way. Construction traffic associated with the Project would be minimal and temporary, lasting approximately twelve months. Operational traffic will consist of as-needed maintenance trips and will have no effect on roadways or emergency access. A portion of the Project will involve the open trenching in the right-of-way of Lupine Street for approximately 20 feet. Partial road closures and detours may be expected due to the open trenching within the road right-of-way. Temporary lane diversions may be necessary for the neighboring residences adjacent to Lupine Street, between Camelia Drive and Mettler Frontage Road. Disturbances to traffic patterns, such as a partial road closures and detours will be temporary and minimal in nature, as there are alternate routes available. Therefore, Project-related impacts to emergency evacuation routes or emergency response routes on local roadways would be considered less than significant.

g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?

No Impact. The entire APE of the Project is within a Local Responsibility Area (LRA). The nearest High Fire Severity zone is located 9.13-miles east of the APE. The Project does not include any residential components, nor would it require any employees to be stationed permanently at the site on a daily basis. Given the nature of the Project is to correct water quality issues within existing wells on developed areas, there is no risk of wildland fires. There would be no impacts.

3.10 Hydrology and Water Quality

Table 3-19. Hydrology and Water Quality Impacts

Hydrology and Water Quality					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☐	☒
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
	ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;	☐	☐	☒	☐
	iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv)	impede or redirect flood flows?	☐	☐	☒	☐
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

3.10.1 Environmental Setting

The Project is located within the lower San Joaquin Valley, part of the Great Valley of California. The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south.

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives an average of seven inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

Water resources in Kern County include many natural rivers and streams, man-made surface water conveyance structures, and groundwater. Kern County's groundwater and surface water management is accomplished

through various combinations of public and private water entities, including the Bureau of Reclamation, water utility companies, and local irrigation districts, all of which are governed by State and federal regulations

The Project is located approximately 3 miles north of the California Aqueduct, within the Tecuya Creek watershed; Hydrologic Unit Code (HUC): 180300031103 (EPA, 2020). The nearest surface water feature is the channelized and ephemeral Tecuya Creek, located approximately 0.65 miles west of the APE..[12]

The Project lies entirely within the Kern County Groundwater Subbasin of the San Joaquin Valley Groundwater Basin. (DWR, 2020).[13]

Policies – Inundation Areas (Flooding due to dam failure

1) Design discretionary critical facilities located within the potential inundation area for dam failure in order to mitigate the effects of inundation on the facility; promote orderly shutdown and evacuation (as appropriate); and prevent on-site hazards from affecting building occupants and the surrounding communities in the event of dam failure.

2) Design discretionary critical facilities in the potential dam inundation area used for the storage, or use of hazardous materials to prevent on-site hazards from affecting surrounding communities in the event of inundation.

3) Require emergency response plans for the planning area to include specific procedures for the sequential and orderly evacuation of the potential dam inundation area.

4) Encourage critical and high occupancy facilities as well as facilities for the elderly, handicapped, and other special care occupants, located in the potential inundation area below the dam to develop and maintain plans for the orderly evacuation of their occupants.

Implementation Measures

A) Facilities used for the manufacture, storage, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent on-site hazards from affecting surrounding communities in the event of inundation.

B) Discretionary critical facilities within potential inundation areas shall be designed to mitigate or prevent effects of inundation.

3.10.2 Impact Assessment

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

No Impact. The water system in Mettler is supplied by two active groundwater wells (Wells 3 and 4). Nitrate and TCP have been detected at levels higher than their respective MCLs at Well 4. The purpose of this project is to mitigate the TCP and nitrate contamination and bring the water system into compliance with both standards. Wells 3 and 4 are currently the only active sources of supply for the water system and therefore, both wells are needed to provide the necessary redundancy when one well has to be taken off-line for maintenance. Furthermore, both wells would be needed to supply fire hydrants in the event of a fire. The proposed project will bring Well No 4 into reliable compliance with the new TCP standard using GAC.

GAC removes TCP from water through a physical adsorption process. The parameter used to indicate the time the water is in contact with the carbon is the empty bed contact time (EBCT). An EBCT of approximately 15

[12]. EPA Waters GeoViewer. https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=ada349b90c26496ea52aab66a092593b Accessed August 2020.
[13] DWR Bulletin 118. BBAT. https://gis.water.ca.gov/app/bbat/ Accessed October 11, 2020

minutes is recommended for TCP removal treatment. In order to utilize the carbon more fully, it is recommended that the GAC treatment system be configured using a pair of vessels in series. Water will flow through one vessel filled with GAC and then through a second vessel filled with GAC before being blended with water from Well 3 and entering the water storage tank. . Operating with vessels in series is particularly important with TCP, which has a maximum contaminant level (MCL) equal to the Detection Limiting for the Purposes of Reporting. With series operation, the District will be able to allow the GAC in the lead vessel to approach full saturation/usage before the carbon is changed out. It will also provide improved treatment reliability and reduce the likelihood of an inadvertent treatment failure and resulting MCL violation.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable groundwater management of the basin?

Less than Significant Impact. The proposed project will bring Well No 4 into reliable compliance with the new TCP standard while at the same time maintaining supply capacities of at least 400 gpm for wells 3 and 4, respectively. There is no anticipated increase in water demand resulting from implementation of the Project. It will not interfere substantially with groundwater recharge, nor would the Project interfere substantially with the production rate of pre-existing nearby wells. The existing well site and pumping rate were designed to not interfere with the drawdown of nearby wells. Therefore, implementation of the Project will not impede sustainable groundwater management of the San Joaquin Valley Kern subbasin, nor will it substantially decrease ground water supplies. Any impacts would be less than significant.

c) Would the project 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 which would:

c-i) result in substantial erosion or siltation on- or off-site;

c-ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;

c-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

c-iv) impede or redirect flood flows?

Less than Significant Impact. There are no streams or rivers onsite or in the immediate vicinity of the Project. The nearest waterway is Tecuya Creek, which is located 0.8-miles west of the APE therefore the Project cannot impact the drainage pattern of a stream or river. Additionally, the foot print of the Project is small, impacts to the existing drainage pattern of the area would be less than significant. The contractor would comply with all Cal/OSHA regulations regarding regular maintenance and inspection of equipment, spill prevention, and spill remediation in order to reduce the potential for incidental release of pollutants or hazardous substances onsite. Impacts would be less than significant.

d) Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less than Significant Impact. The Project is located in a 100 year flood zone area (See **Figure 3-2**). While the flood hazard is relatively low, all utilities will be constructed to the Base Flood Elevation (BFE) +1ft as required by American Society of Civil Engineers (ASCE) 24-14. . All of the electrical equipment is located a minimum of 3'-6" above grade. The GAC Vessels foundation is elevated a minimum of 6" above the surrounding grade and the vessels themselves are elevated 2 feet above the foundation. The GAC vessels are ASME (American Society of Mechanical Engineers) stamped pressure vessels rated for 125 psi (pound-force per square inch) and as such are water tight. The piping is Class 350 Ductile Iron Pipe rated for a design pressure of 350 psi and as such are water tight. Any impacts would be less than significant. [14]

[14] American Society of Civil Engineers, Highlights of ASCE 24-14 Flood Resistant Design and Construction (rev July 2015) https://www.fema.gov/media-library-data/1436288616344-93e90f72a5e4ba75bac2c5bb0c92d251/ASCE24-14_Highlights_Jan2015_revise2.pdf Accessed October 22, 2020

e) Otherwise substantially degrade water quality?

No Impact. Implementation of the Project would correct water quality issues, specifically TCP and nitrate contamination, in Well No. 4 affecting the community of Mettler. Furthermore, construction activities will be in compliance with all Cal/OSHA regulations in order to reduce the potential for incidental release of pollutants or hazardous substances into surface water or groundwater. There would be no impact.

f) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact. The proposed Project is intended to provide clean drinking water to the residents of Mettler. The Project will not conflict with or obstruct implementation of any water quality control plan or sustainable groundwater management plan. There would be no impact.



Figure 3-2. FEMA Flood Map

3.11 Land Use and Planning

Table 3-20. Land Use and Planning Impacts

Land Use and Planning					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Physically divide an established community?	☐	☐	☐	☒
b)	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?	☐	☐	☒	☐

3.11.1 Environmental Setting

The Project is located within the Census Designated Place of Mettler in southern Kern County. The APE is bordered by Camellia Drive to the west, Metter Frontage Road to the east. SR 99 is located to the immediate east. Interstate 5 is located 1.5 miles to the west and is accessed via SR 166.

The site where both wells are located is zoned as Medium Industrial and designated by the Kern County General Plan as General Commercial, Residential (maximum 10 Units/New Acre and Service Industrial. The pipeline will be located within the road right-of-way of Lupine Street. The adjacent lands are zoned as Low Density Residential, Mobile home Combining and Medium Industrial, Precise Development Combining. See **Figure 3-3** and **Figure 3-4**.

3.11.2 Impact Assessment

a) Would the project physically divide an established community?

No Impact. The project is in a developed area (truck stop and rest area) that is zoned Medium Industrial, Precise Development Combining. The pipeline portion of the Project will be located in the road right-of-way of Lupine Street. The Project does not include the permanent alteration of roads, trails, or paths that could be considered a connectivity network. Implementation of the Project will not divide an established community. There would be no impact.

b) Would the project cause a significant environmental conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. Well No. 3 and 4 are existing and would be considered a public facility and therefore would be consistent with all applicable plans, policies, ordinances, and regulations. There would be no impact.

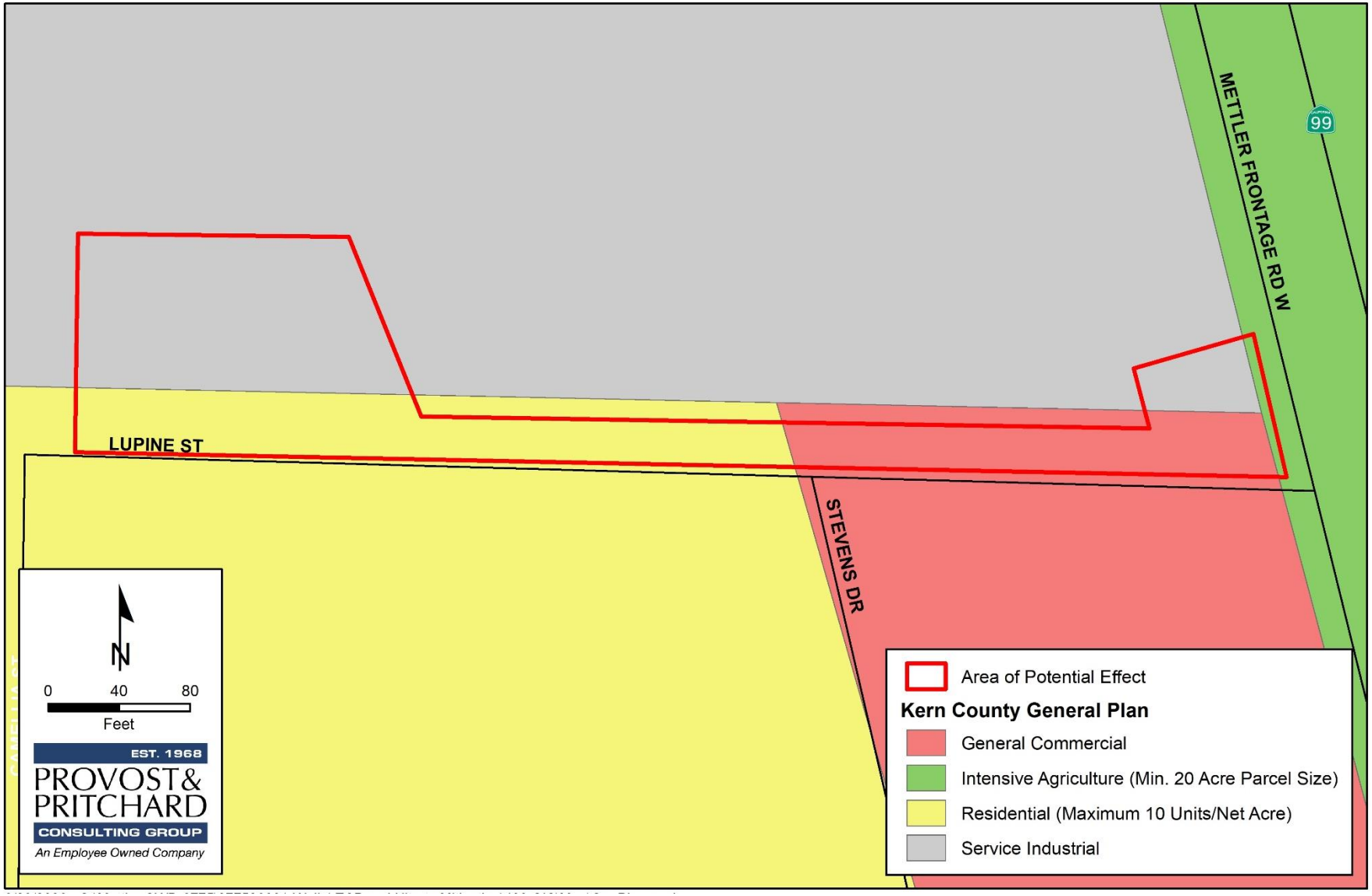


Figure 3-3. Kern County General Plan Map

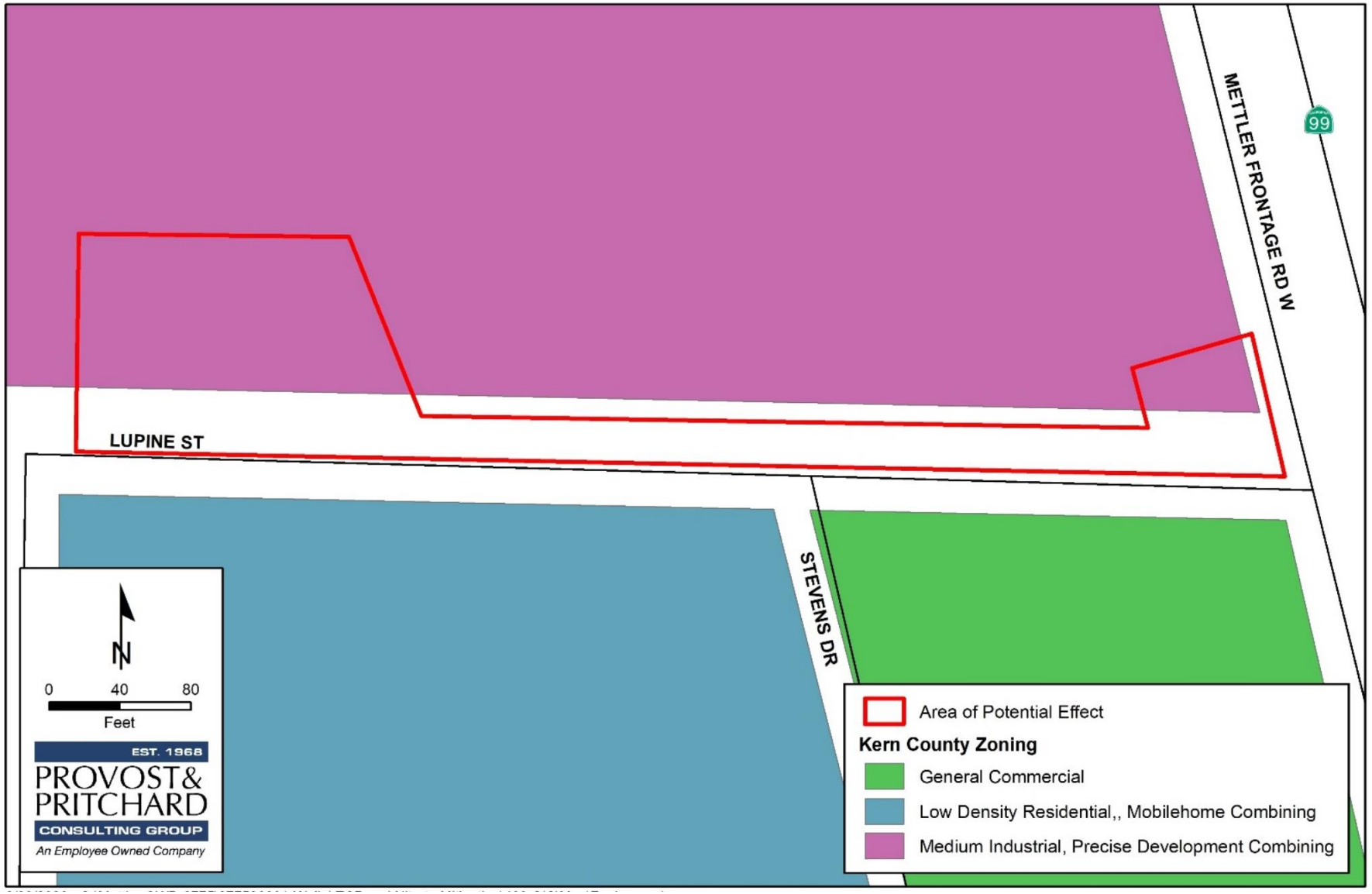


Figure 3-4. Kern County Zoning Map

3.12 Mineral Resources

Table 3-21. Mineral Resources Impacts

Mineral Resources					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

3.12.1 Environmental Setting

The most economically significant resources in Kern County aside from agriculture, are mineral and petroleum resources. Kern County has the distinction of producing more oil than any other County in California. In addition, borax, cement production, and construction aggregates constitute major economic mineral resources.[15]

California Department of Conservation's Division of Oil, Gas and Geothermal maintains a database of oil wells in the Project area (DOGGR). According to the DOGGR Well Finder there is one plugged and abandoned well approximately 1.12 miles southeast of the Project.[16]

The Project site is not delineated on a local land use plan as a locally-important mineral resources recovery site.

3.12.2 Impact Assessment

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

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

No Impact. The California Surface Mining and Reclamation Act of 1975 (SMARA) was to address protecting the state's need for a continuing supply of mineral resources, while protecting public an environmental health. SMARA requires that all cities incorporate into their general plans mapped mineral resource designations approved by the State Mining and Geology Board. The State Geologist classifies land in California based on availability of mineral resources. Because available aggregate construction material is limited, five designations have been established for the classification of sand, gravel and crushed rock resources: Scientific Resource, Mineral Resource Zone 1, Mineral Resources Zone 2, and Mineral Resource Zone 3, and Mineral Resource Zone 4.

According to the California Geological Survey , the Project site is not within the vicinity of a location where which indicates the presence of mineral resources.. In addition, California's Division of Oil, Gas and

[15] Kern County General Plan 2009, Chapter 1, Section 1.9, page 52. https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGP_Complete.pdf. Accessed October 11, 2020.
[16] California Department of Conservation Well Finder CalGEM GIS. https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-118.96955/35.06110/15. Accessed October 11, 2020.

Geothermal Resources has no record of active or inactive oil or gas wells or petroleum resources on the Project site or in the vicinity[17]. Therefore, implementation of the Project would not result in the loss of availability of a known mineral resource since no known mineral resources occur in this area. Furthermore, the Project area has not been designated as a locally important mineral resource recovery site by a general plan, specific plan, or land use plan in Kern County. There would be no impact.

[17] DOGGR Map of Oil and Gas Wells. https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-118.96768/35.06191/14. Accessed October 11, 2020.

3.13 Noise

Table 3-22. Noise Impacts

Noise					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	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?	☐	☐	☒	☐
b)	Generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
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?	☐	☐	☐	☒

3.13.1 Environmental Setting

Traffic noise and agricultural noise are the most dominant source of ambient noise near the Project site. State Route (SR) 99 is located on the east side of the Project site and is the largest source of traffic noise in the area due to the high volumes of traffic. Agriculturally generated noises are another significant source of noise in Mettler and in Kern County which is an agriculturally diverse county. The Bakersfield Municipal Airport is located 17.5-miles north of the APE.

The construction period will be approximately twelve months and is expected to begin in January 2021. Truck trips will be limited to daily construction and as-needed maintenance. Construction equipment will consist of excavator, backhoe/loader, concrete truck, concrete pumper. Construction will require one super, one foreman, two operators, four laborers/carpenters/masons.

3.13.2 Impact Assessment

a) Would the project 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. The construction phase of the Project will involve temporary noise sources, originating predominately from off-road equipment, such as backhoes, drilling rigs, scrapers, and tractors. The Project will comply with the Kern County General Plan. According to the Kern County Plan, construction shall be limited to 7:00 a.m. to 5:00 p.m. Operational maintenance activities would be on an as-needed basis with routine monitoring performed by existing staff and would not generate significant new noise. Any impacts would be mild and temporary and therefore considered less than significant.

b) Would the project result in generation of excessive ground borne vibration or ground borne noise levels?

Less than Significant Impact. The construction phase of the Project will likely include some excavation and grading. The project is in a developed area (truck stop and rest area). The APE is approximately 18,000 sq ft including a 20-ft corridor for the connecting pipeline between wells.

The Project is located in a developed truck stop located near a small residential area to the west and agricultural lands to the east, which includes the use of off-road equipment and ground-disturbing activities on a regular basis. The majority of construction will involve open trenching of the 6-inch pipeline in Lupine Street right-of-way. Construction will last approximately twelve months. Since the impacts to ground borne vibration will be temporary. Conditions created by Project-related construction activities would not vary substantially from the baseline conditions routinely experienced onsite. Impacts would be less than significant.

c) For a project located within the vicinity of a private air strip 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 is not located within an airport land use plan or within two miles of an airport. The Bakersfield Municipal Airport is located 17.5-miles north and a private airstrip is located 7.9-miles north by northeast of the Project. Furthermore, the Project does not involve the development of habitable structures or require the presence of permanent staff onsite. There would be no impact.

3.14 Population and Housing

Table 3-23. Population and Housing Impacts

Population and Housing					
	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)?	☐	☐	☐	☒
b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.14.1 Environmental Setting

The Project is located in the Census Designated Place of Mettler, located in the southern portion of Kern County. The Project site is surrounded by agricultural lands, a small community of homes to the west, and water infrastructure currently existing on the site. The Project is located on land zoned Medium Industrial and planned as General Commercial, Residential (maximum 10 Units/New Acre) and Service Industrial by the Kern County General Plan.

According to 2019 Census data, Kern County's population was 900,202 with an estimated percent change from 2010 to 2019 of 7.2%. As of 2014 to 2018, there was an average of 267,913 households with an average of 3.18 persons per house.[18]

Mettler's population has decreased from 157 to 136 between the 2000 and 2010 census. [19]

3.14.2 Impact Assessment

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)?

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project will induce population growth, but rather to bring the water quality into compliance with regulations for 1,2,3-trichloropropane. The Project would not encourage population growth directly or indirectly beyond that previously analyzed by the Kern County General Plan. No housing or habitable structures would be built, nor will any be removed. Implementation of the Project will not result in displacement of people or existing housing. Therefore, there would be no impact.

[18]United States Census Bureau Quick Facts. https://www.census.gov/quickfacts/fact/table/kerncountycalifornia/PST045219 Accessed October 11, 2020.
[19] 2010 United States Census Bureau, Mettler, CA. https://www.census.gov/content/census/en/search-results.html?stateGeo=none&q=Mettler CA&searchtype=web Accessed October 11, 2020.

3.15 Public Services

Table 3-24. Public Services Impacts

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

3.15.1 Environmental Setting

Fire Protection: As Mettler is within the jurisdiction of Kern County, Kern County will provide the fire protection services. Fire response is currently provided by one County Fire Station servicing Mettler. The Kern County Fire Station #55, Tejon Ranch Station will be serving Mettler and is approximately 8.3-miles south of the Project. The Tejon Ranch Station has one Fire Engine and is staffed with three company officers, two Fire Lieutenants, one Fire Captain, and eight paid On-Call Fire Fighters are assigned to this station. Response time is approximately seven minutes from this station to Mettler.

Police Protection: The Kern County Sheriff's Department has a Lamont substation that covers 840 square miles and serving rural populations, including Mettler. This substation serves approximately 15,000 people. Total staff for the substation includes: 1 Sergeant, 3 Senior Deputies, 20 Deputy Sheriffs and 2 Sheriff Support Technicians. The substation is also supplemented with an active Citizen Service Unit. This station is located 16.6-miles southwest of the APE. The Lamont Substation is and has historically been the busiest substation in the entire county. Narcotic/gang-related criminal activity and graffiti is ongoing. A large portion of the Lamont Substation jurisdiction consists of farming and ranching communities who experience rural industrial thefts. As a result, patrol deputies work closely with the sheriff's Rural Crime Investigation Unit in order to prevent and deter agricultural, livestock and oilfield related crimes.[20]

[20] Kern County Sheriff's Office – Lamont Substation http://www.kernsheriff.org/Lamont. Accessed October 11, 2020.

Schools: The closest school to the Project is the General Shafter Elementary School. It serves the community of Mettler students from K-8 with approximately 190 students.[21] The school is located 11.2-miles north of the Project.

Parks: There are no County owned/operated parks in Mettler. The nearest County owned/operated parks are the Wind Wolves Preserve – The Wildlands Conservancy located 5.6-miles south of the APE and Los Padres National Forest located 11.5-miles south of the APE. The Los Padres National Forest is located 11.5-miles south of the APE.

Landfills: Arvin Dump is the closest landfill to the community of Mettler, however, it is currently closed. Bena Landfill is located 22.8-miles northeast of the community.

3.15.2 Impact Assessment

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

No Impact. The Project would not require the addition or alteration of any public services. The site is within northwestern Kern County and would utilize existing services provided by the County. There would be no impact to the following public services:

Fire Protection – The Project would continue to be served by the Kern County Fires Station #55, Tejon Ranch Station located 8.3-miles north of the Project site. There would be no impact to public fire services.

Police Protection – Kern County would continue to provide sheriff protection services to the Project site upon implementation of the Project. Emergency response is adequate to the Project site. The closest substation is located in Lamont, 11.5-miles southwest of the Project site. No residential or office construction is proposed for this Project and no additional police protection would be required. There would be no impact.

Schools – General Shafter Elementary School is located 11.25-miles north of the Project site. Implementation would not include construction of any residential structures that would result in an increase of population or would require additional school facilities; therefore, there would be no impact.

Parks and other public facilities –As the Project would not induce population growth, the Project would not create a need for additional park or recreational services. Ledbetter Park is the nearest regional park, located 15.7-miles northeast of the Project site. Additionally, public schools, such as the Mettler Joint Elementary School includes various public recreation facilities. No public facilities would be impacted by this Project.

[21] California Department of Education – Data Quest https://dq.cde.ca.gov/dataquest/dqcensus/enrgrdlevels.aspx?agglevel=District&year=2019-20&cds=1563487 Accessed October 11, 2020.
https://dq.cde.ca.gov/dataquest/dqcensus/EnrEthLevels.aspx?cds=15634876009534&agglevel=School&year=2019-20. Accessed October 8, 2020.

3.16 Recreation

Table 3-25. Recreation Impacts

Recreation					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.16.1 Environmental Setting

Recreational sites often provide wildlife habitat, vegetation to mitigate air pollution, and in some cases aquifer recharge areas or watershed protection, sometimes in addition to agricultural or forestry based economic returns. There are no County owned/operated parks in Mettler. The nearest County owned/operated parks are the Wind Wolves Preserve – The Wildlands Conservancy located 5.6-miles south of the APE and Los Padres National Forest located 11.5-miles south of the APE.

3.16.2 Impact Assessment

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

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The Project would not increase the demand for recreational facilities or put a strain on the existing recreational facilities in or near the community of Mettler. No population growth would be associated with the Project or be necessitated by the Project. There would be no impact.

3.17 Transportation

Table 3-26. Transportation Impacts

Transportation					
	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?	☐	☐	☒	☐
b)	Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c)	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d)	Result in inadequate emergency access?	☐	☐	☒	☐

3.17.1 Environmental Setting

Mettler is a Census-Designated Place located in southern Kern County, dominated by agricultural production. SR 99 is the nearest highway, which is directly east of the Project site. I-5 is located 1.5-miles west of the Project site and is accessed via SR 166. The project is in a developed area (truck stop and rest area) and surrounded by residential development and agriculture lands. The pipeline alignment and well sites are located along the Lupine Street right of way in between Mettler Frontage Road and Camellia Drive. The Transportation Commodities Inc. leasing parking lot is located directly north of the Project site.

The Bakersfield Municipal Airport is located approximately 17.5-miles north and Creekside Airport is located 7.9-miles north by northeast of the Project.

3.17.2 Impact Assessment

a) Would the project conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

b) Would the project conflict or be inconsistent with CEQA Guidelines section 150643. Subdivision (b)?

Less than Significant Impact. The Project includes water treatment at an existing well site. . Construction traffic associated with the Project would be minimal and temporary, approximately lasting twelve months. Operational traffic will be minimal. Operational traffic will consist of maintenance which is already occurring at the well site. There would not be a significant adverse effect to existing roadways in the area.

These construction-related impacts would be temporary and alternate routes will be available for use by vehicles, pedestrians, and bicycles as needed. Although road closures and detours are not anticipated as part of construction. Any and all disturbances to roadways, driveways, sidewalks, curb, and gutter incurred from the Project will be temporary and repaired.

There is no population growth associated with the Project, nor will implementation of the Project result in an increase of staff or drivers utilizing roadways in the area. Therefore, implementation of the Project will not increase the demand for any changes to congestion management programs or interfere with existing level of service standards during the operational phase. Construction-related roadway interferences would be less than significant in nature.

c) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. No new roadway design features are associated with the Project. All potential disturbances to roadways will be temporary and repaired. Therefore, there would be no impact.

d) Result in inadequate emergency access?

Less than Significant Impact. The Project does not propose new roadway design features or permanent alterations to roadways. All potential disturbances to roadways during construction will be temporary and repaired. No road closures or detours are anticipated as part of the construction phase of the Project. Any disturbances to traffic patterns, such as a potential lane diversion will be temporary and minimal in nature, as there will be alternate routes available for emergency vehicles. The operational phase of the Project will have no effect on roadways or emergency access. Therefore, overall potential Project-related impacts to emergency access on local roadways would be considered less than significant.

3.18 Tribal Cultural Resources

Table 3-27. Tribal Cultural Resources Impacts

Tribal Cultural Resources				
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, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.18.1 Environmental Setting

3.18.1.1 Regional Setting

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977) and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

According to the IC records search (**Appendix C**), one previous archaeological survey had been completed within the study area: KE-02172 (Caltrans, 1998, Negative Archaeological Survey Report: 06- KER-99, PM

0.0/9.0 Negative Archaeological Survey Report: 06- KER-99, PM 0.0/9.0). No archaeological resources were identified as a result of that study. Additionally, four previous archaeological surveys had been completed within 0.5-mi of the study area and no archaeological resources were known to exist within that same radius.

3.18.1.2 Methodology

The information for this section was obtained using the same Methodology in **Section 3.5**.

3.18.2 Impact Assessment

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:

a-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)

a-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, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less than Significant Impact with Mitigation Incorporated. Mettler County Water District has not received any formal requests for notification from any State tribes, pursuant to AB 52 see **Appendix C**. A Cultural Resource Survey of the APE was conducted by ASM . A search of the NAHC Sacred Lands Files was also requested. According to the NAHC records, no sacred sites or tribal cultural resources are known in or near the study area (Confidential Appendix A). Letters were sent September 16th, 2020, and follow-up emails were sent October 16th, 2020 to tribes on the contact list. The San Fernando Band of Mission Indians responded on October 13th, 2020 stating the project area is outside their traditional territory and they would defer to the Tejon Tribe; the Fernandeño Tataviam Band of Mission Indians responded on October 13th, 2020 stating the project area is situated outside their ancestral tribal boundaries and they would defer to local tribes; and the San Manuel Band of Mission Indians responded on September 29th, 2020 stating the project area was outside ancestral Serrano Territory and they would not be requesting consulting party status. No additional responses were received.(**Appendix C).**

Based on the records search results, the study area appeared to have low to moderate archaeological and tribal cultural resources sensitivity.

Therefore, it is concluded, barring evidence to the contrary, that there is little or no chance the Project will cause a substantial adverse change to the significance of a tribal cultural resource as defined. Nonetheless, Mitigation Measures CUL-1 and CUL-2, described above in **Section 3.5**, are recommended in the event cultural materials or human remains are unearthed during excavation or construction.

3.19 Utilities and Service Systems

Table 3-28. Utilities and Service Systems Impacts

Utilities and Service Systems					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c)	Result in a determination by the wastewater treatment provider 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?	☐	☐	☐	☒
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 reductions goals?	☐	☐	☒	☐
e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

3.19.1 Environmental Setting

The Project is located in the Census-Designated Place of Mettler, in southern Kern County. The proposed Project will treat the TCP with GAC and blend Well No. 4 water with Well No. 3 water to reduce the level of nitrate. The Project is in a developed area (truck stop and rest area). The APE is approximately 18,000 sq ft including a 20 ft corridor for the connecting pipeline. There would be no need for new utilities or services beyond the current and existing baseline

3.19.1.1 Water Supply

The Project lies entirely within the San Joaquin Valley Groundwater Basin – Kern County 5-022.14. Declines in groundwater basin storage and groundwater overdraft are recurring problems in the Central Valley. Measures for ensuring the continued availability of groundwater for municipal needs have been identified and planned in several areas of the county. The measures include groundwater conservation and recharge, and supplementing or replacing groundwater sources for irrigation with surface water.

3.19.1.2 Wastewater Collection and Treatment

No wastewater will be generated during Project construction or operation.

3.19.1.3 Landfills

The closest active landfill to the community of Mettler is Bena Landfill which is located 22.8-miles northeast of the Project site.

3.19.2 Impact Assessment

a) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed Project would not exceed wastewater treatment requirements or require new facilities. The Project will not generate wastewater or require expansion of existing facilities. There would be 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 is the treatment and blending of existing water wells which currently supplies the community of Mettler. The Project would not diminish water supplies and therefore, there would be no impact.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The proposed Project will create no wastewater demand on any wastewater treatment provider, nor will it require any wastewater treatment facilities at the Project site, so there will be no need for any sort of capacity determination by a wastewater treatment provider. There would be no impact.

d) Would the project 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. There will be no solid waste associated with the operational phase of the Project. Waste associated with construction would be minimal and temporary, most of which will be recycled. Therefore, impacts would be less than significant.

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

No Impact. Implementation of the Project involves the treatment of Well 4 in the community of Mettler and will not produce any solid waste. Furthermore, the Project would continue to comply with any federal, state, and local regulations. There would be no impact.

3.20 Wildfire

Table 3-29. Wildfire Impacts

Wildfire					
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?	☐	☐	☐	☒
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 uncontrollable spread of wildfire?	☐	☐	☐	☒
c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

3.20.1 Environmental Setting

The Project is located in the Census-Designated Place of Mettler, in southern Kern County. The Project site is in a flat urbanized area of the Central San Joaquin Valley. Construction will be taking place within the existing well sites, and road rights-of-way along Lupine Street for the water transmission line. No structures are being constructed as part of the Project, and the Project is not considered to be population growth inducing. Kern County Fire Station #55 – Tejon Ranch is located 8.3-miles from the Project area.

3.20.2 Impact Assessment

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

b) Would the project, due to slope, prevailing winds, or other factors exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from wildfire or the uncontrolled spread of wildfire?

c) Would the project 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?

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?

No Impact. The Project is not located in or near a state designated responsibility area or lands classified as very high fire hazard severity zones. The Project site is approximately 9.13-miles from the nearest High classification of Fire Hazard Severity Zone (FHSZ) in a Local Responsibility Area. The proposed Project would

not interfere with any adopted emergency response plan or emergency evacuation plan set forth by Kern County General Plan. Furthermore, the proposed Project would not expose the community of Mettler or surrounding areas to the uncontrolled spread of wildfires, require the installation or maintenance of associated infrastructure that would exacerbate fire risk or expose people or structures to any significant risks post-fire. Therefore, further analysis of the Projects potential impacts to wildfire are not warranted. There would be no impacts.

3.21 CEQA Mandatory Findings of Significance

Table 3-30. Mandatory Findings of Significance Impacts

Mandatory Findings of Significance					
	Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Does the project have the potential to 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?	☐	☒	☐	☐
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

3.21.1 Impact Assessment

a) Does the project 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 Impact with Mitigation Incorporated. The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the Project, with incorporation of mitigation measures, will have a less than significant effect on the environment. The potential for impacts to biological resources and cultural resources from the implementation of the proposed Project will be less than significant with the incorporation of the mitigation measures discussed in **Chapter 4 Mitigation Monitoring and Reporting Program.** Accordingly, the proposed Project will involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less than Significant Impact. CEQA Guidelines Section 15064(i) States that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. The proposed Project would include the construction of a water treatment system consisting of up to two 12-foot granular active carbon (GAC) vessels, a nuisance water pond, a large supply tank for backwash water, booster pump upgrade – including by not limited to upsizing to increase flow rate and requires new electrical service. Also included will be a 6-inch water transmission pipeline that will connect Well No. 3 to Well No. 4 for blending. The Project is intended to correct water quality issues experienced by the community of Mettler. Trenching will take place in County right-of-way on Lupine Street and then will be reconstructed per County road standards. No additional roads would be constructed as a result of the Project, nor would any additional public services be required. The proposed Project is intended to improve water quality and would not result in direct or indirect population growth. Therefore, implementation of the Project would not result in significant cumulative impacts and all potential impacts would be reduced to less than significant through the implementation of mitigation measures and basic regulatory requirements incorporated into future Project design.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact. The proposed Project would include the construction and implementation of a water treatment system, the trenching of a 6-inch water transmission pipeline, and additional site improvements including but not limited to a nuisance water pond.. The proposed Project in and of itself would not create a significant hazard to the public or the environment. On the contrary, implementation of the Project would correct water quality issues experienced by the community of Mettler. Construction-related air quality/dust exposure impacts could occur temporarily as a result of project construction. However, implementation of basic regulatory requirements identified in this IS/MND would ensure that impacts are less than significant. Therefore, the proposed Project would not have any direct or indirect adverse impacts on humans. This impact would be less than significant.

Chapter 4 Mitigation Monitoring and Reporting Program

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Mettler County Water District Well 4 TCP and Nitrate Mitigation Project (Project) in the unincorporated community of Mettler in southern Kern County. The MMRP lists mitigation measures recommended in the IS/MND for the Project and identifies monitoring and reporting requirements.

Table 4-1 presents the mitigation measures identified for the proposed Project. Each mitigation measure is numbered with a symbol indicating the topical section to which it pertains, a hyphen, and the impact number. For example, AIR-2 would be the second mitigation measure identified in the Air Quality analysis of the IS/MND.

The first column of **Table 4-1** identifies the mitigation measure. The second column, entitled "When Monitoring is to Occur," identifies the time the mitigation measure should be initiated. The third column, "Frequency of Monitoring," identifies the frequency of the monitoring of the mitigation measure. The fourth column, "Agency Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is implemented. The last columns will be used by the District to ensure that individual mitigation measures have been complied with and monitored.

Table 4-1. Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Biological Resources					
Mitigation Measure BIO-1a: Avoidance of Nesting Bird Season					
The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.	During construction activities	Daily, during construction activities	MCWD		
Mitigation Measure BIO-1b: Pre-Construction Nesting Bird Survey					
If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction surveys for active nests within 30 days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 0.5 mile. If no active nests are observed, no further mitigation is required. Raptor nests are considered "active" upon the nest-building stage.	Within 30 days prior to the start of work performed from February 1 to September 15	Once	MCWD		
Mitigation Measure BIO-1c: Establish Nest Buffers					
On discovery of any active nests near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.	On discovery of active nests	Once, per nest, or more frequently as determined by biologist	MCWD		
Cultural Resources					
Mitigation Measure CUL-1: Archaeological Resources					
In the event that archaeological resources are encountered at any time during development or ground-moving activities within the entire project area, all work in the vicinity of the find shall halt until a qualified archaeologist can assess the discovery. The District shall implement all recommendations of the archaeologist necessary to avoid or reduce to a less than significant level potential impacts to cultural resource. Appropriate actions could include a Data Recovery Plan or preservation in place.	In the event archaeological resources are uncovered	During excavation	MCWD		
Mitigation Measure CUL-2: Human Remains					
If human remains are uncovered, or in any other case when human remains are discovered during construction, the Kern County Coroner is to be notified to arrange proper treatment and disposition. If the remains are identified—on the basis of archaeological context, age, cultural associations, or biological traits—as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will determine the manner in which the remains are treated.	In the event human remains are uncovered	During excavation	MCWD		

Chapter 5 References

List of Sources, Agencies and Persons Consulted:

AB-52 Native Americans: California Environmental Quality Act
http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB52

California Department of Resources Recycling and Recovery (CalRecycle) website:
http://www.calrecycle.ca.gov/

California Department of Toxic Substances Control website:
http://www.envirostor.dtsc.ca.gov/public/

California Department of Conservation's Farmland Mapping and Monitoring Program
https://maps.conservation.ca.gov/

California Department of Fish and Wildlife: https://www.wildlife.ca.gov/Data/CNDDB

California Emissions Estimator Model (CalEEMod), version 2013.2.2

California State Water Resources Control Board website: http://geotracker.waterboards.ca.gov/ and
http://www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml

Caltrans http://www.dot.ca.gov/design/lap/livability/scenic-highways/index.html

Federal Emergency Management Agency (FEMA), Flood Map Service Center website:
http://msc.fema.gov/portal

Google Earth: https://www.google.com/earth/

Native American Heritage Commission http://nahc.ca.gov/

San Joaquin Valley Air Pollution Control District
http://www.valleyair.org/aqinfo/attainment.htm

State Water Resources Control Board, GeoTracker http://geotracker.waterboards.ca.gov/

U.S. Fish & Wildlife Service National Wetlands Inventor: https://www.fws.gov/wetlands/

Chapter 6 List of Preparers

The following firms, individuals, and agency staff contributed to the preparation of this document:

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Appendix A

Air Quality and Greenhouse Gas Emissions Report - CalEEMod Output Files

Mettler CWD Well 4 TCP

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	18.00	1000sqft	0.41	18,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction to take place over approximately 12 months.

Energy Use -

Water And Wastewater -

Stationary Sources - Emergency Generators and Fire Pumps -

Stationary Sources - User Defined -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	175.00
tblConstructionPhase	NumDays	2.00	30.00
tblConstructionPhase	NumDays	5.00	40.00
tblConstructionPhase	NumDays	1.00	10.00
tblGrading	AcresOfGrading	5.00	0.50

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1026	1.0127	0.9455	1.6200e-003	0.0233	0.0540	0.0772	9.3800e-003	0.0499	0.0593	0.0000	142.2121	142.2121	0.0388	0.0000	143.1832
Maximum	**0.1026**	**1.0127**	**0.9455**	**1.6200e-003**	**0.0233**	**0.0540**	**0.0772**	**9.3800e-003**	**0.0499**	**0.0593**	**0.0000**	**142.2121**	**142.2121**	**0.0388**	**0.0000**	**143.1832**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1026	1.0127	0.9455	1.6200e-003	0.0233	0.0540	0.0772	9.3800e-003	0.0499	0.0593	0.0000	142.2120	142.2120	0.0388	0.0000	143.1831
Maximum	**0.1026**	**1.0127**	**0.9455**	**1.6200e-003**	**0.0233**	**0.0540**	**0.0772**	**9.3800e-003**	**0.0499**	**0.0593**	**0.0000**	**142.2120**	**142.2120**	**0.0388**	**0.0000**	**143.1831**

	ROG	NOx	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	10-11-2020	1-10-2021	0.0303	0.0303
2	1-11-2021	4-10-2021	0.2808	0.2808
3	4-11-2021	7-10-2021	0.2972	0.2972
4	7-11-2021	9-30-2021	0.2678	0.2678
		Highest	0.2972	0.2972

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	1.5500e-003	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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
Stationary	0.0000	0.0000	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	**1.5500e-003**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.0000**	**3.4000e-004**

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	1.5500e-003	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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
Stationary	0.0000	0.0000	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	**1.5500e-003**	**0.0000**	**1.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.0000**	**3.4000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2021	1/14/2021	5	10	
2	Grading	Grading	1/14/2021	2/24/2021	5	30	
3	Building Construction	Building Construction	2/25/2021	10/27/2021	5	175	
4	Paving	Paving	10/28/2021	12/22/2021	5	40	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.41

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
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	8.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-003	0.0391	0.0201	5.0000e-005		1.5000e-003	1.5000e-003		1.3800e-003	1.3800e-003	0.0000	4.2755	4.2755	1.3800e-003	0.0000	4.3101
Total	**3.2000e-003**	**0.0391**	**0.0201**	**5.0000e-005**	**2.7000e-004**	**1.5000e-003**	**1.7700e-003**	**3.0000e-005**	**1.3800e-003**	**1.4100e-003**	**0.0000**	**4.2755**	**4.2755**	**1.3800e-003**	**0.0000**	**4.3101**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	9.0000e-005	6.0000e-005	5.9000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1783	0.1783	0.0000	0.0000	0.1784
Total	**9.0000e-005**	**6.0000e-005**	**5.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1783**	**0.1783**	**0.0000**	**0.0000**	**0.1784**

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-003	0.0391	0.0201	5.0000e-005		1.5000e-003	1.5000e-003		1.3800e-003	1.3800e-003	0.0000	4.2755	4.2755	1.3800e-003	0.0000	4.3101
Total	**3.2000e-003**	**0.0391**	**0.0201**	**5.0000e-005**	**2.7000e-004**	**1.5000e-003**	**1.7700e-003**	**3.0000e-005**	**1.3800e-003**	**1.4100e-003**	**0.0000**	**4.2755**	**4.2755**	**1.3800e-003**	**0.0000**	**4.3101**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	9.0000e-005	6.0000e-005	5.9000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1783	0.1783	0.0000	0.0000	0.1784
Total	**9.0000e-005**	**6.0000e-005**	**5.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1783**	**0.1783**	**0.0000**	**0.0000**	**0.1784**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0113	0.0000	0.0113	6.2100e-003	0.0000	6.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.1088	0.1135	1.8000e-004		6.1100e-003	6.1100e-003		5.8300e-003	5.8300e-003	0.0000	15.6140	15.6140	2.9100e-003	0.0000	15.6868
Total	**0.0120**	**0.1088**	**0.1135**	**1.8000e-004**	**0.0113**	**6.1100e-003**	**0.0174**	**6.2100e-003**	**5.8300e-003**	**0.0120**	**0.0000**	**15.6140**	**15.6140**	**2.9100e-003**	**0.0000**	**15.6868**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	5.3000e-004	3.5000e-004	3.5300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0698	1.0698	3.0000e-005	0.0000	1.0704
Total	**5.3000e-004**	**3.5000e-004**	**3.5300e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0698**	**1.0698**	**3.0000e-005**	**0.0000**	**1.0704**

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					0.0113	0.0000	0.0113	6.2100e-003	0.0000	6.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.1088	0.1135	1.8000e-004		6.1100e-003	6.1100e-003		5.8300e-003	5.8300e-003	0.0000	15.6140	15.6140	2.9100e-003	0.0000	15.6867
Total	**0.0120**	**0.1088**	**0.1135**	**1.8000e-004**	**0.0113**	**6.1100e-003**	**0.0174**	**6.2100e-003**	**5.8300e-003**	**0.0120**	**0.0000**	**15.6140**	**15.6140**	**2.9100e-003**	**0.0000**	**15.6867**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	5.3000e-004	3.5000e-004	3.5300e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0698	1.0698	3.0000e-005	0.0000	1.0704
Total	**5.3000e-004**	**3.5000e-004**	**3.5300e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0698**	**1.0698**	**3.0000e-005**	**0.0000**	**1.0704**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0678	0.6987	0.6356	1.0000e-003		0.0392	0.0392		0.0360	0.0360	0.0000	87.5718	87.5718	0.0283	0.0000	88.2799
Total	**0.0678**	**0.6987**	**0.6356**	**1.0000e-003**		**0.0392**	**0.0392**		**0.0360**	**0.0360**	**0.0000**	**87.5718**	**87.5718**	**0.0283**	**0.0000**	**88.2799**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	8.6000e-004	0.0289	5.4400e-003	8.0000e-005	1.7500e-003	8.0000e-005	1.8300e-003	5.1000e-004	7.0000e-005	5.8000e-004	0.0000	7.1580	7.1580	5.5000e-004	0.0000	7.1717
Worker	2.4800e-003	1.6200e-003	0.0165	6.0000e-005	5.6400e-003	4.0000e-005	5.6800e-003	1.5000e-003	4.0000e-005	1.5300e-003	0.0000	4.9923	4.9923	1.2000e-004	0.0000	4.9953
Total	**3.3400e-003**	**0.0306**	**0.0219**	**1.4000e-004**	**7.3900e-003**	**1.2000e-004**	**7.5100e-003**	**2.0100e-003**	**1.1000e-004**	**2.1100e-003**	**0.0000**	**12.1503**	**12.1503**	**6.7000e-004**	**0.0000**	**12.1670**

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	0.0678	0.6987	0.6356	1.0000e-003		0.0392	0.0392		0.0360	0.0360	0.0000	87.5717	87.5717	0.0283	0.0000	88.2798
Total	**0.0678**	**0.6987**	**0.6356**	**1.0000e-003**		**0.0392**	**0.0392**		**0.0360**	**0.0360**	**0.0000**	**87.5717**	**87.5717**	**0.0283**	**0.0000**	**88.2798**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	8.6000e-004	0.0289	5.4400e-003	8.0000e-005	1.7500e-003	8.0000e-005	1.8300e-003	5.1000e-004	7.0000e-005	5.8000e-004	0.0000	7.1580	7.1580	5.5000e-004	0.0000	7.1717
Worker	2.4800e-003	1.6200e-003	0.0165	6.0000e-005	5.6400e-003	4.0000e-005	5.6800e-003	1.5000e-003	4.0000e-005	1.5300e-003	0.0000	4.9923	4.9923	1.2000e-004	0.0000	4.9953
Total	**3.3400e-003**	**0.0306**	**0.0219**	**1.4000e-004**	**7.3900e-003**	**1.2000e-004**	**7.5100e-003**	**2.0100e-003**	**1.1000e-004**	**2.1100e-003**	**0.0000**	**12.1503**	**12.1503**	**6.7000e-004**	**0.0000**	**12.1670**

3.5 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0144	0.1344	0.1418	2.3000e-004		7.0700e-003	7.0700e-003		6.5700e-003	6.5700e-003	0.0000	18.7849	18.7849	5.4700e-003	0.0000	18.9217
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0144**	**0.1344**	**0.1418**	**2.3000e-004**		**7.0700e-003**	**7.0700e-003**		**6.5700e-003**	**6.5700e-003**	**0.0000**	**18.7849**	**18.7849**	**5.4700e-003**	**0.0000**	**18.9217**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.2800e-003	8.3000e-004	8.4700e-003	3.0000e-005	2.9000e-003	2.0000e-005	2.9200e-003	7.7000e-004	2.0000e-005	7.9000e-004	0.0000	2.5675	2.5675	6.0000e-005	0.0000	2.5690
Total	**1.2800e-003**	**8.3000e-004**	**8.4700e-003**	**3.0000e-005**	**2.9000e-003**	**2.0000e-005**	**2.9200e-003**	**7.7000e-004**	**2.0000e-005**	**7.9000e-004**	**0.0000**	**2.5675**	**2.5675**	**6.0000e-005**	**0.0000**	**2.5690**

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	0.0144	0.1344	0.1418	2.3000e-004		7.0700e-003	7.0700e-003		6.5700e-003	6.5700e-003	0.0000	18.7849	18.7849	5.4700e-003	0.0000	18.9217
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0144**	**0.1344**	**0.1418**	**2.3000e-004**		**7.0700e-003**	**7.0700e-003**		**6.5700e-003**	**6.5700e-003**	**0.0000**	**18.7849**	**18.7849**	**5.4700e-003**	**0.0000**	**18.9217**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.2800e-003	8.3000e-004	8.4700e-003	3.0000e-005	2.9000e-003	2.0000e-005	2.9200e-003	7.7000e-004	2.0000e-005	7.9000e-004	0.0000	2.5675	2.5675	6.0000e-005	0.0000	2.5690
Total	**1.2800e-003**	**8.3000e-004**	**8.4700e-003**	**3.0000e-005**	**2.9000e-003**	**2.0000e-005**	**2.9200e-003**	**7.7000e-004**	**2.0000e-005**	**7.9000e-004**	**0.0000**	**2.5675**	**2.5675**	**6.0000e-005**	**0.0000**	**2.5690**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.483371	0.030380	0.169336	0.116038	0.018013	0.005928	0.019788	0.146278	0.001620	0.001664	0.005839	0.000931	0.000816

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.5500e-003	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Unmitigated	1.5500e-003	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Total	**1.5600e-003**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.0000**	**3.4000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.2000e-004	3.2000e-004	0.0000	0.0000	3.4000e-004
Total	**1.5600e-003**	**0.0000**	**1.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.0000**	**3.4000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number
Pump	1

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Pump	0.0000	0.0000	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**

11.0 Vegetation

Appendix B

Biological Evaluation Report

Biological Evaluation

METTLER COUNTY WATER DISTRICT

WELL 4 NITRATE AND 1,2,3-TRICHLOROPROPANE MITIGATION

SEPTEMBER 4, 2020

Mary Beth Bourne, Biologist
PROVOST & PRITCHARD CONSULTING GROUP | 130 N. GARDEN ST VISALIA CA 93291

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PROVOST&
PRITCHARD
CONSULTING GROUP
An Employee Owned Compar

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I. Introduction

The Mettler County Water District (District) plans to mitigate the 1,2,3-Tricholorpropane (TCP) and nitrate contamination in an existing well (Well 4) and bring the water system into compliance with State drinking water standards.

The following technical report was prepared by Provost & Pritchard Consulting Group, in compliance with the California Environmental Quality Act (CEQA), and includes a description of the biological resources present or with potential to occur within the proposed Well 4 Nitrate and 1,2,3-TCP Mitigation (Project) site and surrounding areas and evaluates potential Project-related impacts to those resources.

Project Description

The District located approximately 14 miles south of Bakersfield and supplies drinking water to approximately 40 commercial and residential service connections (where?). The water system is supplied by two active groundwater wells (Wells 3 and 4). Nitrate and the synthetic organic contaminant TCP have been detected at levels higher than their respective maximum contaminant levels (MCLs) at Well 4. MCWD is currently under State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) compliance orders for both TCP and nitrate for Well 4. The purpose of this project is to mitigate the TCP and nitrate contamination and bring the water system into compliance with both standards. Improvements to the system would include treatment of TCP with granular activated carbon (GAC) and blending the Well 4 water with Well 3 water to reduce the level of nitrate. The nitrate blending system would consist of passive, manually adjustable, flow control valves and flow meters with a nitrate analyzer to monitor performance. Structures and other additions to the site would include two 15 feet tall GAC vessels on concrete pads, a backwash supply tank, upsizing the existing booster pump, piping between the wells, a reclaim pump on a concrete pad, and a chain link fence with a double access gate. The Project site would be 18,000 square feet and would include a 20-foot corridor for the connecting pipeline.

Report Objectives

Construction activities such as those proposed by the County could potentially damage biological resources or modify habitats that are crucial for sensitive plant and wildlife species. In cases such as these, development may be regulated by State or federal agencies, subject to provisions of CEQA, and/or addressed by local regulatory agencies.

This report addresses issues related to the following:

1) The presence of sensitive biological resources onsite, or with the potential to occur onsite.

2) The federal, State, and local regulations regarding these resources.

3) Mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of State and federal resource agencies.

Therefore, the objectives of this report are:

1) Summarize all site-specific information related to existing biological resources.

2) Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.

3) Summarize all State and federal natural resource protection laws that may be relevant to the Project Area of Potential Effect (APE).

4) Identify and discuss Project impacts to biological resources likely to occur onsite within the context of CEQA or State or federal laws.

5) Identify and publish a set of avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

Study Methodology

A reconnaissance-level field survey of the Area of Potential Effect (APE) and surrounding area was conducted on August 21, 2020 by Mary Beth Bourne, biologist (see **Figure 3**). The survey consisted of walking through the APE while identifying and noting land uses, biological habitats and communities, and plant and animal species encountered. Furthermore, the APE were assessed for suitable habitats of various wildlife species.

Ms. Bourne conducted an analysis of potential Project-related impacts to biological resources based on the resources known to exist or with potential to exist within the APE and surrounding areas. Sources of information used in preparation of this analysis included: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB); the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; the Jepson Herbarium online database (Jepson eFlora); United States Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS); the NatureServe Explorer online database; the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database; the CDFW California Wildlife Habitat Relationships (CWHR) database; the California Herps online database; and various manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

The field investigation did not include a wetland delineation or focused surveys for special status species. The field survey conducted included an appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from the Project. Furthermore, the field survey was sufficient to generally describe those features of the Project that could be subject to the jurisdiction of federal and/or State agencies, such as the United States. Army Corps of Engineers (USACE), CDFW, and the Regional Water Quality Control Board (RWQCB).

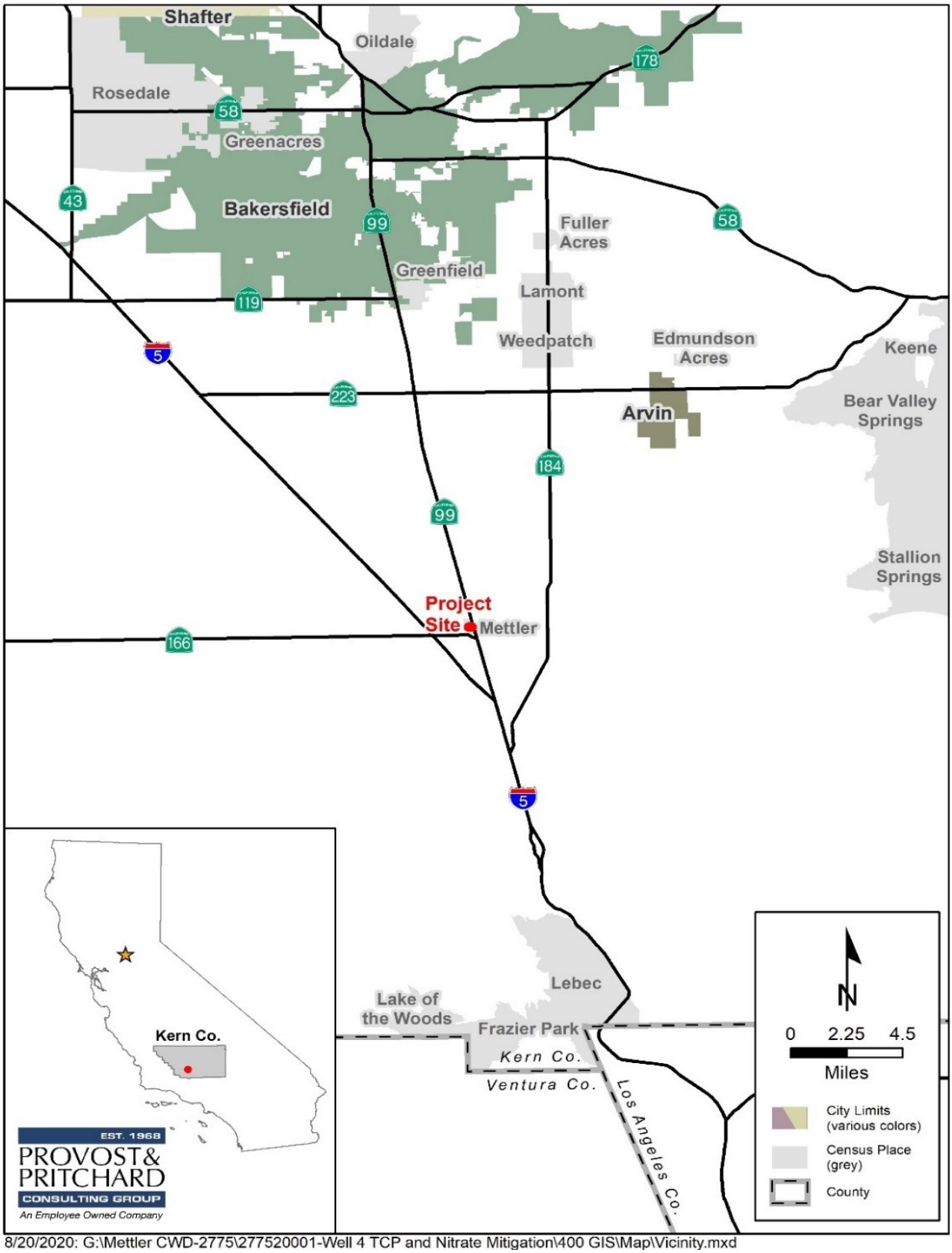


Figure 1. Regional Location Map

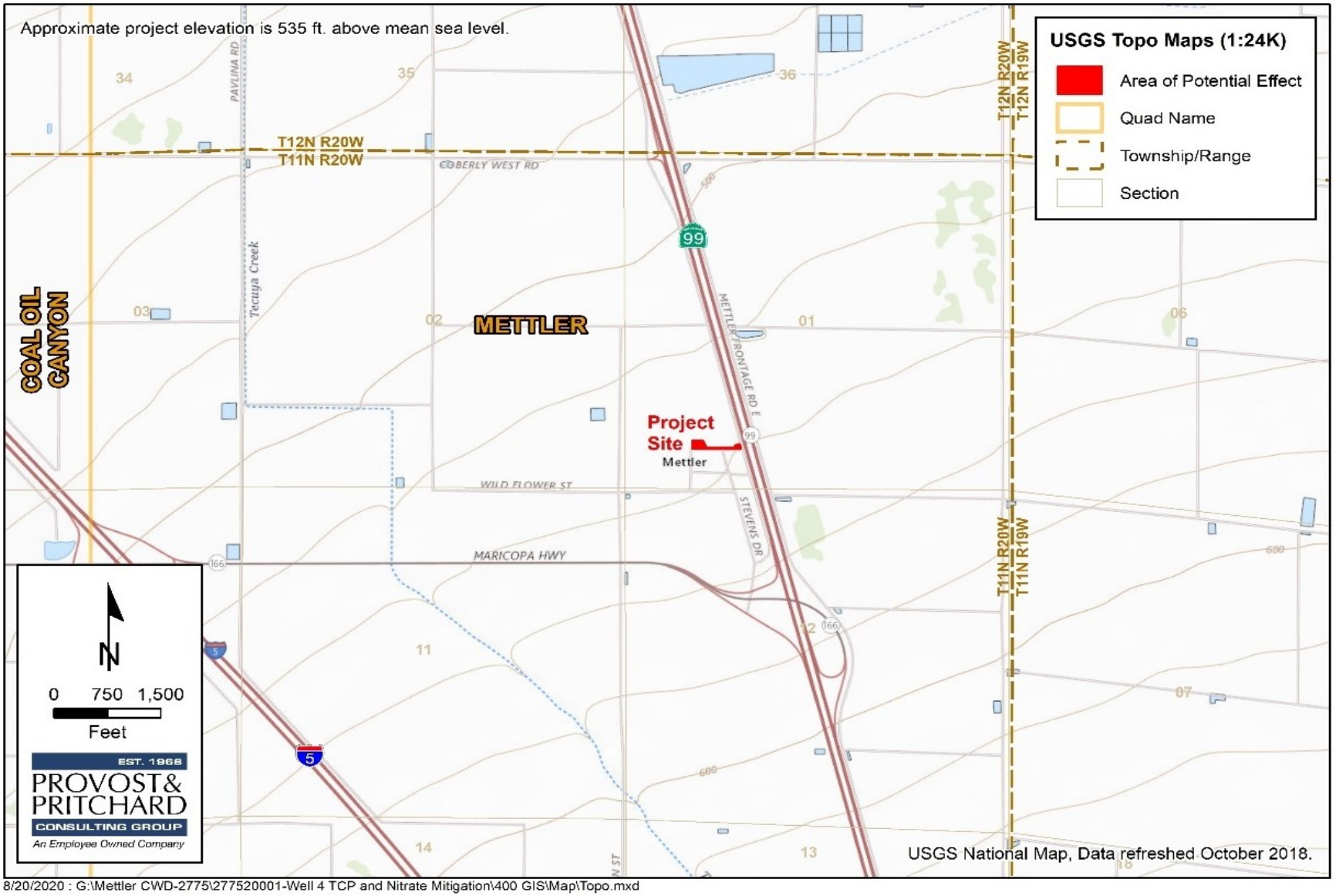


Figure 2. Topographic Quadrangle Map



Figure 3. Area of Potential Effect (APE)

II. Existing Conditions

Regional Setting

The Project site is located in Kern County, which lies within the lower San Joaquin Valley, part of the Great Valley of California (See **Figure 1**). The Valley is bordered by the Sierra Nevada Mountain Ranges to the east, the Coast Ranges to the west, the Klamath Mountains and Cascade Range to the north, and the Transverse Ranges and Mojave Desert to the south.

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 12 inches of precipitation in the form of rainfall yearly, most of which occurs between October and March.

The Project is located approximately 3 miles north of the California Aqueduct, within the Tecuya Creek watershed; Hydrologic Unit Code (HUC): 180300031103 (EPA, 2020). The nearest surface water feature is the channelized and ephemeral Tecuya Creek, located approximately 0.65 miles west of the APE.

The Project lies entirely within the Kern County Groundwater Subbasin of the San Joaquin Valley Groundwater Basin. (DWR, 2020).

Project Location

The Project site is located approximately 100 feet west of California State Route 99 and approximately 0.4 miles north of California State Route 166. The pipeline alignment and well sites are located along the Lupine Street right of way in between Mettler Frontage Road and Camellia Drive. The Transportation Commodities Inc. leasing parking lot is located directly north of the Project site.

Project Site

Biological Communities

One biological community was identified within the APE: ruderal. Surrounding land uses consist of developed and ruderal. All habitats of the APE and surrounding lands are disturbed or frequently maintained, and therefore of relatively low quality for most native wildlife species.

Ruderal

Ruderal habitats are characterized by a high level of human disturbance and absence of vegetation or dominated by non-native plant species. The Project site is located in-between the right-of-away along Lupine Street and the Transportation Commodities Inc., (TCI) leasing lot where numerous tractor-trailers are parked. At the time of the survey, trucks were moving in and out of the lot on a regular basis, producing a high level of noise. The site is located less than 100 feet west of California State Route 99, which also contributed to the noise level. A chain link fence separates each well location and the leasing lot from the right-of-way. Well 4 is located at the northwest corner of Lupine Street and Mettler Frontage Road. Well 3 is located northeast of where Lupine Street turns south into Camellia Drive. The area south of Lupine Street is occupied by residential lots. The area directly behind Well 3 is also a residential lot, and further west is a large agricultural field. At the time of the survey the

field was fallow. Several large black cottonwoods (*Populus trichocarpa*) separate the residential lot from the field and are located less than 30 feet from the APE. The area along the pipeline alignment was dominated by weedy, invasive vegetation. Trees growing along the alignment would need to be removed prior to construction include a small lime tree (*Citrus spp.*) and two California black walnuts (*Juglans californica*). No birds or nests were observed in the trees at the time of the survey. The area along the alignment contained a great deal of trash and debris. Rabbit scat was identified throughout the site and was found in highest concentrations within the fenced well sites. A dead desert cottontail (*Sylvilagus audubonii*) was identified within the Well 3 site during the survey. Multiple living desert cottontails were observed along the western fence of the TCI Leasing. lot. Other scat identified within the APE included domestic dog (*Canis lupus familiaris*). Multiple small holes enough for small mammals to pass through were located underneath the fencing. Common mammal species tolerant of disturbance and would be expected to pass through the area include: raccoons (*Procyon lotor*), coyotes (*Canis latrans*), striped skunks (*Mephitis mephitis*), and non-native opossums (*Didelphis virginiana*). A single rodent bait trap was identified within the parking lot at the time of the field survey, which may be potentially harmful to both prey and predator species that pass through the site. Common reptiles that would be expected to pass through the area may include: San Joaquin fence lizard (*Sceloporus occidentalis biseriatus*) although suitable breeding habitat and refugia was not observed during the biological survey.

Bird species observed at the time of the survey include: starlings (*Sturnus vulgaris*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), and western kingbird (*Tyrannus verticalis*). Although not observed during the field survey, the nearby agricultural field may provide additional suitable foraging habitat for raptors.

The following invasive vegetation was dominant within the site: Russian thistle (*Kali tragus*), puncture vine (*Tribulus terrestris*), foxtail brome (*Bromus madritensis*), and common wild oat (*Avena fatua*). Numerous, short ornamental palms were located in the residential lots across from the APE.

Ruderal areas within the proposed Project site have minimal value to wildlife due to the frequent human disturbance, presence of domestic dogs and cats, and the absence of native vegetation. However, some disturbance-tolerant species may make incidental use of these ruderal lands.

Soils

One soil mapping unit was identified within the APE: Cerini loam, 0 to 2 percent slopes. This soil series consists of very deep, well-drained soils on alluvial fans. Most areas of these soils are cultivated and irrigated or fallow land. When left fallow or uncultivated, native vegetation is usually comprised of annual grasses, forbs, and saltbrush. This soil is not considered hydric but has two minor soil units which are considered hydric. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet.

The complete NRCS Web Soil Survey report is available in **Appendix C** at the end of this document.

Natural Communities of Special Concern

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW is responsible for the classification and mapping of all-natural communities in California. Just like the special status plant and animal species, these natural communities of special concern can be found within the CNDDB.

According to CNDDB, there are no recorded observations of natural communities of special concern with potential to occur within the APE or vicinity. Additionally, no natural communities of special concern were observed during the biological survey.

Designated Critical Habitat

The USFWS often designates areas of "Critical Habitat" when it lists species as threatened or endangered. Critical Habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

According to CNDDB, designated critical habitat is absent from the APE and vicinity.

Wildlife Movement Corridors

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

The APE does not contain features that would be likely to function as wildlife movement corridors. Furthermore, the Project is located in a region often disturbed by intensive agricultural cultivation practices and human disturbance which would discourage dispersal and migration.

Special Status Plants and Animals

California contains several "rare" plant and animal species. In this context, rare is defined as species known to have low populations or limited distributions. As the human population grows, resulting in urban expansion which encroaches on the already limited suitable habitat, these sensitive species become increasingly more vulnerable to extirpation. State and federal regulations have provided the CDFW and the USFWS with a mechanism for conserving and protecting the diversity of plant and animal species native to California. Numerous native plants and animals have been formally designated as "threatened" or "endangered" under State and federal endangered species legislation. Other formal designations include "candidate" for listing or "species of special concern" by CDFW. The CNPS has its list of native plants considered rare, threatened, or endangered. Collectively these plants and animals are referred to as "special status species."

A thorough search of the CNDDB for published accounts of special status plant and animal species was conducted for the Mettler 7.5-minute quadrangle that contains the APE in its entirety, and for the eight surrounding quadrangles: Coal Oil Canyon, Conner, Weed Patch, Arvin, Tejon Hills, Pastoria Creek, Grapevine, and Pleito Hills. These species, and their potential to occur within the proposed Project APE are listed in **Table 1** and **Table 2** on the following pages. Raw data obtained from CNDDB is available in **Appendix B** at the end of this document. Other sources of information utilized in the preparation of this analysis are described above under the heading Study Methodology. **Figure 2** shows the Project's 7.5-minute quadrangles, according to USGS Topographic Maps.

Table 1. List of Special Status Animals with Potential to Occur with the APE.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
American badger *(Taxidea taxus)*	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	**Absent**. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. The nearest observation of this species was recorded in 2012 approximately 9 miles east of the Project in foothill grassland habitat in Tejon Ranch.
bald eagle *(Haliaeetus leucocephalus)*	CE, CFP	Resides in old growth forests as well as lower montane coniferous forests. Nests are generally found in large, old-growth trees within a mile of water. Nests and winters along ocean shores, lake margins, and rivers.	**Unlikely**. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. The only two regional observations of this species occurred in 2000 and 2001 approximately 9 miles southeast of the APE, directly adjacent to the California Aqueduct. At most this species could pass over the site during dispersal movements.
blunt-nosed leopard lizard *(Gambelia sila)*	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	**Unlikely.** The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. The two nearest recorded observations of this species are from historical collections (1891 and 1955) and are each located approximately 3 miles from the APE.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
Buena Vista Lake ornate shrew *(Sorex ornatus relictus)*	FE, CSC	Prefers moist soils, inhabiting marshes, swamps, and riparian shrublands. Uses stumps, logs, and leaf litter for cover.	**Absent**. Suitable habitat for this species is absent from the APE and surrounding area. The only regional recorded observation of this species occurred 19 years ago within the alkali sink shrub and mixed wetland habitat of the former Kern Lake Preserve, approximately five miles northwest of the APE.
burrowing owl *(Athene cunicularia)*	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by mammals, most often ground squirrels.	**Unlikely**. The presence of large trees and raptor perches makes this site unsuitable for burrowing owl. Ground squirrels and suitable burrows were absent and no owl sign was observed during the field survey. The nearest observation of this species was recorded in 1990 within "lowland" habitat approximately 4 miles northeast of the Project.
California glossy snake *(Arizona elegans occidentalis)*	CSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas with loose soil for easy burrowing.	**Absent**. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. All regional recorded observations of this species come from historical collections dating between 1932 and 1952.
California legless lizard *(Anniella sp.)*	CSC	Inhabits a variety of habitats which contain moist, loose soils and plant cover. Often can be found under objects such as rocks, boards, driftwood, and logs.	**Absent**. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. All regional recorded observations of this species come from historical collections dating between 1864 and 1955.
coast horned lizard *(Phrynosoma blainvillii)*	CSC	Found in grasslands, coniferous forests, woodlands, and chaparral, primarily in open areas with patches of loose, sandy soil and low-lying vegetation in valleys, foothills, and semi-arid mountains. Frequently found near ant hills and along dirt roads in lowlands along sandy washes with scattered shrubs.	**Absent**. The disturbed habitats onsite and in the surrounding areas are unsuitable for this species. The only regional recorded observation of this species is from a historical collection dated 1891 and is mapped approximately 13 miles south-southwest of the APE within the Tehachapi Mountains.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
Crotch bumble bee (*Bombus crotchii*)	CCE	Occurs throughout coastal California, as well as east to the Sierra-Cascade crest, and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia*, and *Eriogonum*.	**Absent**. Suitable forage for this species is absent from the APE. The nearest recorded observation of this species is from a historical collection dated 1954 and is mapped "in the general vicinity of Arvin".
least Bell's vireo *(Vireo bellii pusillus)*	FE, CE	This migratory species breeds in southern California. Breeding habitat consists of dense, low, shrubby, riparian vegetation in the vicinity of water or dry river bottoms. By the early 1980s, this species was extirpated from most of its historic range in California, including the Central Valley. This species now occurs exclusively along the coast of southern California (USFWS, 1998).	**Absent**. The APE is outside the current known range of this species. The only regional observation of this species occurred in 1973 approximately 12 miles northeast of the APE. Focused surveys in this same area in 1977 and 1978 resulted in no observations of this species.
long-eared owl (Asio otus)	SSC	Occurs in riparian forests and woodlands, as well as scrublands. Requires adjacent open land for hunting mice, and the nests of crows, hawks, or magpies are required for breeding.	**Unlikely**. The APE is approximately 13 miles from the edge of this species current known range. The nearest recorded observation of this species occurred in 1999 approximately 9 miles east of the APE in non-native grasslands adjacent to riparian habitat. At most, this species could conceivably pass through the Project area during dispersal movements.
Nelson's antelope squirrel *(Ammospermophilus nelsoni)*	CT	Found in the western San Joaquin Valley on dry, sparsely vegetated loamy soils. Relies heavily on existing small mammal burrows.	**Absent**. The disturbed habitats and vegetative cover of the APE are unsuitable for this species. The only two regional recorded observations of this species occurred approximately 8 miles south-southeast of the APE and are from historical collections dated 1903.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
pallid bat *(Antrozous pallidus)*	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.	**Unlikely**. Foraging habitat for this species is absent from the Project area. The only regional recorded observations of this species are from historical collections dated 1903 and 1918. At most this species could pass over the site during dispersal movements.
purple martin (*Progne subis*)	CSC	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities as well as in human-made structures. Nest often located in tall, isolated trees and snags.	**Absent**. Suitable nesting habitat for this species is absent from the Project area. None of the regional observations of this species occurred on the valley floor.
San Joaquin coachwhip *(Masticophis flagellum ruddocki)*	CSC	Found in open dry habitats with little or no tree cover in valley grassland and saltbush scrub communities in the San Joaquin Valley. Relies on mammal burrows for refuge and oviposition sites.	**Unlikely**. According to californiaherps.com (2020), this species is thought to be sensitive to disturbance and does not persist in cultivated areas. Suitable breeding habitat is absent from the APE with no mammal burrows observed during the survey. However, the abundance of cottontails at the site suggests there is potential suitable habitat in the surrounding area. The nearest recorded observation of this species occurred in 2010 approximately 5 miles south of the APE in valley foothill grassland habitat adjacent to the California Aqueduct.
San Joaquin kit fox *(Vulpes macrotis mutica)*	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	**Unlikely**. The highly disturbed habitats of the Project area and fragmentation of the surrounding lands are unsuitable for this species. The Project is located approximately 20 miles east of the West Kern core population. Although some populations of San Joaquin Kit Fox in other parts of

Species	*Status*	*Habitat*	*Occurrence on Project APE*
			California have adapted to an urbanized environment, modern kit fox occurrences are locally scarce. At most, this species could conceivably pass through the Project area during dispersal movements (USFWS, 2010).
Swainson's hawk *(Buteo swainsoni)*	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Possible**. Suitable nesting habitat is present adjacent to the APE in the form of several large cottonwood trees. The nearest recorded observation of this species was of an adult in a nest tree and occurred in 2017 approximately nine miles northeast of the APE. Suitable foraging habitat exists adjacent to the site and prey species were observed during the survey.
Tehachapi slender salamander (*Batrachoseps stebbinsi*)	CT	Found in valley-foothill hardwood-conifer & valley-foothill riparian in the Piute and Tehachapi mountains of Kern County. Prefers wet talus slopes or log-strewn hillsides with a steep, north-facing exposure.	**Absent**. The APE is outside the current known range of this species. The nearest recorded observation occurred in 2009 approximately 13 miles south of the APE in riparian oak woodland and non-native grassland habitat.
Tipton kangaroo rat *(Dipodomys nitratoides nitratoides)*	FE, CE	Burrows in soil. Often found in grassland and shrubland.	**Absent**. The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. The nearest recorded observation of this species occurred more than 40 years ago approximately four miles south of the APE, adjacent to the California Aqueduct.
tricolored blackbird *(Agelaius tricolor)*	CT, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	**Unlikely**. While the Project is located within the historic and current breeding range of this species, suitable foraging and breeding habitat is absent from the APE. The nearest recorded observation of this species occurred in 1992 approximately 4 miles south-southeast of the APE highly vegetated wetland habitat.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
western pond turtle *(Emys marmorata)*	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	**Unlikely**. The channelized and ephemeral nature of Tecuya Creek makes it unsuitable habitat for this species. The nearest recorded observation of this species is from 1988 approximately 5 miles northwest of the APE in an undeveloped area titled "Kern Preserve-Gator Pond" in CNDDB. The preserve does not appear to be currently active. At most this species could pass over the site during dispersal movements.
western spadefoot *(Spea hammondii)*	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**Unlikely**. The highly disturbed habitats of the Project area and surrounding lands are unsuitable for this species. Wetland or vernal pool habitat suitable for breeding is absent from the APE and potential aestivation habitat is marginal, at best. Due to the ephemeral nature and channelization of Tecuya Creek, it is unlikely that this species would utilize this water feature, even seasonally.
yellow-blotched salamander (*Ensatina eschscholtzii croceater*)	CWL	Found in evergreen and deciduous forests, under rocks, logs, and other debris. Shaded north-facing areas seem to be favored, especially near creeks or streams.	**Absent**. The APE is outside the current known range of this species. Suitable habitat is absent from the APE and surrounding area. All three regional observations of this species occurred approximately 13 miles southeast of the APE within the Tehachapi Mountains in oak woodland and riparian habitat.

Table 2. List of Special Status Plants with Potential to Occur within the APE.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
alkali mariposa-lily *(Calochortus striatus)*	CNPS 1B	Found in the Sierra Nevada Foothills, the Desert Mountains, and the Mojave Desert in alkaline meadows, ephemeral washes, and creosote-bush scrub in chaparral, alkali scrub communities, meadows, and seeps at elevations between 230 feet and 5300 feet. Sometimes associated with vernal pools. Blooms April–June.	**Absent**. Habitat required by this species is absent from the APE and surrounding area. The only regional recorded observation of this species occurred approximately 10 miles northeast of the APE within an open spring.
Bakersfield cactus (*Opuntia basilaris var. treleasei*)	CNPS 1B, FE, CE	Found in chenopod scrublands, valley and foothill grasslands, cismontane woodlands where the Transverse range, Coastal range, Sierra Nevada range, and Mojave Desert meet. This species grows in coarse or cobbly well-drained granitic sand at elevations between 394 feet and 492 feet. Blooms March – April.	**Absent**. The APE is outside the elevation range of this species. The disturbed habitats of the APE are unsuitable for this species. Th nearest recorded observations of this species occurred approximately 3 miles southwest of the APE in the vicinity of the California Aqueduct in non-native grassland habitat.
Bakersfield smallscale (*Atriplex tularensis*)	CE, CNPS 1A	Historically found in the southernmost portion of the San Joaquin Valley in valley sink scrub habitat and associated with saltgrass. Grows at elevations between 295 and 655 feet. Blooms June – October.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species occurred in 1991 within the Kern lake Preserve, approximately five miles northwest of the APE. This species was listed as "Extirpated" in 1981 and "Possibly Extirpated" from the area on CNDDB as of 1991.
calico monkeyflower *(Diplacus pictus / Mimulus pictus / Eunanus pictus)*	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, and around granite outcrops within foothill woodland communities at elevations between 450 feet and 4100 feet. Blooms March – May.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species occurred in 2013 approximately 10 miles southeast of the APE in the foothills of the Tehachapi mountains.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
California alkali grass *(Puccinellia simplex)*	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Blooms March–May.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. The only regional recorded observation of this species occurred in 1987 approximately 10 miles northeast of the APE in alkali sink habitat. This species is listed as "Possibly Extirpated" from the area as of 1987.
California jewelflower *(Caulanthus californicus)*	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Transverse Ranges in sandy soils. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 6100 feet. Blooms February–April.	**Absent**. The only regional recorded observation of this species is from a historical collection dated 1935. This species has been listed as "Extirpated" from the area as of 1986.
Comanche Point layia (Layia leucopappa)	CNPS 1B	Occurs in the southernmost portion of the San Joaquin Valley as well as the Mojave Desert in in scrubland and valley-foothill grasslands. Grows on dry hills in white-grey soils at elevations between 325 and 1,145 feet. Blooms March – April. Does not reliably appear every year.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species is from a historical collection dated 1935 where the specimen was recorded as being approximately 6 miles northwest of the APE in valley grassland habitat. No recent recorded observations of this species have occurred on the valley floor and have primarily been in proximity to Comanche Point in Tejon Ranch.
heartscale *(Atriplex cordulata var. cordulata)*	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in saline or alkaline soils within shadescale scrub, valley grassland, and wetland-riparian communities at elevations below 230 feet. Blooms June–July.	**Absent**. Suitable habitat required by this species is absent from the Project area and surrounding lands. The APE is outside the elevation range for this species.
hispid salty bird's-beak (*Chloropyron molle ssp. hispidum*)	CNPS 1B	Grows in the damp, alkali soils of meadows, playas, and sinks in the San Joaquin Valley and Delta-Bay region of California. Found at elevations below 426 feet. Blooms June – July.	**Absent**. Suitable habitat required by this species is absent from the Project area and surrounding lands. The APE is outside the elevation range for this species.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
Horn's milk-vetch *(Astralagus hornii var. hornii)*	CNPS 1B	This facultative species is most frequently found in the San Joaquin Valley and Sierra Nevada foothills in the alkali soils of lake margins, meadows, seeps, and playas at elevations between 196 feet and 984 feet. Blooms May – September.	**Absent**. Suitable habitat required by this species is absent from the Project area and surrounding lands. The nearest recorded observation of this species occurred 50 years ago approximately 9 miles northwest of the APE. The only other regional observations of this species are from historical collections.
Kern Mallow *(Eremalche parryi ssp. kernensis)*	CNPS 1B, FE	Occurs in the San Joaquin Valley and the Inner South Coast Ranges in eroded hillsides and alkali flats; often on dry, open, sandy to clay soils and within alkali scrub communities. Occurs at elevations between 200 feet and 4250 feet. Blooms March–May.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species is from a historical collection dated 1958 and is mapped approximately 4 miles southwest of the APE in the Tehachapi foothills. All recent recorded observations of this species have been located in these foothills.
Lemmon's jewelflower (*Caulanthus lemmonii*)	CNPS 1B	Grows in the Coastal range and Mojave woodlands and grasslands at elevations between 260 and 3,610 feet. Often associated with pinyon pines and junipers. Blooms March – May.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species occurred in 1991 approximately 3 miles southwest of the APE in proximity to Wheeler Ridge in the Tehachapi foothills. The only other regional occurrence of this species is from a historical collection dated 1935.
Lost Hills crownscale *(Atriplex coronata var. vallicola)*	CNPS 1B	Found in the San Joaquin Valley in dried ponds and alkaline soils in alkali scrub, valley and foothill grassland, and vernal pools at elevations below 2900 feet. Blooms April–September.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. The nearest recorded observation of this species is from a 1995 collection and is mapped approximately 9 miles northwest of the APE. The only other regional recorded observation of this species occurred in 2016 and is mapped near the Laval Reservoir within Tejon Ranch.
Munz's tidy-tips *(Layia munzii)*	CNPS 1B	Found in the San Joaquin Valley in alkaline clay soils; often along hillsides in alkali scrub and sometimes valley and foothill grassland. Occurs at elevations between 145 feet and	**Absent**. Suitable habitat is absent from the Project area. The only regional recorded observation of this species is from a historical collection dated 1935 and is mapped approximately 12 miles northeast of the APE.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
		2,625 feet Blooms March–April.	
pale-yellow layia *(Layia heterotricha)*	CNPS 1B	Found in the coastal ranges, transverse range, and occasionally on the San Joaquin valley floor in a variety of habitats including juniper woodlands, coastal scrublands, and foothill grasslands. Grows at elevations between 656 – 5905 feet. Blooms April – June.	**Absent**. Suitable habitat is absent from the Project area. The only regional recorded observation of this species occurred in 1997 approximately 11 miles southwest of the APE in oak woodland habitat within San Emigdio Ranch.
Palmer's mariposa-lily (Calochortus palmeri var. palmeri)	CNPS 1B	Found throughout southwestern California, primarily in wetland habitats, but occasionally in non-wetland habitats, including woodlands and shrublands. Grows at elevations between 3937 and 7218 feet. Blooms May – July.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. The only regional recorded observation of this species occurred in 2014 approximately 10 mile northeast of the APE in the vicinity of Comanche Spring.
Piute Mountains navarretia (*Navarretia setiloba*)	CNPS 1B	Occurs in the Sierra Nevada foothills, San Joaquin Valley, and the Western Transverse Ranges in woodlands at grasslands at elevations between 1640 and 6890 feet. Grows in red clay soils or gravelly loam. Blooms April – July.	**Absent**. The APE is outside the elevation range for this species. No regional observations of this species have occurred on the valley floor.
San Joaquin adobe sunburst *(Pseudobahia peirsonii)*	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada Foothills in bare dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 325 feet and 2950 feet. Blooms March–May.	**Absent**. The disturbed habitats of the APE are unsuitable for this species. The only regional recorded observation of this species occurred in 2016 approximately 13 miles west-northwest of the APE in clay soils and grassland habitat within Tejon Ranch.

Species	*Status*	*Habitat*	*Occurrence on Project APE*
San Joaquin woollythreads *(Monolopia congdonii)*	FE, CNPS 1B	Occurs in the San Joaquin Valley in sandy soils on alkaline or loamy plains in valley and foothill grassland and alkali scrub communities at elevations between 180 feet and 2750 feet. Blooms February–May.	**Absent**. Suitable habitat is absent from the Project area. The only regional recorded observation of this species is from a historical collection dated 1935 and is mapped approximately 11 miles northeast of the APE.
Tejon poppy *(Eschscholzia lemmonii ssp. kernensis)*	CNPS 1B	Occurs in the grasslands of the southern portion of the San Joaquin valley and the foothills of the Transverse mountain range. Found in elevations between 656 feet and 3280 feet. Blooms March – April.	**Absent**. The APE is outside the elevation range for this species. No regional observations of this species have occurred on the valley floor.

EXPLANATION OF OCCURRENCE DESIGNATIONS

Present:	Species observed on the site at time of field surveys or during recent past
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis
Possible:	Species not observed on the site, but it could occur there from time to time
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient
Absent:	Species not observed on the site, and precluded from occurring there due to absence of suitable habitat

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
CCT	California Threatened (Candidate)	CFP	California Fully Protected
CSC	California Species of Special Concern	CWL	California Watch List
SSC	Species of Special Concern		

CNPS Rare plant ranks

1	Plants Rare, Threatened, or Endangered in California and elsewhere

III. Impacts and Mitigation

Significance Criteria

CEQA

General plans, area plans, and specific projects are subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment prior to project implementation. Impacts to biological resources are just one type of environmental impact assessed under CEQA and vary from project to project in terms of scope and magnitude. Projects requiring removal of vegetation may result in the mortality or displacement of animals associated with this vegetation. Animals adapted to humans, roads, buildings, and pets may replace those species formerly occurring on a site. Plants and animals that are State and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. Such impacts may be considered either "significant" or "less than significant" under CEQA. According to California Environmental Quality Act, Statute and Guidelines (AEP 2012), "significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory finding of significance" if the project has the potential to:

> "Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community,

reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory."

Relevant Goals, Policies, and Laws

Kern County General Plan

The Kern County General Plan sets forth the following goals and policies that protect biological resources and which have potential relevance to the Project:

1.10.5 Threatened and Endangered Species

Policies

27. Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.

28. County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.

32. Riparian areas will be managed in accordance with United States Army Corps of Engineers, and the California Department of Fish and [Wildlife] rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measures

Q. Discretionary projects shall consider effects to biological resources as required by the California Environmental Quality Act.

R. Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to the California Environmental Quality Act.

1.10.10 Oak Tree Conservation

Policies

65. Oak woodlands and large oak trees shall be protected where possible and incorporated into project developments.

Implementation Measures

LL. The following applies to development of parcels having oak tree canopy cover of less than 10 percent but containing individual oak trees equal to or greater than a 12-inch diameter trunk at 4.5 feet breast height.

a. Such trees shall be identified on plot plans.

b. Discretionary development shall avoid the area beneath and within the trees unaltered drip line unless approved by a licensed or certified arborist or botanist.

c. Specified tree removal related to the discretionary action may be granted by the decision-making body upon showing that a hardship exists based on substantial evidence in the record.

Threatened and Endangered Species

Permits may be required from the USFWS and/or CDFW if activities associated with a Project have the potential to result in the "take" of a species listed as threatened or endangered under the federal and/or State Endangered Species Acts. Take is defined by the State of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). Take is more broadly defined by the federal Endangered Species Act to include "harm" (16 United States Code, Section 1532(19), 50 Code of Federal Regulation, Section 17.3). The CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

Designated Critical Habitat

When species are listed as threatened or endangered, the USFWS often designates areas of "Critical Habitat" as defined by section 3(5)(A) of the federal Endangered Species Act (ESA). Critical Habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical Habitat is a tool that supports the continued conservation of imperiled species by guiding cooperation with the federal government. Designations only affect federal agency actions or federally funded or permitted activities. Critical Habitat does not prevent activities that occur within the designated area. Only activities that involve a federal permit, license, or funding and are likely to destroy or adversely modify Critical Habitat would be affected.

Migratory Birds

The Federal Migratory Bird Treaty Act (MBTA:16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. Additionally, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the MBTA (Section 3513), as well as any other native non-game bird (Section 3800).

Birds of Prey

Birds of prey are protected in California under provisions of Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

Nesting Birds

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of take by the CDFW.

Wetlands and other "Jurisdictional Waters"

Natural drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition; and
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers* (*SWANCC*) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the United States Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore, jurisdictional water. Furthermore, the Supreme Court clarified that the Environmental Protection Agency (EPA) and the USACE would not assert jurisdiction over ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE regulates the filling or grading of Waters of the United States under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by the "ordinary high-water mark" on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the United States are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity would meet State water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("Waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the United States require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the United States, require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must

obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a Water of the United States may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a notification of lake or streambed alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement would be prepared. Such an agreement typically stipulates that certain measures would be implemented to protect the habitat values of the lake or drainage in question.

Potentially Significant Project-Related Impacts and Mitigation

Species identified as candidate, sensitive, or special status species in local or regional plans policies or regulations by CDFW or the USFWS that have the potential to be impacted by the proposed Project are identified below with corresponding mitigation measures.

Project-Related Mortality and/or Disturbance of Nesting Raptors, Migratory Birds, and Special Status Birds (Including Swainson's Hawk, Merlin, and Mountain Plover)

Portions of the site contain marginal foraging habitat for avian species, including the Swainson's hawk. The APE is adjacent to multiple cottonwood trees, all of which are large enough to support raptor nests , and fallow agricultural field. Smaller avian species may nest within ornamental trees and shrubs in residential yards and trees within the APE. Ground-nesting birds, such as the killdeer could nest on the bare ground, and swallows could nest within buildings or structures in the vicinity.

Swainson's hawks are somewhat common in this portion of Kern County, and there are known nest trees within nine miles of the APE. In the absence of preferred habitat, especially within the Central Valley, Swainson's hawks often nest within eucalyptus trees lining highways, and several raptor species nest within ornamental Mexican fan palms. Although nesting habitat with the APE are not ideal due development, and foraging habitat is suboptimal, raptors, such as the special status Swainson's hawk could conceivably nest or forage near the APE. In the event that a Swainson's hawk or other avian species is foraging within the site during construction activities, the individual would be expected to fly away from disturbance they encounter, subsequently eliminating the risk of injury or mortality while foraging. Birds nesting within the site or on the ground could be injured or killed by Project activities. Furthermore, construction activities could disturb birds nesting within or adjacent to work areas, resulting in nest abandonment. Construction activities that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds constitute a violation of State and federal laws and are considered a significant impact under CEQA.

As previously mentioned, due to the ruderal nature of the lands, nesting and foraging habitat for raptors, resident and migratory birds, and special status birds within the APE is marginal, at best. Habitat of higher foraging and nesting value is regionally abundant. Therefore, the development resulting from implementation of the Project would not be considered a significant loss of foraging or nesting habitat under CEQA.

Nesting bird season is generally accepted as February 1 through August 31; however, Swainson's hawk nesting season is generally accepted as March 1 through September 15. For simplicity, these timeframes have been combined.

Implementation of the following measures would reduce potential impacts to nesting raptors, migratory birds, and special status birds, including Swainson's hawk to a less than significant level under CEQA, and would ensure compliance with State and federal laws protecting these avian species.

Mitigation. The following measures would be implemented prior to the start of construction:

Mitigation Measure 3.3.1a (Avoidance): The Project's construction activities shall occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.

Mitigation Measure 3.3.1b (Pre-construction Surveys): If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist shall conduct pre-construction surveys for active nests within ten (10) days prior to the start of construction. The survey shall include the proposed work area and surrounding lands within 0.5 mile. If no active nests are observed, no further mitigation is required. Raptor nests are considered "active" upon the nest-building stage.

Mitigation Measure 3.3.1c (Establish Buffers): On discovery of any active nests or breeding colonies near work areas, the biologist shall determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Specifically, a 300-foot disturbance-free buffer shall be implemented around breeding colonies of tricolored blackbird, and a 0.5-mile disturbance-free buffer shall be implemented around active Swainson's hawk nests, if feasible. Construction buffers shall be identified with flagging, fencing, or other easily visible means, and shall be maintained until the biologist has determined that the nestlings have fledged.

Mitigation Measure 3.3.1d (WEAP Training): On discovery of any special status bird species, all personnel associated with Project construction shall attend mandatory Worker Environmental Awareness Program (WEAP) training, conducted by a qualified biologist, prior to initiating construction activities (including staging and mobilization). The specifics of this program shall include identification of the special status species and suitable habitats, a description of the regulatory status and general ecological characteristics of the species, and review of the limits of construction and mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information, along with photographs or illustrations of the special status species, shall also be prepared for distribution to all contractors, their employees, and all other personnel involved with construction of the Project. All employees shall sign a form documenting that they have attended WEAP training and understand the information presented to them.

Less Than Significant Project-Related Impacts

Project-Related Impacts to Special Status Plant Species

Twenty special status plant species have been documented in the APE , including alkali mariposa-lily, Bakersfield cactus, Bakersfield smallscale, calico monkeyflower, California alkali grass, California jewelflower, Comanche Point layia, heartscale, hispid salty bird's-beak, Horn's milk-vetch, Kern Mallow, Lemmon's

jewelflower, Lost Hill's crownscale, Munz's tidy-tips, pale-yellow layia, Palmer's mariposa-lily, Piute Mountains navarretia, San Joaquin adobe sunburst, San Joaquin woollythreads, and Tejon poppy. None of these species were observed during the biological survey. As explained in **Table 2**, all of the aforementioned special status plant species are absent from the APE due to past and ongoing disturbance and/or the absence of suitable habitat. Therefore, the implementation of the Project would have no effect on individual plants or regional populations of these special status plant species. Mitigation measures are not warranted.

Project-Related Impacts to Special Status Animal Species Absent From, or Unlikely to Occur on, the APE

Of the 23 regionally occurring special status species, 22 are considered absent or unlikely to occur within the APE due to past or ongoing disturbance and/or absence of suitable habitat. As explained in **Table 1**, the following species were deemed absent from the APE : American badger, Buena Vista Lake ornate shrew, California glossy snake, California legless lizard, coast horned lizard, Crotch bumblebee, least Bell's vireo, Nelson's antelope squirrel, purple martin, Tehachapi slender salamander, Tipton kangaroo rat, yellow-blotched salamander and the following species were deemed unlikely to occur within the APE : bald eagle, blunt-nosed leopard lizard, burrowing owl, long-eared owl, pallid bat, San Joaquin coachwhip, San Joaquin kit fox, tricolored blackbird, western pond turtle, and western spadefoot. Therefore, implementation of the Project would have no impact on these ten special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted. The remaining species was not observed during the field survey but may possibly use the site for nesting or foraging. Appropriate mitigation measures to be implemented are discussed above.

Project-Related Impacts to Wildlife Movement Corridors

The APE does not contain features that would be likely to function as wildlife movement corridors. Wildlife may pass through the APE; however, this does not qualify the site as a movement corridor. Disturbance from the trucking parking lot, residential lots, and California State Route 99 would discourage regular dispersal movements through this site. Furthermore, the Project is located in a region often disturbed by intensive agricultural cultivation practices would also discourage dispersal and migration. Therefore, implementation of the Project would have no impact on wildlife movement corridors. Mitigation is not warranted.

Project-Related Impacts to Critical Habitat

Designated critical habitat is absent from the APE and surrounding lands. Therefore, there would be no impact to critical habitat, and mitigation is not warranted.

Local Policies or Habitat Conservation Plans

Proposed Project design appears to be consistent with the goals and policies of the Kern County General Plan. There are no known habitat conservation plans in the APE. Mitigation is not warranted.

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Appendix A: Study Area Photos

METTLER COUNTY WATER DISTRICT

WELL 4 NITRATE AND 1,2,3-TCP MITIGATION PROJECT



Photograph 1

Overview of the alignment facing east. Lupine Street is visible to the right. Well 3 is visible to the left.



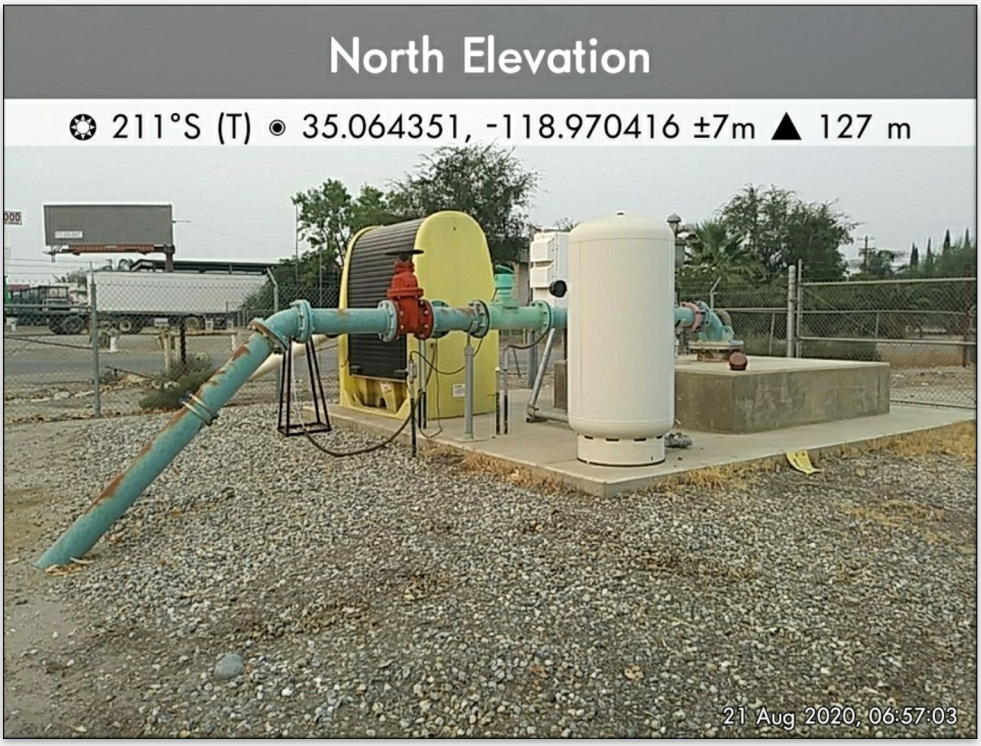
Photograph 2

Overview of the alignment facing west. Lupine Street is visible to the left.



Photograph 3

Overview of well 4 from the corner of Lupine Street and Mettler Frontage Road.



Photograph 4

Overview of well 4 facing south.



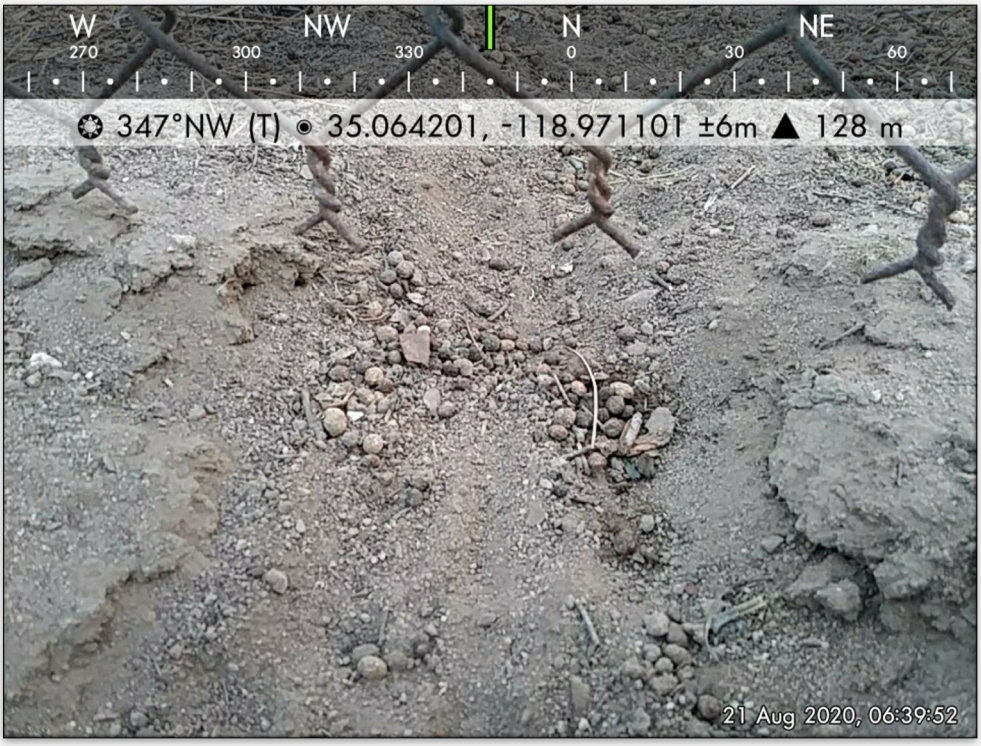
Photograph 5

Overview of the Transportation Commodities Inc. (TCI) parking lot adjacent to the Project site.



Photograph 6

Overview of the fence between the Lupine Street right of way and the TCI parking lot. One of several holes underneath the fence large enough for wildlife to pass through.



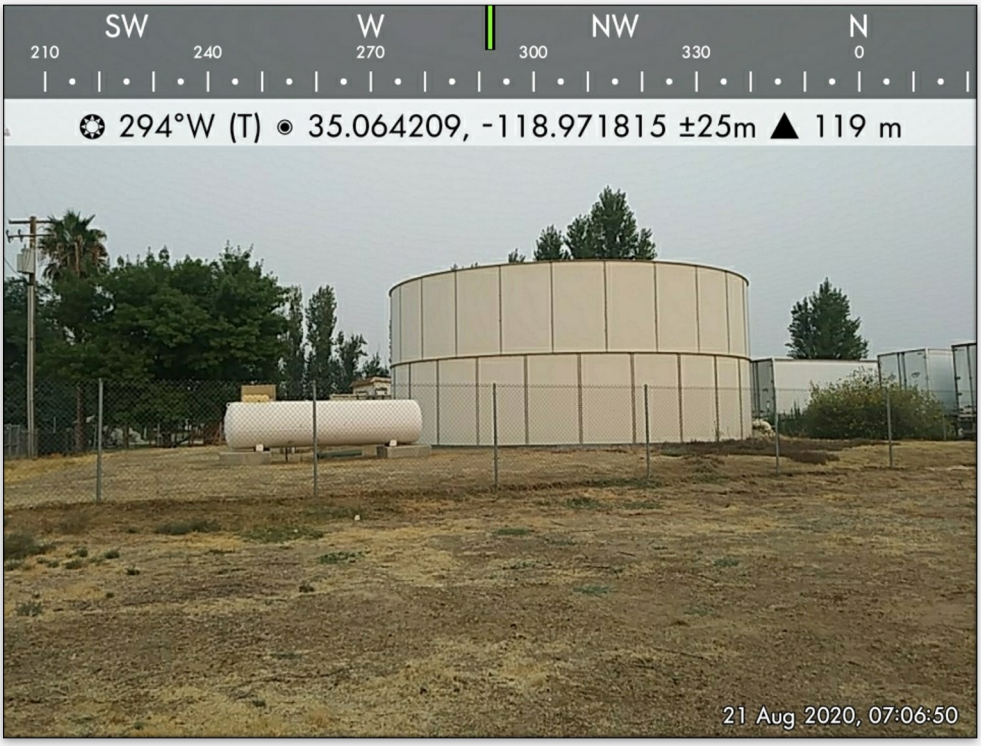
Photograph 7

Rabbit scat located underneath the fence separating the TCI parking lot from Lupine Street.



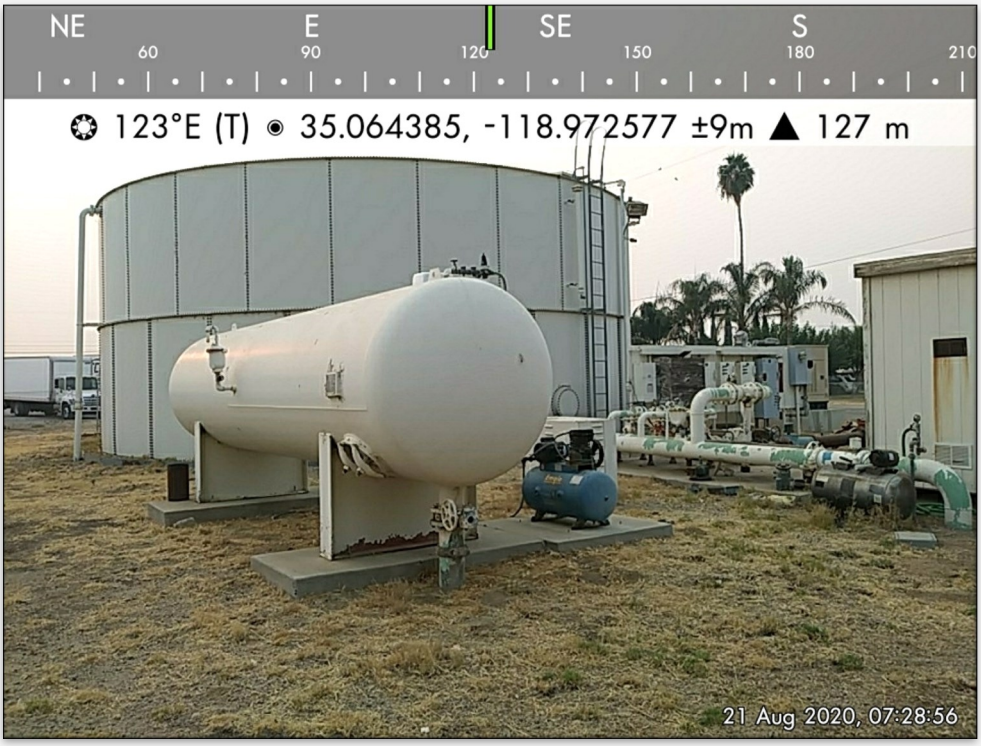
Photograph 8

Wildlife trail leading underneath the fence separating the TCI parking lot from Lupine Street.



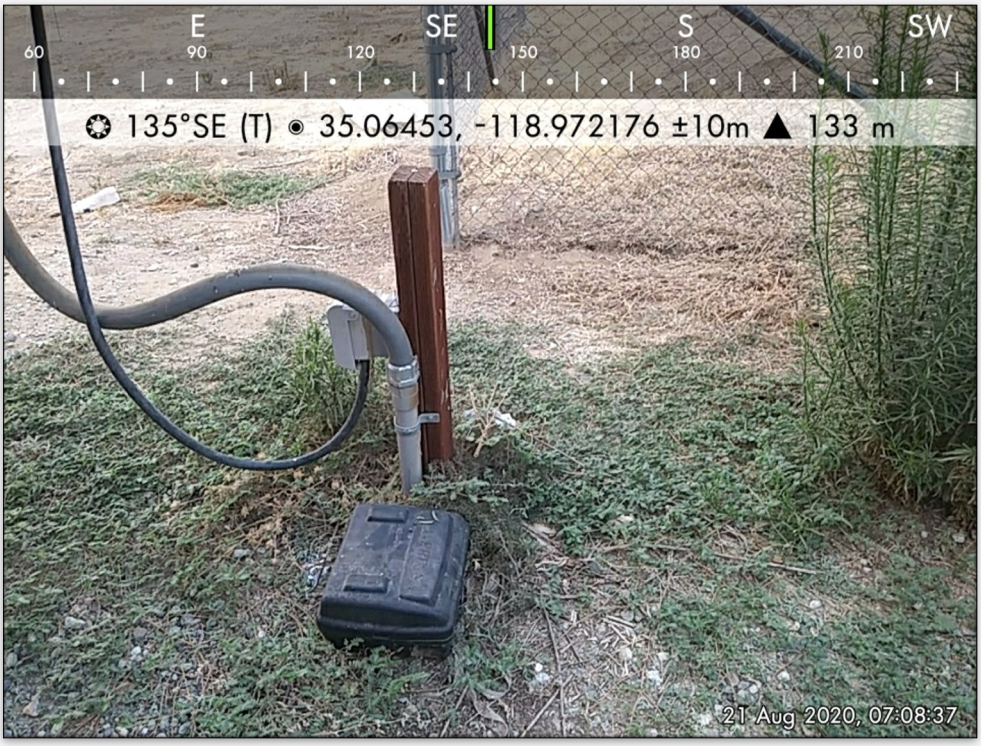
Photograph 9

Overview well 3 facing west.



Photograph 10

Overview well 3.



Photograph 11

Overview of a rodent bait trap located inside the TCI parking lot adjacent to well 3.



Photograph 12

Overview of a dead rabbit inside the fenced area of well 3.



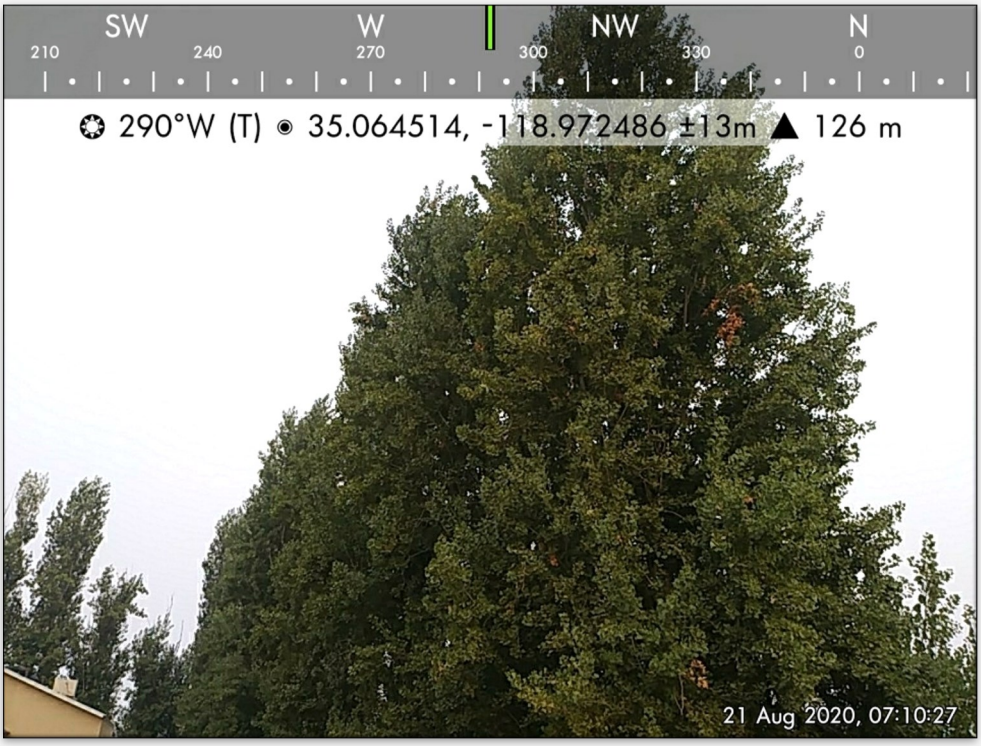
Photograph 13

Overview of the fenced area of well 3. The TCI parking lot is visible in the background.



Photograph 14

Domestic dog scat located underneath the fence separated the TCI parking lot and Lupine Street.



Photograph 15

Overview of the large cottonwood trees located on a residential lot directly adjacent to well 3.



Photograph 16

Overview the agricultural field adjacent to the Project site. A cottonwood tree is visible to the right.

Appendix B: CNDDB Quad Search

METTLER COUNTY WATER DISTRICT

WELL 4 NITRATE AND 1,2,3-TCP MITIGATION PROJECT

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Mettler (3511818) OR Grapevine (3411888) OR Pleito Hills (3411981) OR Coal Oil Canyon (3511911) OR Conner (3511921) OR Weed Patch (3511828) OR Arvin (3511827) OR Tejon Hills (3511817) OR Pastoria Creek (3411887))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali mariposa-lily *Calochortus striatus*	PMLIL0D190	None	None	G3?	S2S3	1B.2
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
Bakersfield cactus *Opuntia basilaris var. treleasei*	PDCAC0D055	Endangered	Endangered	G5T1	S1	1B.1
Bakersfield smallscale *Atriplex tularensis*	PDCHE04240	None	Endangered	GX	SX	1A
bald eagle *Haliaeetus leucocephalus*	ABNKC10010	Delisted	Endangered	G5	S3	FP
blunt-nosed leopard lizard *Gambelia sila*	ARACF07010	Endangered	Endangered	G1	S1	FP
Buena Vista Lake ornate shrew *Sorex ornatus relictus*	AMABA01102	Endangered	None	G5T1	S1	SSC
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
calico monkeyflower *Diplacus pictus*	PDSCR1B240	None	None	G2	S2	1B.2
California alkali grass *Puccinellia simplex*	PMPOA53110	None	None	G3	S2	1B.2
California glossy snake *Arizona elegans occidentalis*	ARADB01017	None	None	G5T2	S2	SSC
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
California legless lizard *Anniella spp.*	ARACC01070	None	None	G3G4	S3S4	SSC
coast horned lizard *Phrynosoma blainvillii*	ARACF12100	None	None	G3G4	S3S4	SSC
Comanche Point layia *Layia leucopappa*	PDAST5N0A0	None	None	G1	S1	1B.1
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
great egret *Ardea alba*	ABNGA04040	None	None	G5	S4	
heartscale *Atriplex cordulata var. cordulata*	PDCHE040B0	None	None	G3T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
hispid salty bird's-beak *Chloropyron molle ssp. hispidum*	PDSCR0J0D1	None	None	G2T1	S1	1B.1
hoary bat *Lasiurus cinereus*	AMACC05030	None	None	G5	S4	
Hoover's eriastrum *Eriastrum hooveri*	PDPLM03070	Delisted	None	G3	S3	4.2
Horn's milk-vetch *Astragalus hornii var. hornii*	PDFAB0F421	None	None	GUT1	S1	1B.1
Kern mallow *Eremalche parryi ssp. kernensis*	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
Kern River pyrg *Pyrgulopsis greggi*	IMGASJ0A10	None	None	G1	S1	
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S2	
Lemmon's jewelflower *Caulanthus lemmonii*	PDBRA0M0E0	None	None	G3	S3	1B.2
long-eared owl *Asio otus*	ABNSB13010	None	None	G5	S3?	SSC
long-legged myotis *Myotis volans*	AMACC01110	None	None	G5	S3	
Lost Hills crownscale *Atriplex coronata var. vallicola*	PDCHE04371	None	None	G4T3	S3	1B.2
moestan blister beetle *Lytta moesta*	IICOL4C020	None	None	G2	S2	
Munz's tidy-tips *Layia munzii*	PDAST5N0B0	None	None	G2	S2	1B.2
Nelson's antelope squirrel *Ammospermophilus nelsoni*	AMAFB04040	None	Threatened	G2	S2S3	
pale-yellow layia *Layia heterotricha*	PDAST5N070	None	None	G2	S2	1B.1
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G5	S3	SSC
Palmer's mariposa-lily *Calochortus palmeri var. palmeri*	PMLIL0D122	None	None	G3T2	S2	1B.2
Piute Mountains navarretia *Navarretia setiloba*	PDPLM0C0S0	None	None	G2	S2	1B.1
purple martin *Progne subis*	ABPAU01010	None	None	G5	S3	SSC
red-breasted sapsucker *Sphyrapicus ruber*	ABNYF05020	None	None	G5	S4	
San Bernardino ringneck snake *Diadophis punctatus modestus*	ARADB10015	None	None	G5T2T3	S2?	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin coachwhip *Masticophis flagellum ruddocki*	ARADB21021	None	None	G5T2T3	S2?	SSC
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S2	
San Joaquin pocket mouse *Perognathus inornatus*	AMAFD01060	None	None	G2G3	S2S3	
San Joaquin woollythreads *Monolopia congdonii*	PDASTA8010	Endangered	None	G2	S2	1B.2
snowy egret *Egretta thula*	ABNGA06030	None	None	G5	S4	
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
Tehachapi slender salamander *Batrachoseps stebbinsi*	AAAAD02090	None	Threatened	G2	S2S3	
Tejon poppy *Eschscholzia lemmonii ssp. kernensis*	PDPAP0A071	None	None	G5T2	S2	1B.1
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Valley Oak Woodland *Valley Oak Woodland*	CTT71130CA	None	None	G3	S2.1	
Valley Saltbush Scrub *Valley Saltbush Scrub*	CTT36220CA	None	None	G2	S2.1	
Valley Sink Scrub *Valley Sink Scrub*	CTT36210CA	None	None	G1	S1.1	
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC
yellow-blotched salamander *Ensatina eschscholtzii croceater*	AAAAD04011	None	None	G5T3	S3	WL
Yuma myotis *Myotis yumanensis*	AMACC01020	None	None	G5	S4	

Record Count: 57

Appendix C: NRCS Soils Report

METTLER COUNTY WATER DISTRICT

WELL 4 NITRATE AND 1,2,3-TCP MITIGATION PROJECT

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Kern County, California, Southwest Part



August 20, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,140 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kern County, California, Southwest Part
Survey Area Data: Version 11, May 29, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 30, 2016—Nov 2, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
132	Cerini loam, 0 to 2 percent slopes	0.9	100.0%
Totals for Area of Interest		**0.9**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Kern County, California, Southwest Part

132—Cerini loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hncv
Elevation: 300 to 960 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 62 to 65 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Cerini and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cerini

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitoid rock

Typical profile

Ap - 0 to 10 inches: loam
Bw1 - 10 to 17 inches: loam
Bw2 - 17 to 24 inches: loam
C1 - 24 to 47 inches: stratified fine sandy loam to silty clay loam
C2 - 47 to 69 inches: stratified sandy loam to sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Calcium carbonate, maximum content: 4 percent
Maximum salinity: Nonsaline to very slightly saline (0.5 to 3.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water capacity: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Excelsior

Percent of map unit: 3 percent
Landform: Alluvial fans
Landform position (three-dimensional): Talf
Hydric soil rating: No

Bakersfield

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Hydric soil rating: Yes

Granoso

Percent of map unit: 2 percent
Landform: Alluvial fans, flood plains
Landform position (three-dimensional): Talf
Hydric soil rating: No

Guijarral

Percent of map unit: 2 percent
Landform: Fan remnants
Landform position (three-dimensional): Talf
Hydric soil rating: No

Klipstein

Percent of map unit: 2 percent
Landform: Alluvial fans, fan remnants
Landform position (three-dimensional): Talf
Hydric soil rating: No

Milagro

Percent of map unit: 2 percent
Landform: Alluvial fans, fan skirts
Landform position (three-dimensional): Talf
Hydric soil rating: No

Unnamed, wash

Percent of map unit: 1 percent
Landform: Inset fans, washes, alluvial fans
Hydric soil rating: Yes

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Appendix C

Cultural Resources Survey

PHASE I SURVEY, METTLER COUNTY WATER DISTRICT WELL PROJECT, KERN COUNTY, CALIFORNIA

Prepared for:

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October 2020
PN 35530.00

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MANAGEMENT SUMMARY

An intensive Phase I cultural resources survey was conducted for the Mettler County Water District (CWD) Well Project, Kern County, California. The study area encompasses an existing well facility within the unincorporated community of Mettler, approximately 15-miles (mi) south of Bakersfield, Kern County, California. ASM Affiliates, Inc., conducted this study, with David S. Whitley, Ph.D., RPA, serving as principal investigator. The study was undertaken to assist with compliance with the California Environmental Protection Act (CEQA).

A records search of site files and maps was conducted at the Southern San Joaquin Valley Information Center (IC), California State University, Bakersfield. According to SSJVIC records, one previous archaeological survey had been completed within the study area, and no cultural resources are known to exist within it. A Sacred Lands File records search was also requested from the Native American Heritage Commission (NAHC) and a contact-list received on August 18th, 2020. Outreach letters were sent September 16th, 2020, and follow-up emails were sent October 16th, 2020 to tribes on the contact list. The San Fernando Band of Mission Indians responded on October 13th, 2020 stating the project area is outside their traditional territory and they would defer to the Tejon Tribe; the Fernandeño Tataviam Band of Mission Indians responded on October 13th, 2020 stating the project area is situated outside their ancestral tribal boundaries and they would defer to local tribes; and the San Manuel Band of Mission Indians responded on September 29th, 2020, also stating that the project area was outside ancestral Serrano Territory and they would not be requesting consulting party status. No additional responses were received.

The Phase I survey fieldwork was conducted in August 2020 with parallel transects spaced at 15-meter (m) intervals walked along the approximately 0.49-acre (ac) study area. No cultural resources of any kind were identified within the study area.

Based on these results, the Mettler CWD Well Project study area do not have the potential to result in adverse effects or significant impacts to historical resources or historic properties, and no additional archaeological work is recommended for these areas. In the unlikely event that cultural resources are discovered during the construction or operation of the proposed project, however, it is recommended that an archaeologist be contacted to assess the find.

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1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc. was retained by the Provost & Pritchard Consulting Group to conduct an intensive Phase I cultural resources survey for the Mettler CWD Well Project study area. The study area is located within the unincorporated community of Mettler, which is approximately 15-mi south of Bakersfield, Kern County, California (Figure 1). The study area consists of an existing well, pipeline corridor, and treatment facility. With an applied 50-feet (ft) survey buffer, the study area totals approximately 0.49-ac. The study was undertaken to assist with compliance with the California Environmental Protection Act (CEQA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historical resources or historic properties do not occur as a result of project construction.

This current study included:

- A background records search and literature review to determine if any known cultural resources were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

David S. Whitley, Ph.D., RPA, served as principal investigator and ASM Associate Archaeologist Robert Azpitarte, B.A., conducted the fieldwork, with assistance in the field from ASM Assistant Archaeologists Maria Silva, B.A., and Margarita Lemus, B.A.

This document constitutes a report on the Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; Native American outreach; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the study area.

1.1 PROJECT LOCATION AND DESCRIPTION

The study area encompasses approximately 0.49- ac of previously developed land on the open flats of the southern San Joaquin Valley, Kern County, California. The study area consists of a well facility located north of the Interstate 5 and Highway 99 interchange, and Highway 166. Specifically, the study area is located in Section 1, Township 11 North, Range 20 West, Mount Diablo Base and Meridian (MDBM).

The Mettler CWD proposes improvements to existing water infrastructure within the community. The study area currently accommodates contemporary water treatment infrastructure, including bolted tanks, generators, electric paneling, concrete pads, pumps.

1.2 REGULATORY CONTEXT

1.2.1 California Environmental Quality Act

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> 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:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.



Figure 1. Location of the Mettler CWD Well Project study area, Kern County, California.

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2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

As noted above, the study area located within the unincorporated community of Mettler, California at an approximate elevation of 535-ft above mean sea level (amsl) and on the open flats of the San Joaquin Valley. Prior to the beginning of land reclamation efforts in the nineteenth century, this area was south of the southern shore of Kern Lake, a water body that varied in horizontal extent seasonally and over time. Because the valley is effectively a flat alluvial plain, the surrounding terrain was periodically inundated, with the size of the lake expanding and contracting as hydrological factors changed. The historical natural environment of the study area, accordingly, would have been a mix of swampy, marshy, and lacustrine habitats (cf. Schoenner 1992). The study area and immediate surroundings have been farmed for over a century, and no native vegetation is present.

According to a southern San Joaquin Valley-wide geoarchaeological model developed by Meyer et al. (2010), the study area has a moderate to high potential for buried archaeological deposits. A site sensitivity model, designed for this portion of the San Joaquin Valley specifically, however, determined that most of the study area west of I-5 has a low probability for archaeological sites, while those portions of the study area to the east of this highway have a moderate probability (ASM Affiliates 2015).

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977) and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

Kroeber (1925: Plate 47) lists the study area most likely lies in Hometwoli Yokuts territory with the principal historic village for this group being *Pohalin Tinliu*, located on the south shore of Kern Lake. Similarly, Latta (1977) shows *Pohalin Tínleu* (Kroeber's *Pohalin Tinliu*) as the nearest village to the study area; however, he indicates that village was in Yaulaumne Yokuts territory.

Regardless of that fact, the Yokuts settlement pattern was largely consistent across distinct tribes. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general prehistory of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. Over 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake north of the study area, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation across California, however, first occurs during the middle Holocene, roughly 7,500 to 4,000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard

seeds and nuts with tool-kits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time, although a site deposit dating to this age has been identified along the ancient Buena Vista shoreline in Kern County to the south (Rosenthal et al. 2007). Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4,000 YBP during the *Middle Horizon* (or Intermediate Period). This period is known climatically as the Holocene Maximum (circa 3,800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. It was marked archaeologically by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmiller culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even a rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called "Shoshonean Wedge" in southern California, the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam and Kitanemuk, may have moved into the region at that time (Sutton 2009, rather than at about 1500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al n.d.). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W & S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3,500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W & S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W & S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W & S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W & S

Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the study area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1,500 and 800 YBP, with a growing archaeological consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California prehistory. This corresponds to the so-called Medieval Climatic Anomaly, followed by the Little Ice Age, and this general period of climatic instability extended to about A.D. 1860. It included major droughts matched by intermittent "mega-floods," and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90% of the interior populations in some regions, including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages in more favorable locations. Population along the Santa Barbara coast appears to have spiked at about the same time that it collapsed on the Carrizo Plain (ibid). Along Buena Vista Lake, in Kern County, population appears to have been increasingly concentrated towards the later end of the Medieval Climatic Anomaly (Culleton 2006), and population intensification also appears to have occurred in the well-watered Tehachapi Mountains during this same period (W & S Consultants 2006).

What is then clear is that Middle Period villages and settlements were widely dispersed across the south-central California landscape, including in the Sierras and the Mojave Desert. Many of these sites are found at locations that lack existing or known historical fresh water sources. Late Horizon sites, in contrast, are typically concentrated in areas where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1,500 – 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located northwest of the current study area, near the north shore of ancient Tulare Lake. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The Late Horizon can then be understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to ethnographic Native California; suggesting that ethnographic life-ways recorded by anthropologists extend roughly 800 years into the past.

The position of southern San Joaquin Valley prehistory relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms appears to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007) environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is a current important research objective.

2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle (Boyd 1997). As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep and pig (Boyd 1997).

With the increase of ranching in the southern San Joaquin came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

Following the passage of state wide ‘No-Fence’ laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. Settlers began reclamation of swampland in 1866, and built small dams across the Kern River to divert water into the fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County.

During the period of reclaiming unproductive land in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone. One small agricultural settlement, founded by Colonel Thomas Baker in 1861 after procuring one such grant, took advantage of reclaimed swampland along the Kern River. This settlement became the City of Bakersfield in 1869, and quickly became the center of activity in the southern San Joaquin Valley, and in the newly formed Kern County. Located on the main stage road through the San Joaquin Valley, the town became a primary market and transportation hub for stock and

crops, as well as a popular stopping point for travelers on the Los Angeles and Stockton Road. The Southern Pacific Railroad reached the Bakersfield area in 1873, connecting it with important market towns elsewhere in the state, dramatically impacting both agriculture and oil production (Pacific Legacy 2006). According to General Land Office records, the Southern Pacific Railroad patented its route north of Bakersfield between 1874 and 1877. The railroad apparently was constructed a few years prior.

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (three feet wide by two feet deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square miles. Miller and Lux's impact extended beyond Kern County, however. They recognized early-on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, over 100 miles of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River. Descendants of Henry Miller continue to play a major role in California water rights, with his great grandson, George Nickel, Jr., the first to develop the concept of water banking, thus creating a system to buy and sell water (http://exiledonline.com/california-class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting/).

The San Joaquin Valley was dominated by agricultural pursuits until the oil boom of the early 1900s, which saw a shift in the region, as some reclaimed lands previously used for farming were leased to oil companies. Nonetheless, the shift of the San Joaquin Valley towards oil production did not halt the continued growth of agriculture (Pacific Legacy 2006). The Great Depression of the 1930s brought with it the arrival of great number of migrants from the drought-affected Dust Bowl region, looking for agricultural labor. These migrants established temporary camps in the valley, staying on long past the end of the drought and the Great Depression, eventually settling in towns such as Bakersfield where their descendants live today (Boyd 1997).

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3. ARCHIVAL RECORDS SEARCH

3.1 ARCHIVAL RECORDS SEARCH

In order to determine whether the study area had been previously surveyed for cultural resources, and/or whether any such resources were known to exist within or near to it, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (IC) on August 24th, 2020. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study areas; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest. The records search included the study area and a half-mile buffer.

According to the IC records search (Confidential Appendix A), one previous archaeological survey had been completed within the study area: KE-02172 (Caltrans, 1998, *Negative Archaeological Survey Report: 06- KER-99, PM 0.0/9.0 Negative Archaeological Survey Report: 06- KER-99, PM 0.0/9.0*). No archaeological resources were identified as a result of that study. Additionally, four previous archaeological surveys had been completed within 0.5-mi of the study area and no archaeological resources were known to exist within that same radius.

Table 1. Survey reports within 0.5-mi of the Study Area.

Report No	Year	Author (s)/Affiliation	Title
KE-00032	1994	R Osbourne/ California Department of Transportation	Negative Archaeological Survey Report. Highway Project description: District 06, Kern County, Route 99, Post Mile 2.73, Charge Unit 169, Expenditure Authorization 37620K
KE-03239	2000	JH Cleland and J Underwood/ Caltrans	Negative Archaeological Survey Report: 06- KER-99, PM 0.0/9.0
KE-03777	2010	L Leach-Palm/ Far Western Anthropological Research Group, Inc.	Cultural Resources Inventory of Caltrans District 6 Rural Conventional Highways in Fresno, Western Kern, Kings, Madera, and Tulare Counties Summary of Methods and Findings
KE-04208	2009	WM Nettles/ California Department of Transportation	Historic Property Survey Report, Kern Overlay Project, Kern County, California

A search of the Native American Heritage Commission (NAHC) Sacred Lands Files was also requested. According to the NAHC records, no sacred sites or tribal cultural resources are known in or near the study area (Confidential Appendix A). Letters were sent September 16th, 2020, and follow-up emails were sent October 16th, 2020 to tribes on the contact list. The San Fernando Band of Mission Indians responded on October 13th, 2020 stating the project area is outside their traditional territory and they would defer to the Tejon Tribe; the Fernandeño Tataviam Band of Mission Indians responded on October 13th, 2020 stating the project area is situated outside their ancestral tribal boundaries and they would defer to local tribes; and the San Manuel Band of Mission Indians responded on September 29th, 2020 stating the project area was outside ancestral Serrano Territory and they would not be requesting consulting party status. No additional responses were received.

Based on the records search results, the study area appeared to have low to moderate archaeological and tribal cultural resources sensitivity.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Phase I survey of the Mettler CWD Well study area was conducted on August 25th, 2020 by ASM Associate Archaeologist Robert Azpitarte, B.A., with assistance in the field from ASM Assistant Archaeologists Maria Silva, B.A, and Margarita Lemus, B.A. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources and the BLM 8100 Manual, using DPR 523 forms. Parallel survey transects spaced at 15-m apart were employed for the inventory.

The study area is located on the north side of the paved Lupine Street. Within the study area are modern facilities related to water treatment, including tanks, generators, electrical paneling, concrete pads, and pumps. Imported gravels cover some of the study area. Visibility within the study area ranged from 75 percent to 100 percent throughout.

4.2 SURVEY RESULTS

No cultural resources of any kind were identified during the survey, reflecting the previous site sensitivity model for this portion of the southern San Joaquin Valley which forecast low to medium likelihood for sites (ASM Affiliates 2015).

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5. SUMMARY AND RECOMMENDATIONS

An intensive Phase I survey was conducted for 0.49-ac Mettler CWD Well Project, Kern County, California. The results of a records search completed at the IC indicated that one previous survey had been conducted which covered a portion of the study area. An additional four previous surveys had been conducted within 0.5-mi of the study area. No cultural resources were known to exist within, or within 0.5-mi of, the study area.

The NAHC Sacred Lands files were consulted and a tribal contact-list obtained with outreach letters and follow-up emails sent. No tribal cultural resources were identified, or concerns were received.

The survey fieldwork of the 0.49-ac study area was conducted August 25th, 2020 with parallel transects spaced at 15-meter intervals walked across the study area. No cultural resources of any kind were identified during the inventory of the 0.49-ac study area.

5.1 RECOMMENDATIONS

An intensive Phase I survey demonstrated that the 0.49-ac Mettler CWD Well Project study area lacks significant archaeological and/or historical resources. The proposed project therefore does not have the potential to result in adverse impacts or effects to significant historical resources or historic properties. A finding of No Significant Impacts/No Historic Properties Affected is recommended for the Project.

In the unlikely event that previously unknown cultural resources are identified during the development or use of the study area, all project activities must cease in the area of the find and a qualified archaeologist must be notified to evaluate the discovery and implement appropriate evaluation and/or protection measures.

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CONFIDENTIAL APPENDICES